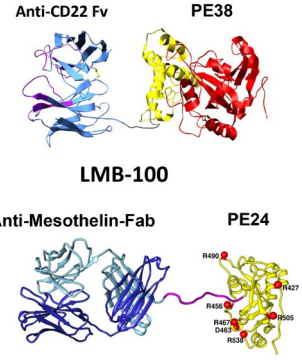
National Cancer Institute

Division of Extramural Activities

Annual Report 2019

A. Construction of Moxetumomab Pasudotox



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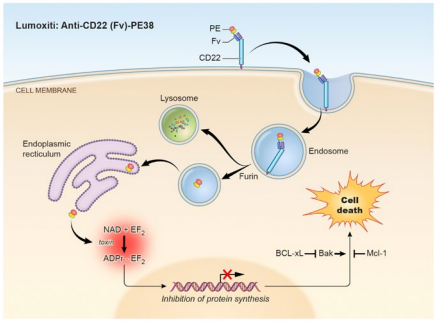

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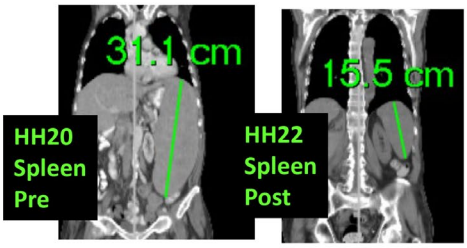

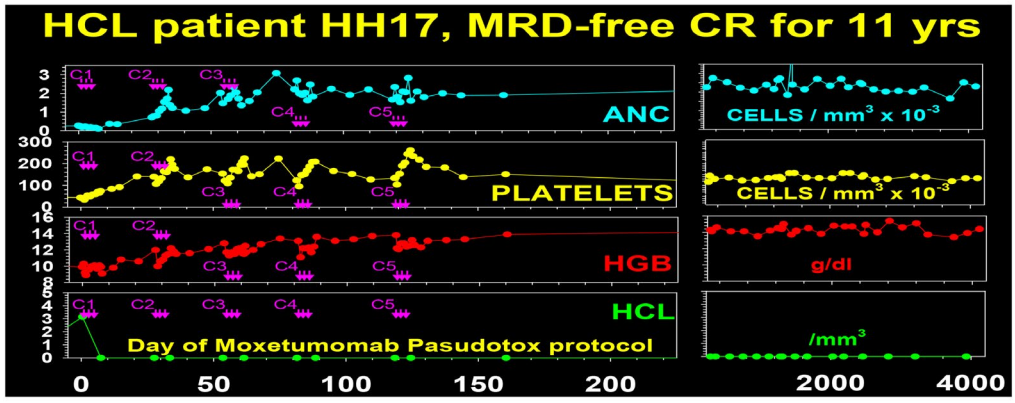

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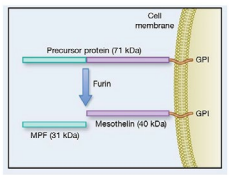

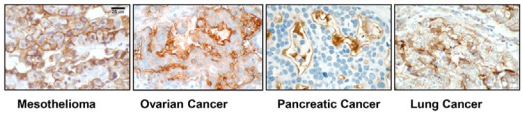

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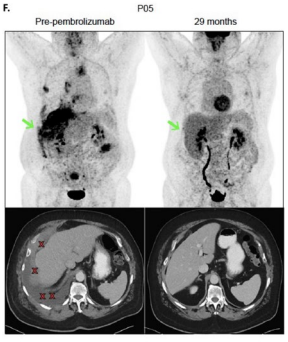

Complete radiologic and PET response in a patient with mesothelioma who received pembrolizumab following LMB-100. Patient continues to have complete response more than 3 years following LMB-100 treatment.

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
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Immunotoxins for Cancer Therapy

With the U.S. Food and Drug Administration (FDA) approval of the immunotoxin moxetumomab pasudotox (Lumoxiti) for treatment of drug-resistant hairy cell leukemia (HCL); https://www.fda.gov/drugs/resources-information-approved-drugs/fda-approves-moxetumomab-pasudotox-tdfk-hairy-cell-leukemia, there is interest in using immunotoxins for treating other cancers.[1] (Cover–Figure A) Immunotoxins were developed in the Laboratory of Molecular Biology (LMB), Center for Cancer Research (CCR), NCI, by the team of Drs. Ira Pastan, David Fitzgerald, Bob Kreitman, and Raffit Hassan. Immunotoxins are hybrid proteins composed of an antibody fragment (Fv or Fab) attached to a protein toxin.[2] The antibody brings the toxin to the cancer cell, and the toxin enters and kills the cell. (Cover–Figure B) After internalization, the toxin is separated from the antibody by furin and travels through the Golgi to the endoplasmic reticulum, where it enters the cytosol and ADP-ribosylates and inactivates elongation factor 2 (EF2). The arrest of protein synthesis leads to apoptosis and cell death.[2] This research group uses *Pseudomonas* exotoxin A (PE) as the toxin moiety and antibodies against CD22 on B cell malignancies or to mesothelin (MSLN) on solid tumors as the targeting moieties. One advantage of using a toxin to kill a cancer cell is that toxins kill cells by inhibiting protein synthesis, a different mechanism of cell killing than cytotoxic drugs used to treat cancer. This property enables immunotoxins to kill drug-resistant cells, such as those found in drug-resistant HCL. One disadvantage is that they induce anti-drug antibodies (ADAs) in patients with normal immune systems, thereby limiting the amount of the drug that can be given.

The structure of immunotoxins now in clinical trials is shown on the cover. Lumoxiti binds with high affinity to CD22, a protein highly expressed in HCL. The Fv is attached to a 38 kDa fragment of PE. Because CD22 is not expressed on other cell types, Lumoxiti does not damage other organs. In 2018, Lumoxiti was approved by the FDA for the treatment of patients with HCL who failed purine analogue therapies.[1] (Cover–Figure C) Lumoxiti was discovered and developed in the LMB, and initial clinical trials were conducted at the NIH. Lumoxiti is licensed to AstraZeneca, which performed the trials necessary for FDA approval. Currently, this research group is conducting studies to determine whether Lumoxiti combined with Rituxan can be used as a first-line therapy so patients might avoid using drugs that damage the bone marrow and enhance the risk of secondary malignancies.

LMB-100 is an immunotoxin that targets mesothelin, also discovered by the LMB team, and it is a popular target for antibody-based therapies because it is expressed on about 30 percent of human cancers and not in essential organs[3] (Cover–Figures A and D). LMB-100 contains an anti-mesothelin Fab fused to a mutant of PE that is much less immunogenic than PE38. The PE38 payload is useful for leukemia patients with immune dysfunction, because bone marrow damage greatly diminishes the formation of ADAs. In contrast, PE38 is not useful for solid tumor patients with normal immune systems who develop ADAs. Consequently, LMB-100 induces immunogenic cell death and, when combined with anti-CTLA-4, produced complete tumor regressions and anti-tumor immunity in mice.[4] In a recent small study, patients with mesothelioma who received Pembrolizumab following treatment with LMB-100 had major tumor responses.[5] (Cover–Figure E) Currently, this combination is being tested in a prospective clinical trial in patients with mesothelioma.

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1. Kreitman R.J. & Pastan I. Contextualizing the use of moxetumomab pasudotox in the treatment of relapsed or refractory hairy cell leukemia. *Oncologist*. 2020;25(1):e170-e177, doi:10.1634/theoncologist.2019-0370.

2. Alewine C., Hassan R., & Pastan I. Advances in anticancer immunotoxin therapy. *Oncologist*. 2015;20(2):176-185, doi:10.1634/theoncologist.2014-0358.

3. Hassan R., et al. Mesothelin immunotherapy for cancer: ready for prime time? *J. Clin. Oncol*. 2016;34(34):4171-4179, doi:10.1200/JCO.2016.68.3672.

4. Leshem Y., et al. Combining local immunotoxins targeting mesothelin with CTLA-4 blockade synergistically eradicates murine cancer by promoting anticancer immunity. *Cancer Immunol. Res*. 2017;5(8):685-694, doi:10.1158/2326-6066.CIR-16-0330.

5. Jiang Q., et al. Enhanced efficacy of mesothelin-targeted immunotoxin LMB-100 and anti-PD1 antibody in patients with mesothelioma and mouse tumor models. *Sci. Transl. Med.* 2020;12(550):eaaz7252, doi:10.1126/scitranslmed.aaz7252.

The cover images and narrative are courtesy of Dr. Ira Pastan, co-Chief, Laboratory of Molecular Biology (LMB), NIH Distinguished Investigator, Head, Molecular Biology Section, Center for Cancer Research (CCR), NCI.

National Cancer Institute

Division of Extramural Activities

Annual Report 2019

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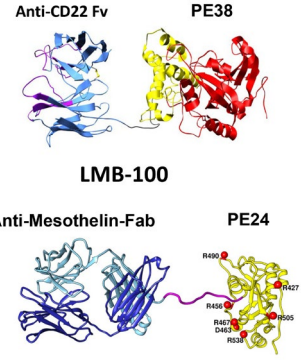

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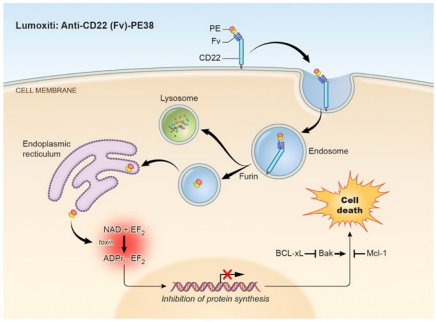

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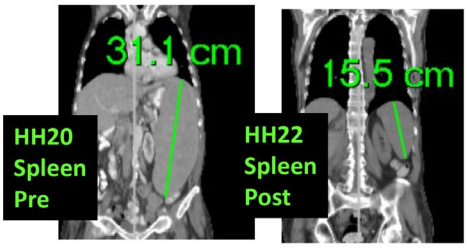

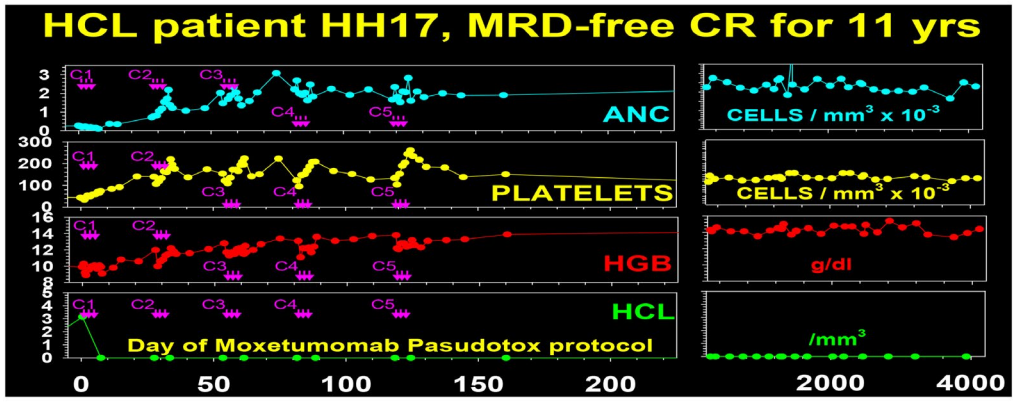

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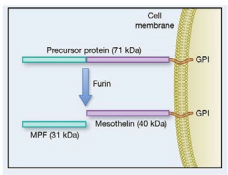

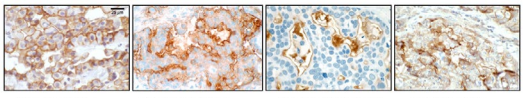

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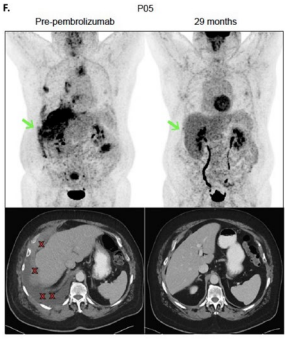

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U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
National Institutes of Health

Contents

Figures

Tables

Appendices

Introduction

The Division of Extramural Activities (DEA) is the organizational component of the National Cancer Institute (NCI) responsible for coordinating the scientific peer review of extramural research proposed before funding and for conducting systematic surveillance of that research after funding. A major responsibility of the DEA is the solicitation of advice from individuals and/or committees of experts on the technical and scientific merit of grants, cooperative agreements, and contracts. The peer review process is critically important to science in that it allows good ideas to surface and to be evaluated based on their merit and promise of the proposed research effort. This system is the keystone for ensuring that the best science is supported.

The DEA coordinates the activities of: (1) the National Cancer Advisory Board (NCAB), which consists of members appointed by the U.S. President, conducts the second-level review of grants and cooperative agreements, and advises the NCI Director on policy for the conduct of the National Cancer Program; (2) the Board of Scientific Advisors (BSA), which is composed of distinguished scientists from outside the NCI and representatives from the advocacy community who advise the NCI leadership on the progress and future direction of the NCI extramural program, evaluates NCI extramural programs and reviews NCI-initiated research concepts; (3) the Frederick National Laboratory Advisory Committee (FNLAC), which reviews the state of research at the Frederick National Laboratory for Cancer Research (FNLCR); and (4) extramural training opportunities for NCI Program and Review staff.

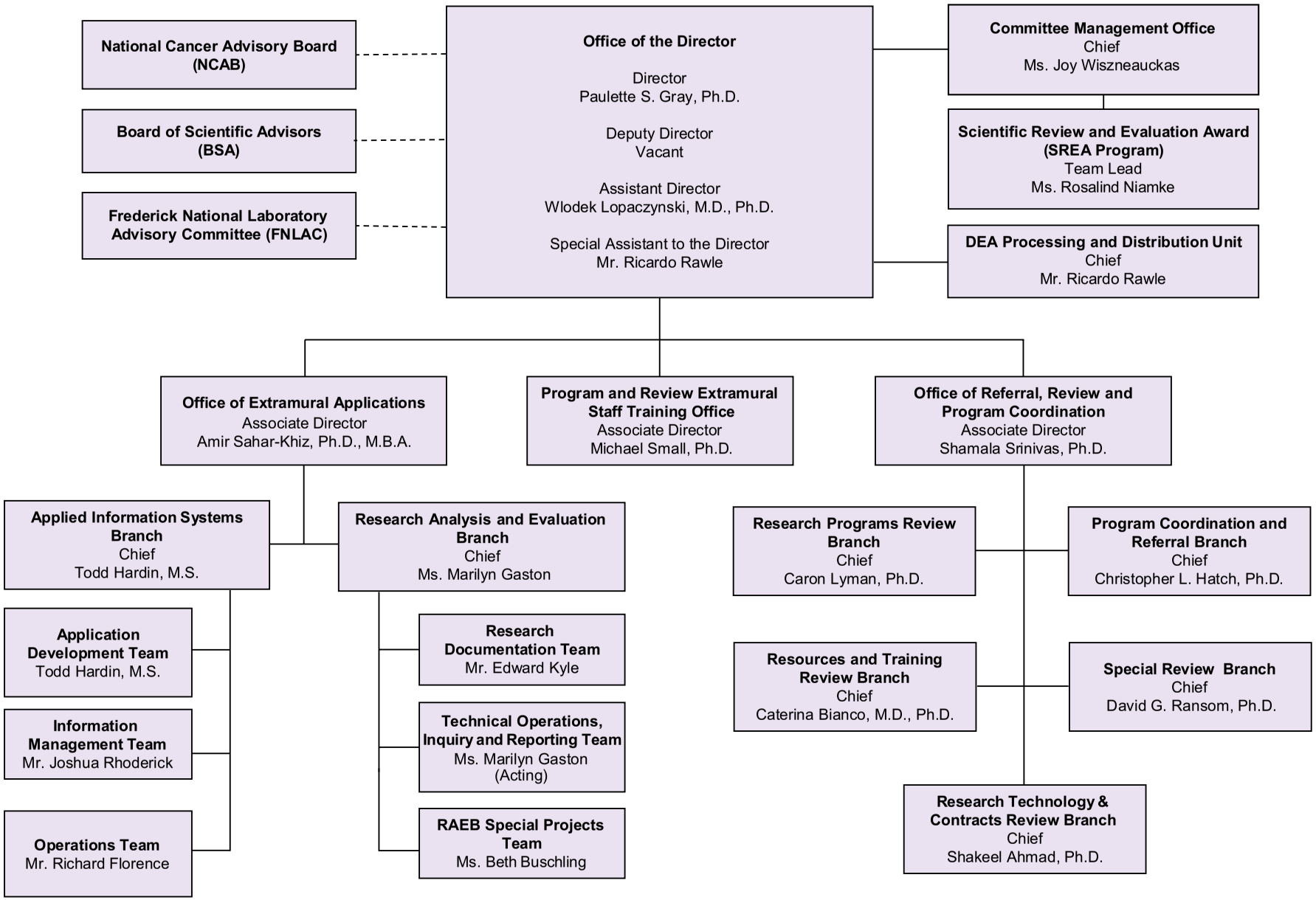
The DEA evaluates the content of all extramural research funded by the NCI and annually tracks the NCI research portfolio of more than 9,000 research and training awards by using consistent budget-linked scientific information to provide a basis for budget projections; maintaining extensive records of this research; providing specialized analyses of the costs, goals, and accomplishments of the research; and serving as an NCI resource to others for reporting and dissemination of the NCI's research portfolio. The DEA monitors budgetary limitations for grant applications; participates in establishing policies to expedite funding; and initiates and implements changes to applications, guidelines, and award processes. Additionally, the Division coordinates the review and response to appeals from applicants regarding the peer review process or the subsequent disposition and management of grants, cooperative agreements, and contracts. It also responds to and coordinates requests from the NIH Office of Extramural Research's Agency Extramural Research Integrity Officer (RIO) for information and assistance regarding scientists (or institutions) supported by NCI research funds who were the subject of allegations, inquiries, and/or investigations of possible research misconduct.

The intent of this annual report is to provide insight and useful information about the role of the DEA in support of NCI's mission and the research funding process. A comprehensive look at each of the major areas of responsibility within the Division is provided. The data presented cover Fiscal Year (FY) 2019 (1 October 2018 – 30 September 2019) and provide data comparison with previous years.

To implement a biomedical research program of the highest quality, the NCI draws on the national pool of scientists actively engaged in research for assistance in selecting the best research and training projects. A sincere thanks to the more than 2,300 researchers, clinicians, and advocates who gave unselfishly of their time in FY2019. Their contribution to the continuing success of NCI's peer review and advisory activities is most appreciated.

Paulette S. Gray, Ph.D.
Director
Division of Extramural Activities

Division of Extramural Activities



Overview of the Division of Extramural Activities

The paramount goal of the National Cancer Institute (NCI) is to develop the knowledge base that will ultimately lessen the impact of cancer. Among the most important contributors to this base are the outstanding extramurally funded scientists supported by the NCI through grants, contracts, and cooperative agreements. The DEA was established within the NCI to provide the Institute and the scientific community with expert scientific review of the merits of extramural research. An important function of the DEA's mission is to manage and coordinate the second-level grant review by the National Cancer Advisory Board (NCAB); concept review of new and re-issue requests for applications (RFAs), research and development (R&D) requests for proposals (RFPs), and program announcements with special receipt, referral, or review (PARs) considerations by the Board of Scientific Advisors (BSA); and, activities of the Frederick National Laboratory Advisory Committee (FNLAC), which reviews the state of research at the Frederick National Laboratory for Cancer Research (FNLCR).

The **Committee Management Office** (CMO) provides oversight of all NCI-chartered advisory boards and committees, subcommittees, working groups, task forces, and review groups. The CMO also serves as an NIH service center for the National Institutes of Health (NIH) Advisory Committee to the Director (ACD), Council of Councils (CoC), Advisory Committee on Research on Women's Health (ACRWH), the National Institute on Alcohol Abuse and Alcoholism (NIAAA), and, the Recombinant Advisory Committee (RAC). The CMO provides policy guidance and assistance to ensure that the NCI and client NIH Institutes, Centers and Offices operate within the appropriate Federal Advisory Committee Act (FACA), the Government in Sunshine Act, and various other policies, procedures, and guidelines.

The **Office of Referral, Review, and Program Coordination** (ORRPC), which consists of four review branches and a program coordination and referral branch, provides: coordination of development and issuance of NCI program initiatives; execution of grant receipt and referral; and management of NCI peer review activities. Review activities include the organization and management of peer review for all applications and proposals received in response to RFAs, PAs, PARs, multi-component grant and cooperative agreement initiatives, and R&D requests for proposals. The program coordination responsibilities of the DEA, in cooperation with NCI extramural program Divisions, Offices, and Centers (DOCs), extend to the development of all new extramural program guidelines and funding opportunity announcements (FOAs).

Another program coordination activity is the development and maintenance of referral guidelines for assignment of grant applications to the NCI. These guidelines, included in the *Referral Guidelines for Funding Components of PHS*, are critical to the development of program initiatives across the NIH, as well as the prompt referral of unsolicited grant applications to the NCI. These guidelines differ from the NCI Internal Referral Guidelines, which are vital to the prompt referral of grant applications to the appropriate NCI programmatic areas.

The **Research Analysis and Evaluation Branch** (RAEB) works closely with the NCI Office of Budget and Finance (OBF) to provide budget-linked portfolio data from NCI grants, cooperative agreements, and contracts. In doing so, the NCI has the capability of responding expeditiously to congressional and other inquiries. The RAEB has historical budget-linked portfolio data that go back to the 1930s.

The DEA conducts continual evaluation of program initiatives and coordinates policies and procedures to ensure adherence by NCI staff, advisory groups, and applicants. The **DEA Office of Extramural Applications** (OEA), through the **Applied Information Systems Branch** (AISB), maintains a Web-based information system to provide key information on new initiatives. This system includes information on approved concepts, listings of active PARs, recently published RFAs, and policies related to the clearance of new program initiatives. As such, information is accessible to the public at https://deainfo.nci.nih.gov/funding.htm and to staff via NCI limited-access Intranet sites.

Special Activities in the Office of the Director, DEA

In addition to managing and coordinating the extramural operations described in this report, the DEA Office of the Director (OD) is a focal point and repository of information and policies related to various funding mechanisms for NIH grants, staff and awardee responsibilities, eligibility requirements, receipt dates for all granting mechanisms, and special programs. Also, the DEA OD ensures that the NCI meets its congressional mandate to promote increased participation of women, children, and members of minority and medically underserved populations in the research areas of cancer cause, prevention, control, diagnosis, and treatment.

The NIH Revitalization Act of 1993 mandates that women and members of minority groups be included as subjects in each research project, unless there are clear scientific or ethical reasons that inclusion is inappropriate with respect to the health of the subject or the purpose of the research. In 1998, an NIH inclusion policy was implemented requiring applicants and grantees to include children (as defined as an individual younger than 18 years of age) in clinical research, unless there is strong justification for their exclusion. In 2019, the policy expanded the Inclusion of Children in Clinical Research Policy to include individuals of all ages, including children and older adults. Administrative procedures allow NCI staff to resolve inclusion problems after initial review of grant applications that are otherwise highly meritorious. In the event an applicant believes the proposed study does not warrant or require inclusion of women, children, or persons from minority or medically underserved population groups, he or she can apply for a waiver of this requirement.

The DEA Director is the Appeals Officer for the NCI and has the authority to grant waivers. In FY2019, 25 applications with preliminary bars to award were received by the DEA. Through corrective action, working with the applicants and NCI program directors, all bars-to-award were brought into compliance before awards were made.

Additionally, the DEA Director serves as the locus for implementation and oversight of NCI policies concerning extramural research integrity and serves as a resource to all NCI staff with questions in this area. In this role, the DEA Director and designees work to address concerns about extramural research misconduct, misuse of human and animal research subjects, financial mismanagement, financial conflict of interest involving NCI-supported research, review integrity and sexual harassment.

The DEA Director functions as the NCI Research Integrity Officer (RIO) and considers all documents related to research misconduct for transmittal and reporting to the NIH. In FY2019, 71 cases of alleged research integrity, including research misconduct and foreign influence, and involving NCI funding were opened and referred to the DEA Director, and they are under investigation by the Office of Extramural Research, NIH, and the Office of Research Integrity, HHS. Eleven cases were completed/closed, and three cases were found to involve research misconduct.[1]

In addition, the *Standard Operating Practice (SOP) Guide for DEA Staff Assistants* (SAs) was developed in FY2019. The SOPs will provide guidances to aid DEA administrative staff and support of Peer Review activities.

Extramural Staff Training

Program and Review Extramural Staff Training Office (PRESTO)

The **Program and Review Extramural Staff Training Office** (PRESTO), which resides in the DEA OD, develops and coordinates the training of NCI Program, Review, and other extramural staff members. The mission of PRESTO is to increase the knowledge base of new and experienced staff members and optimize their effectiveness in

[1] Cases found to involve research misconduct are published in the *Federal Register* and *HHS Office of Research Integrity*.

supporting the goals of the NCI. To accomplish this mission, PRESTO (1) designs and implements a broad-based curriculum for Program and Review staff; (2) provides training on specialized topics related to understanding of and compliance with NIH policies; (3) identifies and develops resources to facilitate individual learning and performance; and (4) tracks the participation of extramural staff in NIH- and NCI-sponsored training activities as well as continuously evaluates the efficacy of these activities.

During FY2019, **PRESTO** activities included the following:

- An Electronic Tools Workshop Series specifically designed for new Program Officials to enhance their knowledge and skills related to the use of various portfolio management and analysis applications, including the Query, View and Report (QVR) system, NCI Workbench, and the NCI Concepts to Award Tracking System (CATS).
- PRESTO-sponsored training focused on administrative, scientific, and research resource topics, including Clinical Trials Stewardship for Supervisors and R&D Contracts, Human Subjects Protection and Inclusion, Emerging Metrics of Grant Productivity, and Advancing Cancer Disparities Research and Diversity Training.
- A half-day Project Management Seminar featuring project management professionals addressing various issues of interest to NCI extramural staff, including effecting messaging, lateral thinking for complex problem solution, and managing motivation.
- A monthly SRO Discussion Luncheon series to provide an opportunity for SROs to share best practices as well as inform them of recent policy and electronic system updates.
- Participation as faculty in the NCI Office of Grants Administration (OGA) "Intro to the Grants Lifecycle."
- Revision of the *NCI DEA Scientific Review Officers Handbook*.

During FY2020, PRESTO will continue to offer a variety of training opportunities with focus on new and emerging topics of broad interest to NCI extramural staff. Various information technology tools will be employed to enhance the effectiveness of PRESTO-sponsored training activities. In addition, PRESTO will support the NCI Clinical Trials Stewardship Committee in developing and implementing training on new Standard Operating Procedures for post-award management of grants involving clinical trials.

DEA Processing and Distribution Unit (DPDU)

Established in 2014, the **DEA Processing and Distribution Unit** (DPDU) maintains DEA facilities and provides services to DEA staff, including the coordination, consolidation, and purchasing of supplies; tracking of expenditures; and preparation of meeting folders, advisory board and committee books, orientation documents, and the Division's annual reports. In conjunction with the establishment of this unit, the number of DEA Purchase Cards was reduced, minimizing the hoarding of office supplies, with an overall reduction in dollar costs associated with their use.

Program Coordination: A Resource for New Funding Initiatives

The DEA performs critical functions in the development of new strategic funding initiatives at the NCI and in the coordination of their publication as Funding Opportunity Announcements (FOAs), which comprise both RFAs and PAs. Members of the **Program Coordination and Referral Branch** (PCRB) provide expert assistance to NCI Program staff to develop and publish new (or re-issue) FOAs. PCRB staff members disseminate various operating policies and procedures pertaining to extramural funding programs. To maintain consistency and completeness, all new and re-issued NCI FOAs and Notices are reviewed, edited as needed, and cleared through the DEA under PCRB coordination, before being forwarded to the NIH Office of Extramural Research (OER) for approval and publication in the *NIH Guide for Grants and Contracts*. In these steps, the PCRB staff members help to streamline and clarify FOA technical parameters and requirements as well as optimize accuracy, precision, and clarity of their presentation in proper format. The PCRB verifies consistency with NIH-wide requirements, provides quality control, and coordinates timelines throughout the development and publication processes. Overall, these services ensure the high quality and timely availability of NCI's funding opportunities for cancer researchers as prospective applicants.

Tables 1a and 1b show the variety of RFAs issued by the NCI in FY2019 and Table 2 lists RFAs issued by other NIH Institutes or Centers (ICs) that the NCI has joined as a participating partner. Tables 3a and 3b show the variety of PAs/PARs issued by the NCI in FY2019, and Table 4 lists PAs/PARs issued by other NIH ICs that the NCI has joined as a participating partner.

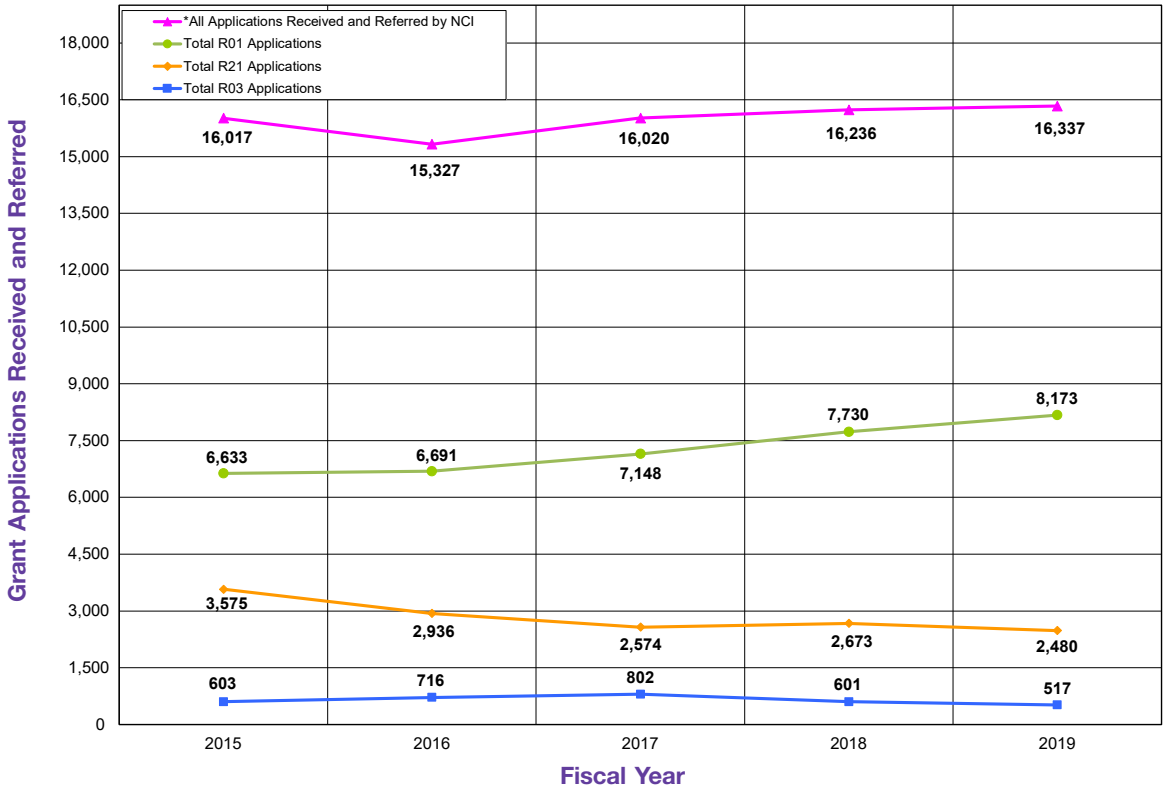
PCRB staff members continue to provide relevant information and timely updates to all NCI extramural staff members on activities and results related to the requirements for and uses of electronic grant applications. The Branch also serves as a direct source of guidance on this topic for program officials at the NCI and applicants in the extramural scientific community. The Referral Officers (ROs) in PCRB collaborated with NCI information technology staff members and their contractors to examine and improve the business systems used for grant application receipt and referral, which contributes to an improved efficiency of use by NCI staff members and quality of service for the NCI's grant applicants and awardees. In addition to performing their program coordination and referral responsibilities, PCRB Health Scientist Administrators also served as SROs in managing the reviews of 370 student loan repayment program (LRP) contract proposals as well as of 75 R13 conference grant applications and a variety of other proposals in FY2019.

Grant Referral: A First Point of Contact for NCI Grantees and Applications

In FY2019, a total of 16,337 grant and cooperative agreement applications were submitted to the NCI for funding with appropriated funds (see Figure 1 and Table 5). Applications and proposals encompassed 75 different types of award activity codes (Appendix F), including investigator-initiated Research Project (R01), Career Development (K series), Research Program Project (P01), Cancer Center Support (P30), Specialized Program of Research Excellence (SPORE, P50), Small Research Project (R03), Exploratory/Developmental Project (R21), Exploratory/Developmental Phase II Project (R33), Outstanding Investigator Award (R35), Research Specialist Award (R50), Small Business Technology Transfer (STTR) (R41/R42), Small Business Innovation Research (SBIR, R43/R44), and Cooperative Agreement (U series) activity codes.

All applications seeking NIH support are initially submitted to the NIH Center for Scientific Review (CSR) Division of Receipt and Referral (DRR), which assigns each application to a specific NIH funding Institute or Center (IC) and the locus of review for the application, i.e., either to a CSR Study Section or within a specific IC. The ICs, in turn, have well-defined processes in place for the internal assignment and review of submitted applications. Upon receipt of applications from the CSR, the NCI Referral Officers (1) assign all incoming applications to 1 of the 54 NCI extramural research program areas; (2) track program acceptance of the applications; and (3) if necessary, negotiate transfers of grant applications to and from the NCI to other NIH ICs, and even other HHS research funding agencies, such as the Agency for Healthcare Research and Quality (AHRQ),

Figure 1. Receipt and Referral of NCI Grant Applications*
FY2015 – 2019



* Includes NCI Primary and Secondary applications received and referred.

the Centers for Disease Control and Prevention (CDC), and the U.S. Food and Drug Administration (FDA).

The first point of contact for applicants seeking NCI support for their research is often a PCRB Referral Officer (RO) who provides the investigators with information related to funding opportunities, peer review policies and process, and contact information of an NCI Program staff member who can provide guidance through the application process. In addition, the RO assists members of the extramural community in navigating NIH and NCI Web pages to obtain current information, forms, and guidelines. The PCRB also serves as the information and coordinating center at the NCI for the submission of applications for the Academic Research Enhancement Award (AREA, R15) grants for research at institutions and organizations that have little or no current NIH grant support.

For certain FOAs, in particular Program Projects and specialized initiatives, applicants are encouraged to submit a Letter of Intent (LOI) to the PCRB prior to the submission of their application. The LOI typically provides the name of the contact Principal Investigator (PI) and other participating key investigators, a listing of the specific aims of the application and a brief description of the research, an approximate cost and years of support to be requested, and any additional information requested in the FOA. In most instances, the LOI is not mandatory or binding but provides the Institute with an estimate of the number of applications that might be submitted in response to a specific FOA.

All applications requesting $500,000 or more in direct costs in any year require prior agreement by NIH staff to accept the assignment of that application to that IC unless stated otherwise in the FOA. This is accomplished by the applicant contacting Program staff well in advance of the anticipated submission date, but no later than 6 weeks before submission for prior approval. If the Program agrees to accept the application, the Program must submit an Awaiting Receipt of Applications (ARA) "form" through the NIH electronic Research Administration (eRA) to CSR DRR. ARAs also are used to facilitate requests for assignments from ICs and other information that needs to be connected to specific applications. For additional guidance on this process, the applicants are referred to NOT-OD-02-004, "Revised Policy on the Acceptance for Review of Unsolicited Applications That Request $500,000 or More in Direct Costs," and NOT-OD-17-005, "Optional Electronic Submission Method to Request to Submit an Unsolicited Application That Will Exceed $500,000 in Direct Costs."

Peer Review—The Next Step

Once applications are referred to the appropriate NCI program, they must be reviewed. The high caliber of NCI-sponsored research is maintained through a peer review process in which experts in the appropriate scientific fields review the scientific and technical merit of research grant applications, cooperative agreements, and contract proposals. The peer review process helps to ensure that the NCI uses its resources wisely and funds research that has the potential to make a significant impact on science and medicine. The NCI's extramural programs and activities are funded primarily through peer-reviewed grants and cooperative agreements. Programs that are funded through R&D contracts also are subjected to peer review, including contract-supported projects conducted within the intramural research program.

The NIH peer review system consists of two sequential levels of review mandated by statute. The first level of review is performed by either an NIH CSR study section, a chartered NCI Initial Review Group (IRG), or an NCI Special Emphasis Panel (SEP). The primary purpose of this initial review is to evaluate the scientific merit/impact of research grant and cooperative agreement applications. The second level of review, which is for program relevance, is conducted by the National Cancer Advisory Board (NCAB).

Most investigators are familiar with the NIH CSR study sections, which have the primary responsibility for managing the peer review of most investigator-initiated Research Project Grant (RPG, R01) and Fellowship (F) applications. However, dollars requested for grant applications reviewed by DEA-chartered IRGs and SEPs represent more than 50% of the NCI's total extramural budget. Peer review managed by either the CSR or the DEA is usually determined by the type of grant mechanism.

The NCI has no direct input into the selection of peer reviewers who serve on CSR study sections. In contrast, members on NCI IRGs and SEPs are selected by DEA review staff, with suggestions from NCI program staff. All chartered NCI IRG Subcommittee members are approved by the DEA Director, based on their knowledge in various disciplines and fields related to cancer. The NCI has four specialized IRG Subcommittees. Subcommittee A reviews Cancer Center Support Grant (CCSG) applications. Subcommittee F reviews Institutional Training and Education applications. Subcommittee I reviews Transition to Independence applications, and Subcommittee J reviews Career Development applications. (The membership of NCI-chartered subcommittees may be found in Appendix D and at https://deainfo.nci.nih.gov/advisory/irg/irg.htm.) IRG members are appointed for varying terms of service, which may be up to 6 years. DEA SEPs may be formed to review grant and cooperative agreement applications received in response to RFAs, PAs, PARs, other special applications, or R&D contract proposals received in response to RFPs. Members of each panel are selected, on a one-time as-needed basis, to review specific grant and cooperative agreement applications, or contract proposals. Additional information about NCI SEPs can be accessed at https://deainfo.nci.nih.gov/advisory/sep/sep.htm.

The peer review of grant applications and contract proposals generally occurs in the fall, winter, and spring, prior to the February, June, and September NCAB meetings, respectively.

Review Workload

In FY2019, the DEA organized, managed, and reviewed a total of 4,357 research grant and cooperative agreement applications (Table 6) and 530 contract proposals (Table 12) assigned to the NCI for funding with appropriated dollars of $2,077,822,625. The total number of grant applications, cooperative agreements, and contract proposals reviewed in FY2019 was **4,886** (Figure 2). In addition, the DEA conducted 14 Cancer Center site visits, 13 IRG Subcommittee review meetings, 149 SEPs to review grant applications and contract

proposals, and 51 other review-associated meetings, such as orientation teleconferences. Tables 7 and 12 provide a summary of the applications and proposals reviewed by NCI IRG Subcommittees and SEPs. More than 2,300 peer reviewers served on the NCI DEA-managed IRG Subcommittees, SEPs, and workgroups in FY2019. Members were selected on the basis of their demonstrated experience and expertise in relevant fields of biomedical research or their informed consumer perspectives.

Peer Review Functions

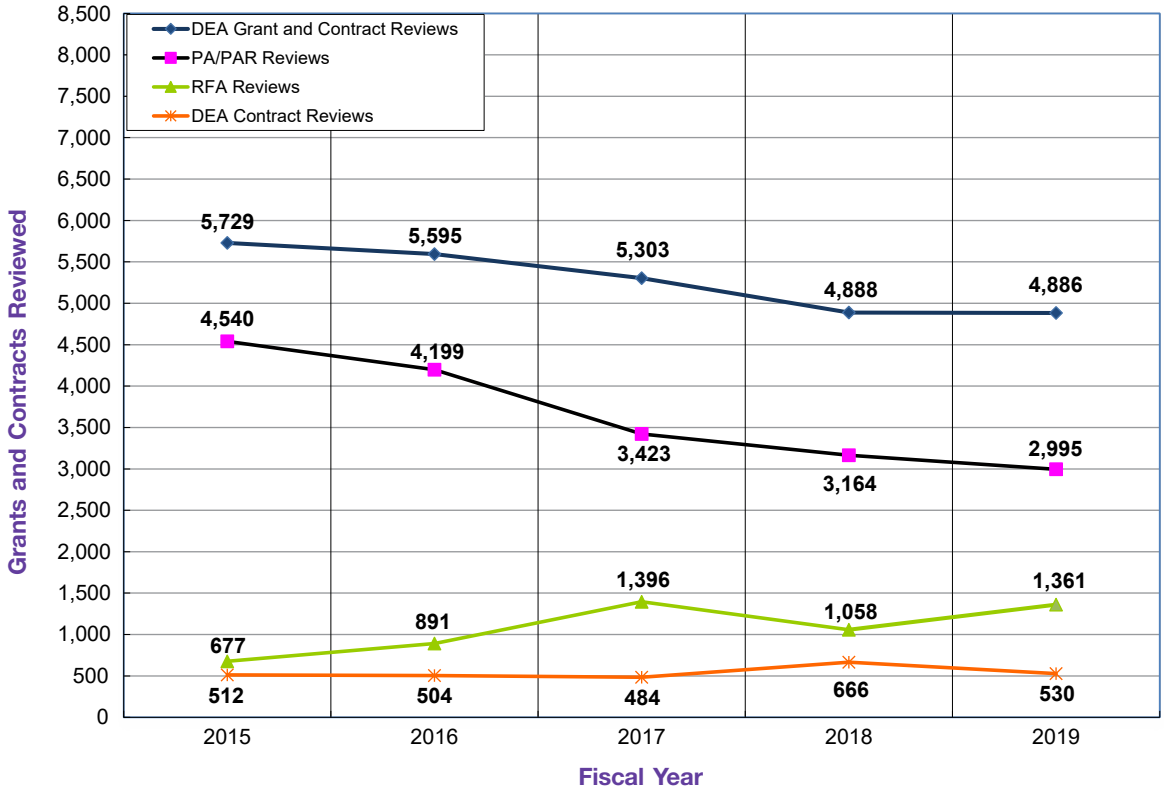
The Office of Referral, Review, and Program Coordination (ORRPC) is responsible for the coordination and management of the review of NCI grant applications, cooperative agreements, and contract proposals. The ORRPC is composed of four review branches, and the Program Coordination and Referral Branch. The individual review branches are responsible for organizing, managing, and reporting the results of scientific peer review of grants, cooperative applications, and R&D proposals for a wide variety of grant mechanisms and topics. Reviews of grant applications are conducted by either one of four NCI IRG Subcommittees or by specially convened SEPs, as shown in Table 7. Contract proposals and Small Business Innovation Research (SBIR) Special Topics, shown in Table 12, are reviewed by Technical Evaluation Panels (TEPs).

Research Programs Review Branch (RPRB)

Program Project (P01) Applications

A significant effort of RPRB during FY2019 was the review of unsolicited Program Project (P01) applications. These are multi-project, collaborative programs with a well-defined unifying cancer research theme. For the review of P01s, the applications are grouped based on their scientific focus and typically clustered into groups of up to 10

Figure 2. DEA Review Workload*
Grants and Contracts Reviewed in FY2015 – 2019



* Withdrawn applications not included.

applications in each group. The applications often represent a continuum of research from basic through translational to preclinical and clinical studies.

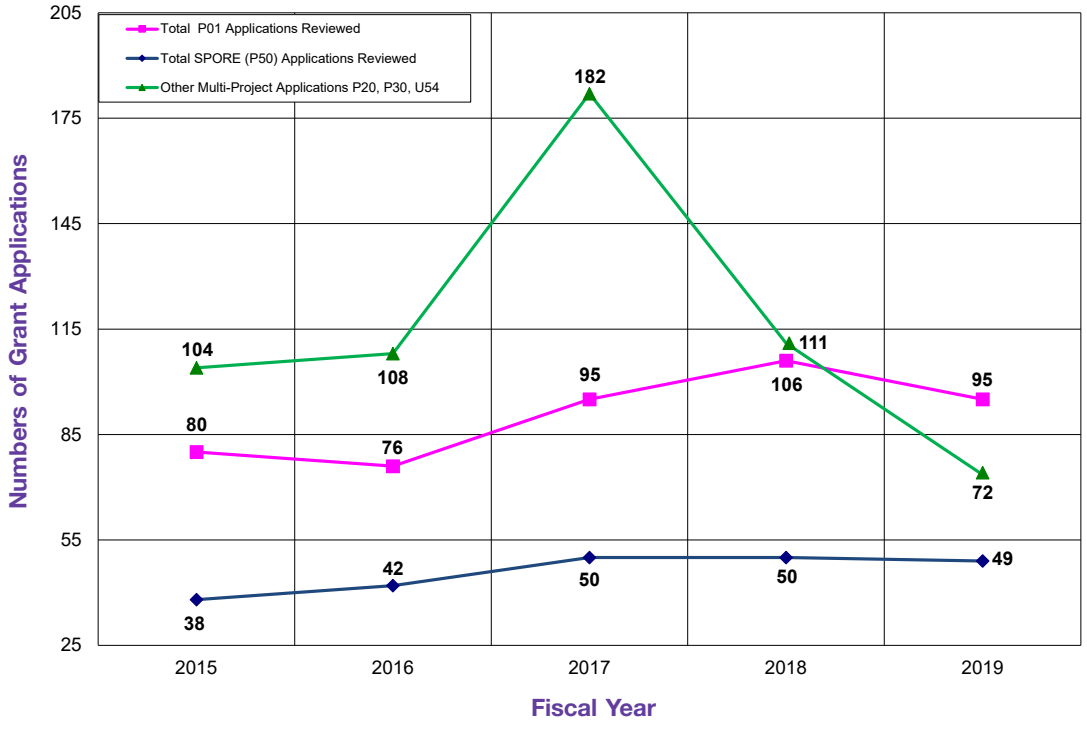
All P01 review panels are constituted as SEPs, with *ad hoc* reviewers recruited based on the required scientific expertise. The SEP review committees evaluate the potential impact of the individual projects and technical merit of the supporting core resources, determine the level of program integration and leadership, and assign an overall impact score to each application.

During FY2019, RPRB managed the review of 95 new, renewal (competing), resubmitted (amended), and revised (competitive supplement) P01 applications (Figure 3 and Table 8). Sixty-eight (72%) of the applications proposed new multidisciplinary research programs, 27 (28%) were competitive renewals, and 39 (41%) of the applications (both Type 1 and 2) were resubmitted applications (Table 8). Thirty-three (35%) of the 95 applications were referred to the NCI's Division of Cancer Biology (DCB), 43 applications (45%) were referred to the Division of Cancer Treatment and Diagnosis (DCTD), 14 applications (15%) were referred to the Division of Cancer Control and Population Sciences (DCCPS), and five applications (5%) were referred to the Division of Cancer Prevention (DCP) (see Table 9). The 95 applications requested $235,984,526 in total costs for the first year of support (see Tables 6 and 9) and $1,190,378,049 in total costs for 5 years.

Specialized Programs of Research Excellence (SPORE, P50)

Another major responsibility of RPRB is the review of NCI Specialized Programs of Research Excellence (SPORE) P50 applications. These complex, multi-project, multidisciplinary, translational applications focus on research that is directly applicable to human disease in specific organ sites or that focuses on a common biological mechanism critical for promoting tumorigenesis and/or cancer progression.

Figure 3. Program Project (P01), SPORE, and Other Multi-Project Research Applications Reviewed in FY2015 – 2019*



* Withdrawn applications not included.

All SPORE review panels are constituted as SEPs, with reviewers recruited based on the scientific expertise needed for the applications being reviewed. SEP review committees evaluate and assign scores to the individual components of the applications (projects, cores, and developmental programs), and then assign an overall impact score to the SPORE application as a whole.

In FY2019, the RPRB organized and managed eight SEPs for the review of 49 SPORE applications (Figure 3 and Table 11). The applications addressed multiple organ sites, with the following distribution and numbers of applications: Brain (7); Breast (3); Gastrointestinal (6); Pancreas (4); Head and Neck (2); Thyroid (1); Leukemia (3); Skin (6); Myeloma (2); Ovarian (1); Cervical (1); Prostate (4); Genitourinary (1); Sarcoma (1); and Lung (5). In addition to organ sites, two applications were focused on common biological mechanisms: Immunogenetics (1) and DNA Damage Repair (1). Overall, 27 (55%) of the 49 applications were submitted for new SPOREs, and 22 (45%) were competitive renewal applications, with 19 (39%) being resubmitted applications.

The disease sites addressed in the SPORE applications vary from round to round. For example, 11 applications addressing six different disease sites were reviewed for the October 2018 NCAB cycle; 16 applications addressing 11 disease sites were reviewed for the January 2019 NCAB cycle, and 22 applications addressing 16 disease sites were reviewed for the May 2019 NCAB meeting. The applications requested $115,548,579 in total costs for the first year of support (Table 11).

Additionally, for the August 2019 NCAB review cycle, RPRB coordinated the review of 26 P50 applications for programs in Implementation Science for Cancer Control and 19 U54 applications for the Immuno-Oncology Translational Network. These applications were in response to Beau Biden Cancer Moonshot Initiatives (Table 13).

Other RPRB Activities

Potential applicants for P01 and P50 grant submissions are strongly encouraged to participate in a pre-submission discussion with appropriate NCI Program and DEA Review staff members so that they can fully understand the guidelines, requirements, and goals of these complex applications. SROs from the RPRB routinely participate in these pre-submission conferences to assist the applicants in understanding the review process, the special review criteria, and the scoring paradigms for these applications. In FY2019, RPRB SROs attended 75 of these pre-submission meetings.

As needed, RPRB SROs also manage review of applications submitted to the DEA in response to other initiatives. In FY2019, this included coordinating SEP reviews of P20, R01, R03, R21, R25, R35, U01, UM1, UH2/UH3, and SI2/R00 applications, and review of Phase I and Phase II contract proposals.

Resources and Training Review Branch (RTRB)

The RTRB has primary responsibility for review of Cancer Center Support, Training and Education, and Career Development applications. RTRB is also responsible for the management of the four NCI IRG Subcommittees: A, F, I, and J (Appendix E).

Review of P30 Cancer Center Support Grant (CCSG) applications involves a two-tier initial peer review process. The first tier of the review involves a site visit to the applicant's institution by a non-FACA working group review panel. Site visit reviewers serve as a fact-finding body of experts to obtain updated information and/or clarification of any issues identified in the written application through an onsite face-to-face discussion with the Cancer Center investigators with focus on addressing CCSG-specific review criteria. The site visit committee prepares a site visit review report that is presented, along with the written CCSG application, to the NCI IRG Subcommittee A for discussion, evaluation, and final impact scoring of the application. Final impact scoring by Subcommittee A provides a more uniform evaluation of the individual CCSG applications than scoring based solely on the initial site visit review group. During FY2019, Subcommittee A reviewed 14 CCSG applications.

Training and Career Development

Career Development (CD*), and Training and Education (T&E*) grant applications are reviewed by IRG Subcommittees Institutional Training and Education (F), and Career Development (I and J). The number of Career Development applications increased to 587 in 2019 from 553 in 2018 (Table 6). The number of Training and Education grant applications increased from 143 in 2018 to 164 (Figure 4). In addition, 70 applications submitted in response to the NCI Predoctoral to Postdoctoral Fellow Transition Award (F99) were reviewed.

Other RTRB Activities

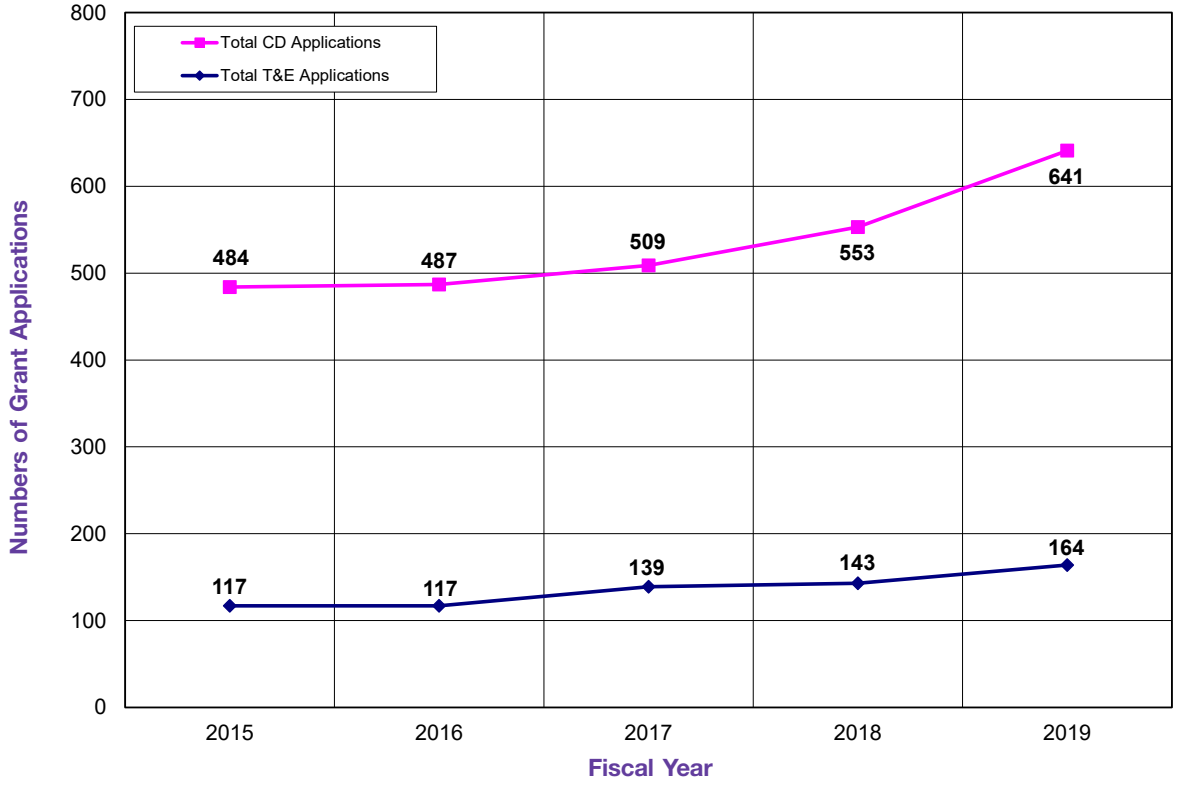
In FY2019, RTRB review staff also reviewed applications received in response to initiatives that were coordinated by the Special Review Branch (SRB), i.e., (1) NCI Provocative Questions Initiative (PQ); (2) Exploratory/Developmental Grant (R21); (3) Program Project (P01); (4) Research Project (R01); (5) Small Grant (R03); (6) Small Business Innovative Research Contracts (SBIR); (7) Research Projects – Cooperative Agreements (U01); (8) Specialized Center – Cooperative Agreements (U54); and (9) the NCI Community Oncology Research Program (NCORP) Community Sites (UG1).

Special Review Branch (SRB)

The SRB organizes and manages the peer review of applications submitted in response to NCI-issued RFAs, PAs, and PARs. Following approval of RFA concepts by the NCI Scientific Program Leaders (SPL) and the Board of Scientific Advisors (BSA), NCI Program staff prepares RFAs for publication in the *NIH Guide for Grants and Contracts*. (Table 10 summarizes the number of applications submitted for the RFAs, and Table 11 summarizes the number of applications submitted in response to PAs or PARs reviewed by the DEA).

During FY2019, the SRB, with the assistance of the three other DEA review branches (RPRB, RTCRB,

Figure 4. Numbers of Career Development (CD) and Training and Education (T&E) Applications Reviewed in FY2015 – 2019*



* CD activity codes: K01, K08, K22, and K99. T&E activity codes: K12, R25, and T32.

and RTRB), peer reviewed a total of 1,361 applications received in response to 50 RFAs (Table 10) and 2,995 applications in response to 65 PAs/PARs (Table 11). All the peer review meetings were conducted by 148 SEPs.

Moonshot Research Initiative

In December 2016, the U.S. Congress passed the 21st Century Cures Act, authorizing $1.8 billion in funding for the Cancer Moonshot over 7 years. Congress appropriated $300 million to the NCI for FY2017, $300 million for FY2018, and $400 million for FY2019. A Blue Ribbon Panel of experts was established as a working group of the NCAB to ensure that the Cancer Moonshot's approaches are grounded in the best science. The Panel's report outlines recommendations to accelerate progress against cancer. Initiatives established to address the goals of the recommendations are as follows:

- Establish a Network for Direct Patient Engagement
- Create an Adult Immunotherapy Network
- Create a Pediatric Immunotherapy Discovery and Development Network (PI-DDN)
- Develop Ways to Overcome Cancer's Resistance to Therapy
- Build a National Cancer Data Ecosystem
- Intensify Research on the Major Drivers of Childhood Cancers
- Minimize Cancer Treatment's Debilitating Side Effects
- Prevention and Early Detection of Hereditary Cancers
- Expand Use of Proven Cancer Prevention and Early Detection Strategies
- Analyze Patient Data and Biospecimens from Past Clinical Trials to Predict Future Patient Outcomes
- Generation of Human Tumor Atlases
- Develop New Cancer Technologies

In FY2019 the DEA reviewed a total of 232 applications submitted in response to 13 Moonshot Initiative RFAs (Table 10) and eight RFPs (Table 12). The activity codes included the following mechanisms: U01 (182 applications), UG3 (5 applications), U54 (19 applications), P50 (26 applications), and R43/44 (50 proposals).

Research Answers to NCI's Provocative Questions (PQ)

Following input from the scientific community through focus groups, forums, and online postings, grant applications were solicited to respond to one of the 12 scientific questions designed to solve specific problems and paradoxes in cancer research. Also, revision (supplement) applications were solicited to add provocative questions/relevant research to active research projects. A total of 299 R01 Research Project, 166 R21 Exploratory/Development, three P50, two P01, and nine R01 revision applications were submitted and reviewed in response to five RFAs (Table 10). These applications were peer reviewed in SEP meetings to assess the overall impact.

Exploratory/Developmental Research

In FY2019, the DEA reviewed 1,008 R21 applications submitted for the NCI Clinical and Translational Exploratory/Developmental Research Grant Program in response to PAR18-020 (Table 11). Applications were initially grouped based on their scientific focus; the groupings varied depending on the number of applications received and the science proposed. The applications represented a continuum of research from basic through translational to preclinical and clinical studies. The applications were reviewed in a total of 37 SEPs over the three review cycles in FY2019.

Small Grant Programs

The small grant (R03) PAR program initiative in the NCI Omnibus R03 for cancer research (PAR 18-021) stimulated increased interest in the applicants' community. In FY2019, 469 applications were submitted and reviewed by the DEA in response to this FOA (Table 11).

Other SRB Activities

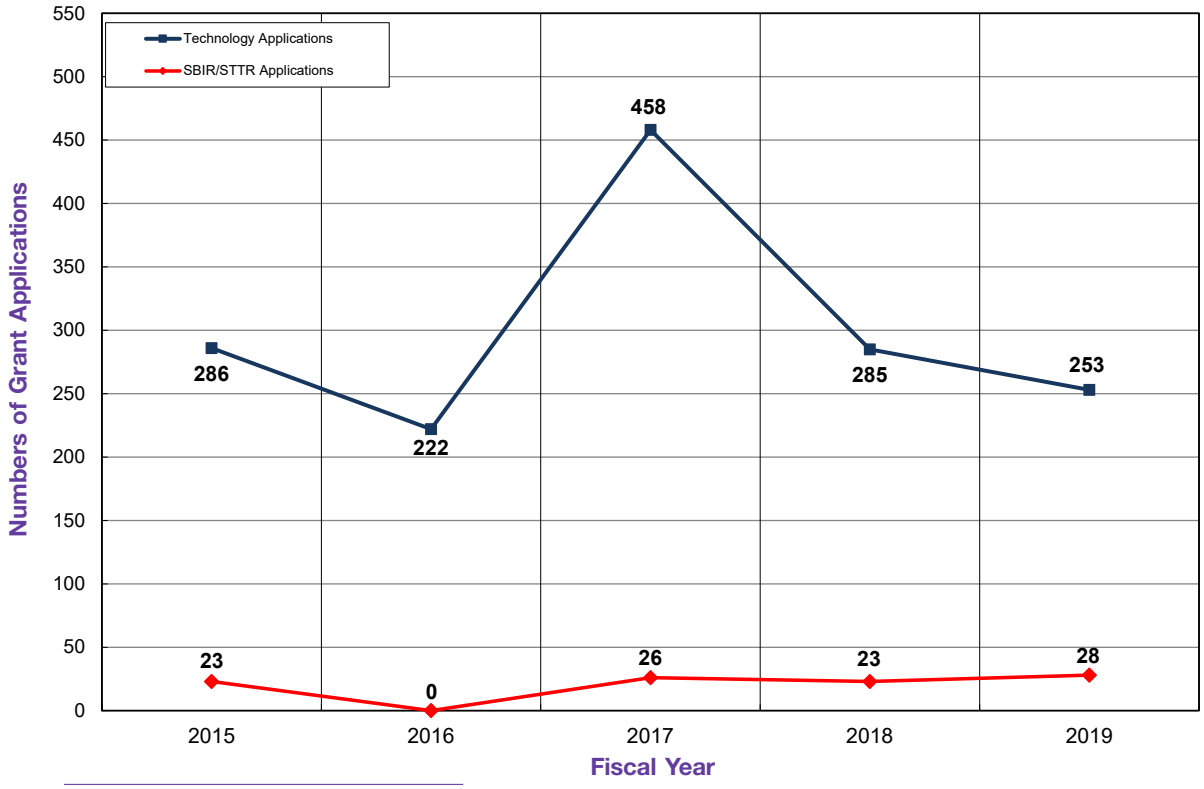
As needed, SRB SROs also manage review of applications submitted to the DEA in response to other initiatives. In FY2019, this included coordinating review of F99/K00, P01, P20, R03, R21, R50, U01, U24, U54, UG3, and UH2/UH3 applications.

Research Technology and Contracts Review Branch (RTCRB)

The RTCRB organizes and manages the peer review of technology-related SBIR/STTR grant applications, SBIR Special Topics contract proposals, and R&D contract proposals submitted in response to RFPs. In most instances, the majority of technology research initiatives use either the R21 Exploratory/Developmental or the R33 Exploratory/Developmental Phase II award mechanism. The R21 mechanism is intended to encourage exploratory/developmental research by providing support for exploratory pilot projects in the early stages of project development; whereas the R33 mechanism is suitable for projects for which "proof-of-principle" of the proposed technology or methodology already has been established and supportive preliminary data are available. These two mechanisms are well suited for technology development.

In 2019, 253 technology applications (Figure 5) for Exploratory/Developmental Phase I (R21) grants and Exploratory/Developmental Phase II (R33) grants were reviewed for: Innovative Molecular and Cellular Analysis Technologies for Basic and Clinical Cancer Research (RFA CA18-002 [R21]); Advanced Development and Validation of Emerging Molecular and Cellular Analysis Technologies for Basic and Clinical Cancer Research (RFA CA18-003 [R33]); Innovative Technologies for Cancer-Relevant Biospecimen Science (RFA CA18-004 [R21]); Advanced Development and Validation of Emerging Biospecimen Science Technologies for Basic and Clinical Cancer Research (RFA CA18-005 [R33]); Innovative Molecular and Cellular Analysis Technologies for Basic and Clinical Cancer Research (RFA CA19-019 [R21]); Advanced Development and Validation of Emerging Molecular and Cellular Analysis Technologies for Basic and Clinical Cancer Research (RFA CA19-020 [R33]); Innovative Biospecimen Science

Figure 5. Technology Initiatives Applications Reviewed in FY2015 – 2019*



* Withdrawn applications are not included.

Technologies for Basic and Clinical Cancer Research (RFA CA19-021 [R21]); and, Advanced Development and Validation of Emerging Biospecimen Science Technologies for Basic and Clinical Cancer Research (RFA CA19-022 [R33]) (Table 10).

Research and Development (R&D) Contract Proposals

In FY2019, the RTCRB received and reviewed 21 contract proposals in response to two RFPs (Table 12). During review, specific elements of each proposal are individually evaluated and scored, with the combined score indicating the overall merit. After negotiations, contract awards are made for the specific RFP solicitation. Phase II SBIR proposals are submitted to the Topics and are announced in a Broad Agency Agreement Announcement.

Other RTCRB Activities

In FY2019, members of the branch also assisted in the review of applications for initiatives that were coordinated by the SRB, including the NCI Provocative Questions Initiative, the NCI Omnibus Exploratory Grant (R21) program, and the Small Grant (R03) program. In FY2019, the RTCRB also managed reviews of P01, U01, U24, U54, UG3, and UH2/UH3 applications.

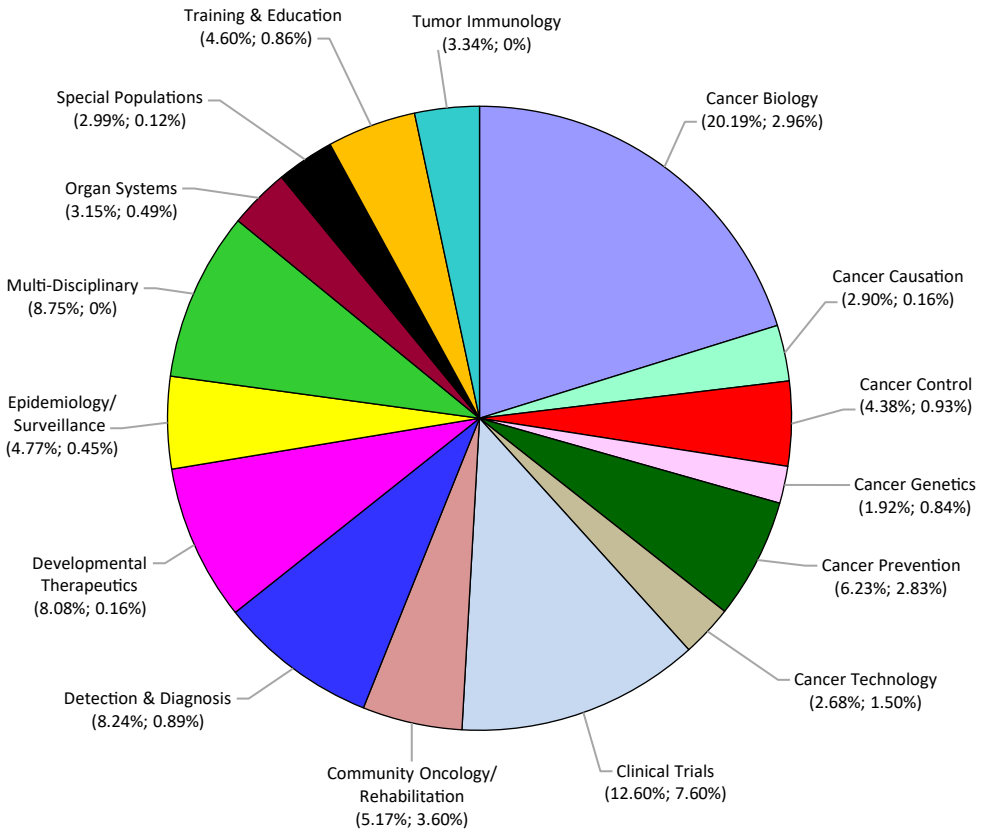
NCI Grant and RFA Funding

The Board of Scientific Advisors (BSA) is responsible for advising the NCI Director on the extramural program and the future direction and funding of each Division's, Office's, and Center's (DOCs) extramural research. As such, the BSA provides concept review for NCI-sponsored RFAs. Figures 6 and 7 show total NCI Grant and RFA funding according to scientific concept area in FY2018 and FY2019. Figure 8 shows RFA concepts that the BSA approved from FY2016 through FY2019 according to the sponsoring NCI Division, Office, or Center.

Table 13 presents a summary of total funding of NCI grant awards by mechanism for FY2019. In Table 14, a comparison is made of the average cost and number of NCI R01, P01, R03, R13, R21, P30, P50, U01/U19, U10, and U54 grants, and cooperative agreements awarded in FY2015 through FY2019, for each of the extramural Divisions, Offices, and Centers.

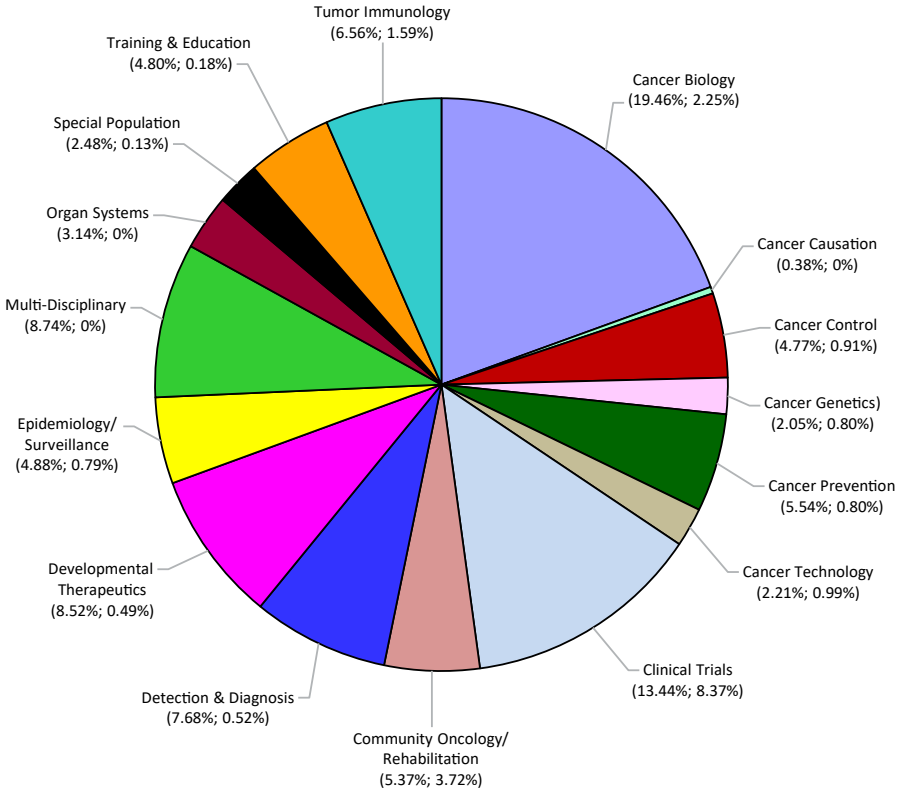
Trends in grant funding according to scientific discipline and organ site are provided in Tables 15 and 16. Table 17 reports NCI's funding of foreign research grants in FY2019, and Table 18 reports foreign components of U.S. domestic research grants in FY2019. Note: Some grant awards made during a fiscal year may have been for grant applications reviewed in a prior fiscal year.

Figure 6. NCI Grant and RFA/Cooperative Agreement Funding Percentages by Concept Area FY2018



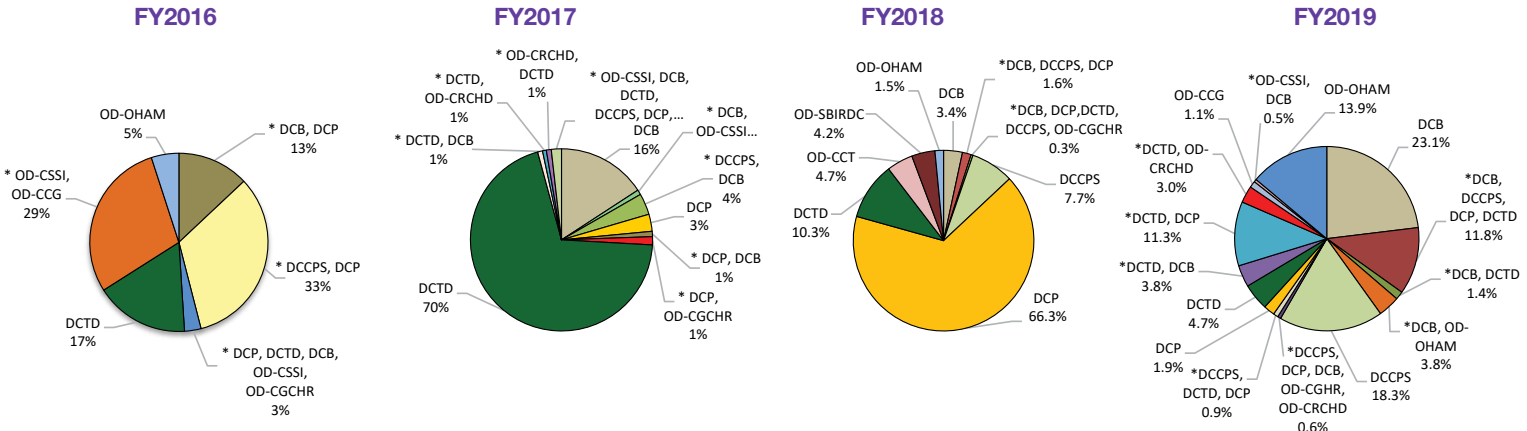
Percentages represent Total Funding and RFA Funding for the Concept Area as a percentage of Total NCI Grants. Concept Area (% of Total Funding to Total NCI Grants; % of RFA Funding to Total NCI Grants)

Figure 7. NCI Grant and RFA/Cooperative Agreement Funding Percentages by Concept Area FY2019



Percentages represent Total Funding and RFA Funding for the Concept Area as a percentage of Total NCI Grants.
Concept Area (% of Total Funding to Total NCI Grants; % of RFA Funding to Total NCI Grants)

Figure 8. BSA-Approved RFA/Cooperative Agreement Concept Set-Asides by Division/Office



Legend:

DCB	Division of Cancer Biology
DCCPS	Division of Cancer Control and Population Sciences
DCP	Division of Cancer Prevention
DCTD	Division of Cancer Treatment and Diagnosis
OD-CCG	Office of the Director - Center for Cancer Genomics
OD-CCT	Office of the Director - Center for Cancer Training
OD-CGCHR	Office of the Director - Center for Global Cancer Health Research
OD-CRCHD	Office of the Director - Center to Reduce Cancer Health Disparities
OD-OHAM	Office of the Director - Office of HIV and AIDS Malignancy
OD-CSSI	Office of the Director - Center for Strategic Scientific Initiatives
OD-SBIRDC	Office of the Director - Small Business Innovation Research Development Center

* Indicates co-funding among NCI Divisions/Offices.

Supporting Peer Review Consultants

Ensuring that highly qualified individuals are available for expert review of grant applications and contract proposals requires an efficient administrative support system. The DEA's Scientific Review and Evaluation Activities (SREA) unit, residing within the **NCI Committee Management Office** (CMO), supports the NCI peer review process by compensating consultants for their services on the NCI IRG subcommittees or SEPs and by reimbursing them for their travel and other expenses (see **Appendices D** and **E**). The SREA staff also approves and/or processes payments for other activities related to review, including hotel contracts, teleconferencing services, and contract-supported ticketing services.

The NCI SREA program is a multimillion-dollar program. The staff members of CMO continue to effectively oversee the successful reconciliation of peer review costs charged against the SREA account, identify erroneous charges, and keep an extensive tracking sheet on all costs related to approximately 187 peer review associated meetings to successfully manage the budget. The CMO is able to provide the DEA Director with a clear picture of funds spent against the SREA budget throughout the year to ensure enough funds are available to cover all NCI peer review activities.

During FY2019, 2,269 consultants were reimbursed honoraria and flat rate payment for serving at more than 187 peer review meetings (**Appendix E**). There were 3,368 instances of honoraria and flat rate payments to NCI peer review consultants. The SREA staff works diligently to ensure reviewers are reimbursed in a timely manner and, when appropriate, contacts those reviewers with an unpaid or returned reimbursements status. The SROs have expressed their gratitude to the members of the SREA team for tracking the reviewers' payments and, when necessary, assisting reviewers complete their Secure Payee Registration System (SPRS) registration. Due to these proactive efforts by the SREA staff, out of the 3,368 instances of honoraria and flat rate payments to NCI peer review consultants, all were paid out in FY2019.

Throughout the year, the SREA staff ensures the timely review and submission of hotel contracts for processing to secure lodging and meeting room space for face-to-face peer review meetings. In FY2019, 94 hotel contracts were processed by the SREA staff. The SREA is also responsible for ensuring all meeting logistic invoices i.e., hotels, World Travel Service (WTS), and teleconference services charges are accurate and valid before all invoices are processed for payment. All discrepancies are immediately addressed with the appropriate vendor and a revised invoice is requested. A total of 94 hotel invoices and 64 consultant travel invoices were reviewed and submitted for payment in FY2019.

The SREA staff collaborates with the Associate Director for Scientific Review and Policy, DEA; NCI DEA Branch Chiefs; CMO; and Scientific Review Officers on the development of NCI SREA policies and procedures. On an ongoing basis they monitor and evaluate current SREA activities and initiate changes and improvements when warranted.

In addition, CMO and SREA staff were presenters at an NCI DEA review staff Brown Bag session, where they discussed the Department of Health and Human Services Waiver Policy and peer review meeting reimbursements. The main points of discussion included the following:

- Policies and Components of a Reviewer's Reimbursement
- Secure Payee Registration System (SPRS)
- Peer Reviewer Travel Exception Requests
- Submission of Meeting Attendance Lists
- Scientific Review Officer Responsibilities in the following areas:
  - Federal Advisory Committee Act (FACA)
  - Meeting Requirements and Waiver Policies
  - SREA

SREA staff also coordinated an NCI DEA review staff Brown Bag presentation from World Travel Service (WTS) on several updates, including changes to airline policies, the WTS travel system, and the use of iBank to track reviewer travel.

All CMO and SREA documents related to peer review meeting activities are sent to PRESTO to be posted on the "NCI/DEA Peer Review Reference Guide for Staff Assistants" page on the PRESTO website. The documents are then used by NCI DEA SROs and SAs. These training tools are imperative to the peer review process and the integrity of the National Cancer Institute's mission.

DEA's Role in Advisory Activities

Beyond its central role in coordinating the referral of grants and peer review, perhaps the most far-reaching role that the DEA plays across the NCI is the coordination and administration of NCI's nine chartered Federal Advisory Committees. The memberships and activities of these advisory bodies are coordinated by the **Office of the Director**, DEA, and the **Committee Management Office**, DEA, in consultation with the **NCI Director**. A primary responsibility of the DEA is coordination of the activities of the **National Cancer Advisory Board (NCAB)**, whose members are appointed by the U.S. President and whose responsibilities include the second-level review of grant and cooperative agreement applications as well as advising the NCI Director on policy for the conduct of the National Cancer Program. The DEA also coordinates administration of the **Board of Scientific Advisors (BSA)**, the body responsible for the oversight and concept review of the extramural programs and initiatives of the NCI, and the **Frederick National Laboratory Advisory Committee (FNLAC)**, which provides oversight of research activities at the **Frederick National Laboratory for Cancer Research (FNLCR)**. Working groups, task forces, etc. are formed under the various chartered committees to address and make recommendations on important areas of cancer research related to basic science, clinical trials, diverse populations, cancer advocacy, treatment, cancer control, drug development, prevention, communication, education, etc. As such, the DEA plays a major role in the development and issuance of PAs, PARs, RFAs, and R&D RFPs, the major extramural program initiatives used by the NCI to fund extramural research. The DEA Director serves as an Executive Secretary to the NCAB and the BSA. (See Appendices A and B for highlights of the activities of these Boards in FY2019 and Appendix D for a list of current chartered committee members.)

Major NCI Advisory Bodies Administered by the DEA

National Cancer Advisory Board (NCAB). NCI's principal advisory body is the presidentially appointed NCAB. The NCAB advises the HHS Secretary and the NCI Director on issues related to the entire National Cancer Program and provides a second level of review of grant applications referred to the NCI and for the Food and Drug Administration (FDA) (Appendix A).

President's Cancer Panel (PCP). The PCP consists of three members appointed by the U.S. President, who by virtue of their training, experience, and backgrounds, are exceptionally qualified to appraise the National Cancer Program. At least two members of the Panel are distinguished scientists or physicians, and the third member is a nationally recognized cancer research patient advocate. The Panel monitors the development and execution of the activities of the National Cancer Program and reports directly to the U.S. President. Any delays or hindrances in the rapid execution of the Program are immediately brought to the attention of the President.

Board of Scientific Advisors (BSA). The BSA represents the scientific community's voice in NCI-supported extramural research. The BSA, composed of distinguished scientists from outside the NCI and representatives from the advocacy community, advises NCI leadership on the progress and future direction of the Institute's extramural research program. One important function of the BSA is to evaluate NCI extramural programs and policies and review concepts for new research opportunities and solicitations to ensure that those concepts are meritorious and consistent with the Institute's mission (Appendix B).

Boards of Scientific Counselors (BSCs) for Basic Sciences and for Clinical Sciences and Epidemiology. The two BSCs, managed through the Office of the Director (OD), NCI, advise NCI leadership on the progress and future direction of NCI's Intramural Research Program residing in the Center for Cancer Research (CCR) and Division of Cancer Epidemiology and Genetics (DCEG). These groups of scientific experts from outside the NCI evaluate the performance and productivity of NCI Intramural Principal Investigators and staff scientists through periodic site visits of the intramural laboratories and provide evaluation and advice on the course of research for each laboratory and branch.

Frederick National Laboratory Advisory Council (FNLAC). The FNLAC provides advice and makes

recommendations to the Director, NCI, and the Associate Director, NCI-Frederick, on the optimal use of the NCI-Frederick facility to rapidly meet the most urgent needs of the Institute. The NCI-Frederick Cancer Research Center (FCRC) in Frederick, Maryland, was established in 1972 as a government-owned, contractor-operated facility. In 1975, the facility was designated as a Federally Funded Research and Development Center (FFRDC) to provide a unique national resource for the development of new technologies and the translation of basic science discoveries into novel agents for the prevention, diagnosis, and treatment of cancer and AIDS. In 2012, the FCRC was renamed to the Frederick National Laboratory for Cancer Research (FNLCR). FNLAC reviews new projects proposed to be performed at FNLCR and advises the Director, NCI, and the Associate Director, NCI-Frederick, about the intrinsic merit of the projects and about whether they should be performed at the Frederick facility (Appendix C).

NCI Council of Research Advocates (NCRA). The NCRA, previously known as the Director's Consumer Liaison Group (DCLG), advises the NCI Director with respect to promoting research outcomes that are in the best interest of cancer patients. To this end, the NCRA conducts these activities with the intent to identify new approaches, promote innovation, recognize unforeseen risks or barriers, and identify unintended consequences that could result from NCI decisions or actions. Additionally, the NCRA provides insight into enhancing input, optimizing outreach, and promoting strong collaborations, all with respect to non-scientist stakeholders.

Clinical Trials and Translational Research Advisory Committee (CTAC). The CTAC advises and makes recommendations to the NCI Director, NCI Deputy Directors, and the NCI Division/Office/Center (DOC) Directors on the NCI-supported national clinical trials enterprise to build a strong scientific infrastructure by bringing together a broadly developed and engaged coalition of stakeholders involved in the clinical trials process. In addition, CTAC makes recommendations regarding the effectiveness of NCI's translational research management and administration program, including needs and opportunities across disease sites, patient populations, translational developmental pathways, and the range of molecular mechanisms responsible for cancer development. CTAC also advises on the appropriate magnitude for dedicated translational research priorities and recommends allocation of translational research operations across organizational units, programs, disease sites, populations, developmental pathways, and molecular mechanisms. These responsibilities encompass oversight of all clinical trials, both extramural and intramural. In addition, the Committee provides broad scientific and programmatic advice on the investment of taxpayer dollars in clinical trials and related science.

NCI Initial Review Groups (IRGs). The NCI IRGs, composed of four active subcommittees, review grant applications for Cancer Center Support (Subcommittee A), Institutional Training and Education (Subcommittee F), and Career Development (Subcommittees I and J) in the areas of cancer cause, prevention, diagnosis, treatment, and control. IRG members may be appointed as standing committee members with overlapping terms of up to 6 years, or as "temporary" *ad hoc* members. *Ad hoc* members have all of the rights and obligations of IRG committee membership, including the right to vote on recommendations in which the individual fully participated as a reviewer for a specific meeting. Consultants also may be invited to serve as special experts to provide information or advice. These individuals generally serve on site-visit groups or work groups providing critical information to the chartered advisory subcommittees responsible for initial peer review.

NCI Special Emphasis Panels (SEPs). The SEPs advise the NCI Director and the DEA Director regarding research grant and cooperative agreement applications and concept reviews relating to basic, preclinical and clinical sciences, and applied research and development programs of special relevance to the NCI. Membership on a SEP is fluid, with experts designated to serve "as needed" for individual review meetings rather than for fixed terms. The SEP individuals have all of the rights and obligations of IRG committee membership, including the right to vote on recommendations.

NCI Technical Evaluation Panels (TEPs). The TEPs advise the NCI Director and the DEA Director regarding contract proposals. The TEPs provide an orderly, impartial, timely, yet comprehensive and discriminating, technical evaluation of each prospective offeror's technical proposal.

Committee Management Activities

The **NCI Committee Management Office (CMO)** is critical to the continued success of all NCI Federal advisory committee activities, including Boards, Advisory Committees, subcommittees, working groups, blue ribbon panels and review panels, etc. The CMO is located in the Office of the Director, Division of Extramural Activities (DEA), National Cancer Institute (NCI). This office continues to provide expert advice on all rules, regulations, guidelines, policies, procedures, etc. governing the Federal Advisory Committee Act (FACA) to the Director, NCI; Deputy Directors, NCI; the Director, DEA, NCI; and other senior level Institute/Center/Client staff. The CMO is also an established Service Center for the management of other Institutes' Federal advisory committees. Currently, CMO serves as the Service Center for the NIH Council of Councils (CoC), located in the Division of Program Coordination, Planning, and Strategic Initiatives (DPCPSI), Office of the Director (OD), National Institutes of Health (NIH); the Advisory Committee to the Director, NIH (ACD) located in the OD, NIH; the Advisory Committee on Research on Women's Health (ACRWH) located in the Office of Research on Women's Health in DPCPSI, OD, NIH; the Novel and Exceptional Technology and Research Advisory Committee (NExTRAC; formerly the NIH Recombinant DNA Advisory Committee [RAC]), located in the Office of Science Policy, OD, NIH; and the National Institute on Alcohol Abuse and Alcoholism (NIAAA). NIAAA has seven Federal Advisory committees, which include an Advisory Council, a BSC, four IRG Subcommittees, and a SEP.

In all, CMO successfully manages 24 Federal advisory committees and numerous subcommittees and working groups. The Office is also responsible for providing logistical planning and support of the following each year: four NCAB meetings, three BSA meetings, and three FNLAC meetings, as well as numerous subcommittees and working groups. Meetings are held via videoconference, Webinar, teleconference, or face-to-face. The Office also provides logistical support for three NIAAA Council and ACRWH meetings each year. Another important responsibility of the CMO is the management of the Division's SREA Program, which includes reimbursement of thousands of peer review consultants, processing and payment of hotel contracts, teleconferences, and reconciliation of the SREA budget.

As a Service Center, the CMO continued to provide exceptional service to these Client-Institutes on the management of their Federal advisory committees. CMO effectively managed a comprehensive ethics program in support of CoC, ACD, ACRWH and NExTRAC. Ethics services include analysis and review of Special Government Employee OGE-450s and Foreign Activity Questionnaire and preparation of recusal lists and waivers of current members. Additionally, CMO prepares charter renewals, analyzes potential nominees, and prepares nomination slates, issuances of waivers for membership requirements, *Federal Register* notices, and annual and fiscal year reports for its Service Center Clients.

Highlights of CMO activities in FY2019 include the following:

- Participated in several activities related to the NIH Optimize Initiative in Committee Management (CM), including representation on the following subcommittees: NIH Service Centers, Ethics, Human Resources/Nomination Slates, and Workload Analysis.
- Participated in a pilot project initiated as part of the NIH Optimize Initiative in Ethics and Committee Management to have advisory committee/board members use the USA Jobs Onboarding System to submit their human resource appointment forms electronically versus completing paper forms.
- Provided guidance and resources to the CMO community on the implementation of advisory committee/board members' use of the NIH Enterprise Ethics System (NEES) to submit their OGE-450s electronically versus completing paper forms.

- Provided guidance to NCI staff on the creation of the NCI Clinical Trials and Translational Research Advisory Committee (CTAC) *ad hoc* Working Group on Glioblastoma and *ad hoc* Working Group on Radiation Oncology.
- Worked with the NCI DEA Director on the establishment of the BSA *ad hoc* Working Group on Prevention.
- Responded to requests from the NIH Office of Federal Advisory Committee Policy (OFACP) regarding Executive Orders, General Accounting Office (GAO) audits, Freedom of Information Act (FOIA) requests, and internal control reviews.
- Met with the Executive Secretary, NExTRAC, and coordinated with NIH OFACP staff to provide guidance and support during the transition of the NIH Recombinant DNA Advisory Committee (RAC) to the Novel and Exceptional Technology and Research Advisory Committee (NExTRAC) within the FACA rules and regulations.
- Provided guidance to NIH OD staff assigned to support COC Working Groups.
- Continued to provide oversight of the NCI DEA SREA multimillion-dollar program and successfully closed out the FY2019 budget.
- Oversaw travel authorizations and vouchering of more than 200 SGE travel instances, many of which are complex and require negotiating with the board member.
- Implemented the new Committee Management Module (CMM) in the IMPAC II database and provided feedback regularly on issues identified.
- Participated in the Phase II CMM process mapping and requirements gathering for the automation of nomination slates.

The following **training sessions** were given by CMO to various federal audiences over the course of the year:

- Brown Bag Presentation to DEA SRO and SA staff on policies and components of Peer Reviewer reimbursement; Secure Payee Registration System (SPRS); Peer Reviewer travel exceptions; the submission of meeting attendance lists; NCI DEA peer review reimbursements policies and procedures; and Department of Health and Human Services (HHS) waiver policies and procedures.
- Brown Bag Presentation to SRO and SA staff from World Travel Service (WTS) on several updates, including changes to airline policies, the WTS travel system, and the use of iBank to track reviewer travel.
- Working Group Overview and Training to newly assigned Designated Federal Officials (DFOs) of the BSA *ad hoc* Working Group on Prevention.
- Responded to requests from senior NCI and Client staff on various non-FACA meetings and working group concerns.

Portfolio Tracking and Analysis

DEA's **Research Analysis and Evaluation Branch** (RAEB) is the officially designated contact for scientific information on NCI-supported research. The Branch collects and maintains consistent budget-linked scientific information across all of NCI's scientific programs to analyze the Institute's research funding portfolio. The RAEB staff members assist in making budget projections and, as requested, disseminate scientific cancer information. The DEA conducts analyses to project future NCI research expenditures and to provide budget justifications to the U.S. Congress. The work of the RAEB allows the DEA to respond immediately to requests for information from NCI staff, the broader NIH community, and requesters nationally and worldwide regarding the NCI Funded Research Portfolio. The RAEB reviews both unfunded applications and funded extramural grants supported by the NCI to consistently link scientific categories to budget categories on all Institute programs. These capabilities are based on a sophisticated system of indexing in which research documentation staff members analyze grant applications to classify each project for its degree of relevance to Special Interest Category (SIC) and Organ Site Codes (SITE). SIC Codes are meant to describe in a consistent way the major scientific disciplines that are of stated or growing interest to the NIH, HHS, the U.S. Congress, and the public. A critical characteristic of these data is comparability from one fiscal year to the next.

Trends in funding from FY2015 through FY2019 for selected organ sites and SIC Codes are presented in Tables 15 and 16. In addition, RAEB staff members serve as DEA or NCI representatives on NCI or NIH-wide scientific reporting initiatives. These groups and committees deal with various aspects of NIH grants and contracts or tracking and reporting on areas of special interest to the NIH, NCI, and/or U.S. Congress.

Highlights in FY2019 include the following:

- FY2019 grant information provided to NCI Program Directors on various areas of scientific research, including Systems Biology, Circadian Rhythm, Microbiome, and NCI-funded and unfunded grant numbers.
- Participated in the International Cancer Research Partners (ICRP), a group of international cancer funding organizations. NCI projects and cancer grants funded by other NIH Institutes are indexed to a Common Scientific Outline (CSO). Such indexing provides consistent scientific research information for all participating international funding institutions.
- Coordinated with the NCI Office of Budget and Finance (OBF) to update and align budget reporting categories. Supplied FY2018 grant funding information on Down Syndrome and Artificial Intelligence.
- Chaired the NCI Accrual Working Group for reporting of NCI compliance with Congressional Inclusion reporting requirements.
- Served as NCI point of contact on the NIH Inclusion Operating Procedures Working Group.
- Served as DEA representative to the NCI Planning and Evaluation Special Interest Group (SIG).
- Provided information on an F32 Training grant awarded between 1975 and 1979.

Extramural Research by Foreign Research Institutions and Extramural NCI Research Grants with a Foreign Research Component

In FY2019, the NCI allocated $11.8 million to support 27 projects received from foreign research institutions. These foreign grants are listed by country, mechanism, disease area, and total funding support in Table 17. Canadian institutions received the most funding from the NCI, with 10 grants receiving $4.7 million. R01s were the most common mechanisms funded, with nine grants receiving $2.13 million. Disease areas receiving the most NCI funding to foreign institutions were Not Site Specific ($2.9 million), and Cervix ($2.5 million), followed by Colon ($1.9 million).

FY2019 Funding of Foreign Institutions

*(See **Table 17** for more information.)*

Country	Grants & Contracts	Funding $
Argentina	1	336,858
Australia	3	2,493,988
Canada	10	4,677,202
Eritrea	1	225,000
France	3	2,599,664
Germany	1	399,909
Korea, Rep. of	1	54,000
Netherlands	1	197,457
South Africa	1	77,740
Sweden	3	474,537
United Kingdom	2	313,740
TOTAL	**27**	**$11,850,095**

In FY2019, the NCI supported 238 U.S. domestic projects with 328 foreign components. These projects are listed in Table 18 by country, mechanism, and number of projects. Because many projects have multiple foreign contributors, the total count is greater than the total number of projects. Institutions in Canada (56 grants), Germany (25 grants), the United Kingdom (24 grants), China (21 grants), Australia (15 grants), and Netherlands (14 grants) were the NCI's most frequent collaborators. R01 is the most common funding mechanism used for collaborations with 187 grants, followed by U01 (45 cooperative agreements), and R21 (29 grants).

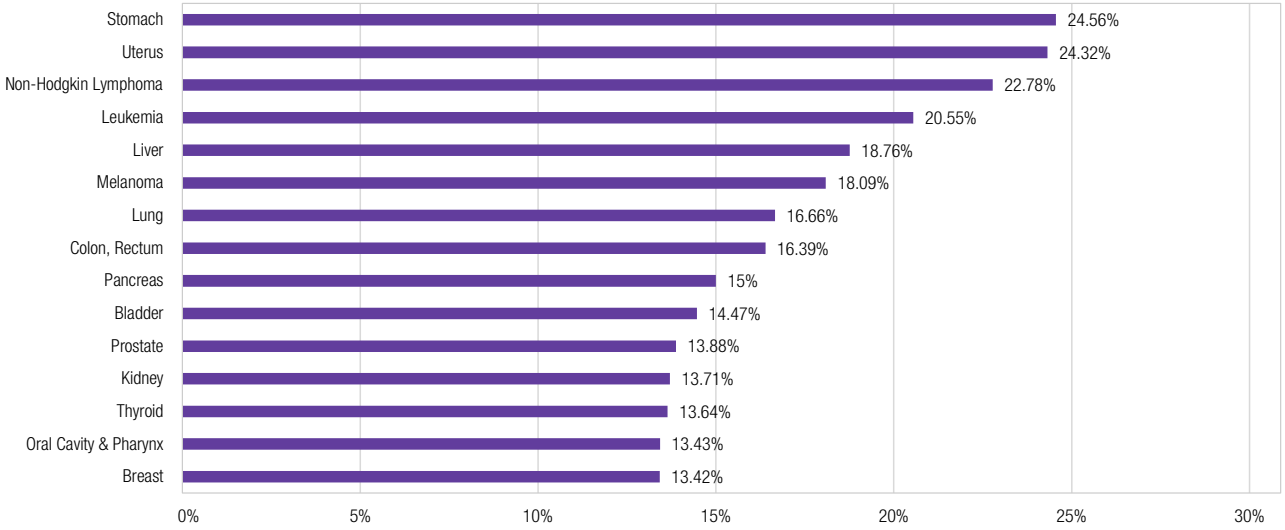
Success Rates of Extramural Science Categories

The RAEB assigns scientific indexing to both funded and unfunded applications, so it is possible to calculate success rates for funding in scientific categories. For example, the following graphs and tables illustrate FY2019 success rates for selected Special Interest Categories (SIC) and for the highest incidence cancers. The highest incidence cancer rankings are from the SEER rank of top 15 cancer sites, 2013–2017, age-adjusted incidence for all races and sexes.

Success rates were calculated by dividing the total number of newly and competing funded applications in 2019 for that research category (SIC or Organ Site) by the total number of applications reviewed for that research category (see Figures 9 and 10).

Figure 9. FY2019 Success Rates for Applications in High Incidence Cancer*

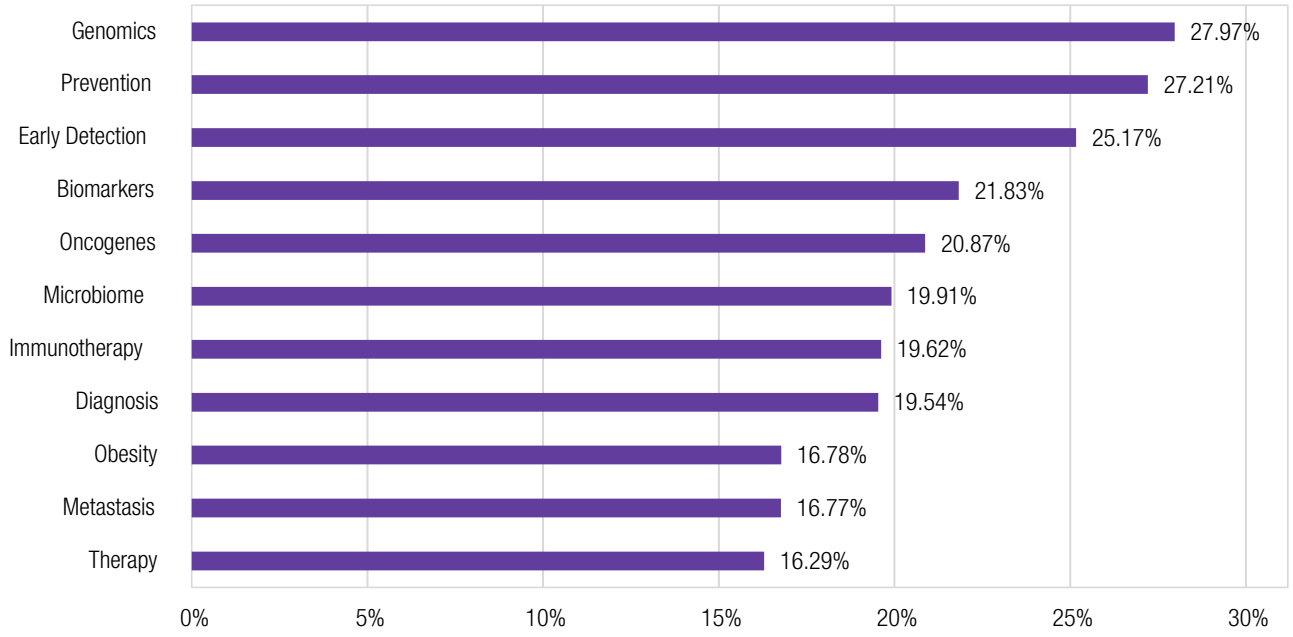
Sorted by Success Rate



Selected Oncology Sites	SEER Rank*	Types 1 & 2 Funded	Total Applications Received	2019 Success Rate (%)	Total Funding for Types 1 & 2
Stomach	15	14	57	24.56	$2,878,366
Uterus	10	18	74	24.32	$3,083,263
Non-Hodgkin Lymphoma	7	77	338	22.78	$26,771,004
Leukemia	11	156	759	20.55	$78,930,938
Liver	14	82	437	18.76	$28,382,539
Melanoma	5	123	680	18.09	$47,387,260
Lung	2	243	1,459	16.66	$97,039,146
Colon, Rectum	4	162	988	16.39	$52,207,901
Pancreas	12	123	820	15.00	$35,182,085
Bladder	6	22	152	14.47	$9,105,967
Prostate	3	143	1,030	13.88	$59,858,378
Kidney	8	24	175	13.71	$7,635,936
Thyroid	9	9	66	13.64	$2,470,398
Oral Cavity & Pharynx	13	14	81	13.43	$5,199,129
Breast	1	357	2,659	13.42	$123,553,298

* RAEB data using SEER rank of top 15 cancer sites, 2013–2017 age-adjusted incidence for all races and sexes.

Figure 10. FY2019 Success Rates for Applications in Selected Special Interest Categories (SIC)
Sorted by Success Rate



Special Interest Category (SIC)	Types 1 & 2 Funded in 2019	Total Applications Received	2019 Success Rate (%)	Total Funding for Types 1 & 2
Genomics	339	1,212	27.97	$143,032,915
Prevention	329	1,209	27.21	$208,547,944
Early Detection	147	584	25.17	$85,878,344
Biomarkers	413	1,892	21.83	$1,229,993,683
Oncogenes	253	1,212	20.87	$87,934,184
Microbiome	43	216	19.91	$11,183,949
Immunotherapy	359	1,829	19.62	$181,446,668
Diagnosis	468	2,394	19.54	$249,640,776
Obesity	47	280	16.78	$11,576,760
Metastasis	358	2,135	16.77	$116,792,245
Therapy	1,240	7,611	16.29	$736,038,937

Information Resources Management

The **Applied Information Systems Branch** (AISB) provides integrated computer support, information technology expertise, and information systems development for the DEA. The AISB maintains and monitors the DEA Internet and Intranet websites; designs, develops, and maintains Division-specific software applications; administers and maintains DEA infrastructure supporting two information systems; provides information technology service desk support; provides oversight of hardware and connectivity; coordinates National Board and Committee virtual meetings; and serves as a liaison with the NIH Center for Information Technology (CIT) and the NCI Center for Biomedical Informatics and Information Technology (CBIIT). Its mission is critical to the Division in communicating current information technology activities and new developments to all components of the NCI and NIH, as well as to external reviewer and applicant communities.

DEA's Information Technology and Information Systems contracts are managed by the AISB. The AISB has an IT service desk team to track staff requests, manage the Division's computer equipment inventory, and provide information systems, applications, and information technology-related training. The branch is integrated into the business operations of all aspects of the Division, supporting key activities with technological solutions and expertise. Specific projects utilizing the technologies and services provided by the AISB are described under the appropriate functions of the DEA throughout this report.

For FY2019, specific AISB accomplishments are highlighted below.

Systems Infrastructure and Service Support

- **Security Implementation, Auditing, and Reporting.** Maintained and augmented the real-time security configurations and upkeep of Division IT assets, from mobile and desktop to server and database; performed DEA Information System (DEAIS) and Fiscal Linked Analysis of Research Emphasis (FLARE) Assessment and Authorization activities and annual continuous monitoring exercises. Under new security guidance, the two systems are undergoing significant security activities and documentation updates.
- **Infrastructure and Operations.** Achieved greater than 98 percent systems availability; conducted a major upgrade to more than 50 percent of the hardware infrastructure; upgraded numerous key components such as hosting environments, databases, and systems utilities; coordinated with CBIIT on support of teleconferenced national board and committee meetings; initiated a coordinated project with NIH CIT to leverage federated access controls to use on externally facing servers.
- **Desktop and Mobile Support.** Provided service desk support for the DEA staff, resolved approximately 1,000 desktop support issues; performed a technology refresh and configuration for 45 percent of the DEA desktops and monitors; migrated Division staff to NCI Office email to the cloud for more secure, compliant, and accessible email archive service; upgraded IT asset accountability system to achieve greater than 98 percent accountability of Division technology assets; and continued migration of electronic document distribution to replace paper for advisory board and committee meetings. Initiated and refined mobile hardware maintenance systems to achieve much lower effort and cost and much higher readiness and reliability of critical reader equipment; continued to assume greater responsibility for desktop configuration and management through automated means, resulting in less equipment downtime and faster service response time. Coordinated with NCI CBIIT to conduct various technology pilot and early release projects.
- **Cloud migration.** Coordinated with NCI CBIIT to migrate various key office automa-

tion utilities and tools to enterprise cloud management. Provided key information to stakeholders and provided training to staff to ensure operational continuity through transition.

Application Development Projects

- Deployed an application to manage the inventory of the Division's office supplies. The application will centralize and automate request submission, fulfilment tracking, inventory management, and reporting; currently in pre-release testing. Trained staff in usage and initiated first refinement cycle for development.
- Managed and maintained the portfolio of more than 40 applications, utilities, and reporting tools through software development lifecycle practices to support the Division's activities and mission. Each of the portfolio items is reviewed for maintenance, enhancement, replacement, or end-of-life action.
- Overall, there were more than 100 updates to applications, reporting tools, and the supporting components. Numerous security, infrastructure, and host environment updates were made. Databases and application environments were upgraded and patched to maintain highest quality and security of information.

User Training

- Co-led or participated in DEA's Program and Review Extramural Staff Training Office (PRESTO).
- Trained lead users on Inventory and Peer Review Roster applications.
- Trained users on various office automation software and collaboration tools.

DEA Website Development and Maintenance

- Curated internal and public-facing Web pages.
- Initiated a planning phase to migrate Web support from existing architecture to contemporary technology.

Development and Support of Software Applications for the Research Analysis and Evaluation Branch (RAEB) - Scientific Coding and Analysis

- Updated systems interconnections in support of eRA's cloud migration.
- Collaborated with the Office of Budget and Finance to streamline the processing of contracts data.
- Redesigned system components to improve data quality.
- Implemented a user management module to improve system security.
- Identified and corrected inconsistent coding rules.
- Redesigned the process for indexing Cancer Center Support Grants (P30s).

AISB Staff Involvement

AISB staff represented the needs and concerns of DEA staff through active participation in the following groups: NCI Research Funding Ecosystem Initiative, Weekly GAO Audit Prep Team, CBIIT Next Gen Hosting Task Force, Software Licensing Management Workgroup, Office 365 Email to the Cloud group, Service Now SIG, NCI Informatics and IT Advisory Group (IITAG), NIH eRA Technical Users Group (eTUG).

Organizational Structure of the Division of Extramural Activities

Office of the Director (OD)

- Directs and administers the operations of the Division, including those activities relating to grant review, contract review, referral and program coordination of FOAs.
- Directly coordinates and manages the NCAB, BSA, and FNLAC activities.
- Coordinates coding of NCI's grant portfolio.
- Initiates, coordinates, and implements Institute policies and procedures relating to grants and contracts reviews.
- Oversees the NCI's Committee Management Office.
- Coordinates, develops, and implements extramural policy.
- Implements NCI policies regarding extramural research integrity and serves as the NCI Research Integrity Office.
- Advises the Scientific Program Leadership (SPL) Committee, NCI, on extramural guidelines, review, advisory activities, and implementation strategies.
- Coordinates NCI extramural staff training requirements with the NIH.
- Represents the NCI on the NIH-wide Extramural Program Management Committee (EPMC), with responsibility for development of extramural policy and procedures across all NIH Institutes and Centers.
- Oversees inclusion of genders, minorities, and children.
- Serves as the NCI Research Integrity Office.
- Coordinates, develops, and implements extramural policy.

Paulette Gray, Ph.D. ..... Director
Vacant **..... Deputy Director**
Wlodek Lopaczynski, M.D., Ph.D. ..... Assistant Director
Ricardo Rawle ..... Special Assistant to the Director
Thu Nguyen ..... Program Analyst
Deneen Mattocks ..... Program Specialist
Peter Wirth, Ph.D. ..... Contractor

DEA Processing and Distribution Unit (DPDU)

- Provides services to DEA staff, including the coordination, consolidation, purchasing of supplies, tracking of expenditures, and preparation of meeting folders, Board books, orientation documents, and annual reports.
- Maintains DEA facilities.

Ricardo Rawle ..... Lead Program Analyst
Clara Murphy ..... Program Specialist
Adrian Bishop ..... Program Specialist
Robert Kruth ..... Program Assistant

Committee Management Office (CMO), OD

- Coordinates functionally related Federal advisory committee activities across the Institute and its client-Institutes. The office manages NCI advisory committees, and serves as an NIH Service Center for the NIH Council of Councils (CoC), Advisory Committee to the Director, NIH (ACD), Advisory Committee on Research on Women's Health (ACRWH), Recombinant DNA Advisory Committee (RAC), and to seven National Institute on Alcohol Abuse and Alcoholism (NIAAA) advisory committees to ensure that appropriate policies and procedures are in place to conduct the designated mission of each committee.
- Acts as a Service Center to provide advisory committee policy and management services to the Division of Program Coordination, Planning, and Strategic Initiatives; Office of Research on Women's Health; Office of Science Policy; Office of the Director, National Institutes of Health; and NIAAA.
- Provides policy guidance to the NCI and client-Institute staff on administrative and technical aspects of Federal Advisory Committees; coordinates activities with all other NCI Advisory Committees; implements policies and procedures designed to avoid conflicts in the nomination, selection, and recruitment of board members; develops CM Module business rules; implements CM Module guidelines and procedures to ensure that all committee-related data are correctly entered into the database for preparation and submission of required annual reports to the President of the United States, GSA, HHS, and NIH; provides logistical support for the NCAB, FNLAC, and BSA meetings, subcommittees, and work groups; and facilitates NCAB, FNLAC, and BSA committee-related travel.
- Researches and evaluates financial interests, covered relationships, and foreign activities issues for client-Institutes, and provides advice on resolutions affecting advisory committee members serving as special government employees.
- Provides administrative support for the peer review system by compensating consultants for their services on NCI IRG subcommittees and SEPs, reimbursing consultants for travel and other expenses, and approving and processing payments for other activities related to review such as hotel contracts and teleconferencing.

Joy Wiszneauckas.....**Committee Management Officer**
Andrea Collins* .....**Acting Deputy Committee Management Officer**
Kimberley Hetkowski†.....**Deputy Committee Management Officer**
Etsegenet Abebe.....**Committee Management Specialist**
Alonda Lord .....**Committee Management Specialist**
Rosalind Niamke .....**Committee Management Specialist**
Kenny Nock‡ .....**Committee Management Specialist**
Sondra Sheriff .....**Senior Committee Management Specialist**
Christine Skeens .....**Program Analyst**
Cameron Stansbury§ .....**Staff Assistant**
Margaret Vardanian .....**Committee Management Assistant**

* Left in February 2019.
† Joined in September 2019.
‡ Left April 2019.
§ Joined in August 2019.

Program and Review Extramural Staff Training Office (PRESTO)

- Develops and implements both broad-based and focused curricula for NCI Program and Review staff.
- Coordinates training for other extramural staff upon request.
- Identifies and develops resources (electronic and human) to facilitate learning and optimal individual, group, and organizational performance.
- Collaborates with NCI Divisions, Offices, Centers, and groups, both internal and external to the NCI, to provide customized job-related training and career development opportunities.
- Tracks participation of extramural staff in NIH- and NCI-sponsored training activities.

Michael Small, Ph.D. ..... Associate Director
Scot Chen, Ph.D. ..... Health Scientist Administrator
Ivan Ding, M.D. ..... Health Scientist Administrator
Denise Santeufemio ..... Program Analyst
Janet Craigie ..... Program Analyst
Sheila Hester ..... Program Analyst
Lauren McLaughlin ..... Program Staff Assistant

Office of Referral, Review, and Program Coordination (ORRPC)

- Coordinates program concept development, publication functions, and receipt, referral, and assignment of all NCI applications.
- Coordinates review activities of the RTRB, RPRB, SRB, RTCRB, and PCRB.

Shamala Srinivas, Ph.D. ..... Associate Director
Linda Brown ..... Secretary
Kathy Tiong ..... Program Analyst

Special Review Branch (SRB)

- Plans, manages, and assists in the scientific and technical review of grant and cooperative agreement applications received in response to RFAs, PAs, and PARs.
- Identifies and recommends appropriate review committee members as required for the review of assigned applications.
- Provides SROs and other support staff to manage technical review committees.
- Serves as the information and coordination center for all grant applications and cooperative agreements pending review by the Branch.
- Provides input and advice on grant review policy and procedures, application patterns, research trends, and other related information, as required.

David Ransom, Ph.D. ..... Chief
Eun Ah Cho, Ph.D. ..... Scientific Review Officer
Robert Coyne, Ph.D. ..... Scientific Review Officer
Hasan Siddiqui, Ph.D. ..... Scientific Review Officer
Sage Kim, Ph.D. ..... Scientific Review Officer
Ombretta Salvucci, Ph.D. ..... Scientific Review Officer
Cliff Schweinfest, Ph.D. ..... Scientific Review Officer
Jennifer Schiltz, Ph.D. ..... Scientific Review Officer
Zhiqiang Zou, Ph.D. ..... Scientific Review Officer
Imela Gradington-Jones ..... Program Specialist
Micah Traurig ..... Staff Assistant

Research Technology and Contracts Review Branch (RTCRB)

- Plans, manages, and assists in the scientific and technical merit review of grant and cooperative agreement applications received in response to RFAs and PARs and contract proposals received in response to RFPs.
- Identifies and recommends appropriate review committee members as required for the review of assigned applications and proposals.
- Provides SROs and other support staff for technical review committees.
- Serves as the information and coordination center for all technology-related grant applications and contract proposals pending review by the Branch.
- Provides input and advice on grant and contract review policy and procedures, application and proposal patterns, and research trends and other related information, as required.

Shakeel Ahmad, Ph.D. .....Chief
Eduardo Chufan, Ph.D. .....Scientific Review Officer
Jeffrey DeClue, Ph.D. .....Scientific Review Officer
Jun Fang, Ph.D. .....Scientific Review Officer
Reed Graves, Ph.D. .....Scientific Review Officer
Nadeem Khan, Ph.D. .....Scientific Review Officer
Paul Gallourakis .....Program Analyst
Hanh "Julie" Hoang .....Program Specialist
Kimberly Milner .....Staff Assistant

Program Coordination and Referral Branch (PCRB)

- Serves as the information and coordination point within the NCI for the development, clearance, publication, and tracking of all NCI extramural program (funding) initiatives, which include all RFAs, PAs, and Notices submitted for publication in the NIH Guide for Grants and Contracts, and also for posting and availability on Grants.gov, which is a federal-wide online portal for electronic submission of grant applications.
- Refers all NCI-assigned applications to the appropriate cancer activity area(s) according to the NCI Internal Referral Guidelines that define the program interests of each of the 54 cancer activity areas (which typically represent program branches in the NCI extramural divisions).
- Serves as the primary point of contact and provides assistance at the NCI for applicants who want to apply for Program Project (P01), conference grant (R13), Academic Research Enhancement Award (R15), and most large-budget grant applications.
- Serves as the NCI contact point and liaison to involved parties at the NIH for approval of the use of cooperative agreement mechanisms and for conversion of grants to cooperative agreements.
- Serves as the primary NCI information and referral point for the extramural scientific community on a broad range of subjects, including grant guidelines, application information, new initiatives announced as RFAs or PAs, and the review process.

Christopher L. Hatch, Ph.D. ..... Chief
David Contois ..... Referral Officer, NCI/NIH Referral Liaison
Anandarup Gupta, Ph.D. ..... RFA/PA Coordinator, Scientific Review Officer
Leota Hall..... Referral Officer, NCI/NIH Referral Liaison
Bratin Saha, Ph.D.* ..... Referral Officer, Scientific Review Officer
Jan Woynarowski, Ph.D. ..... RFA/PA Coordinator, Scientific Review Officer
Natacha P. Lassègue..... Program Analyst
Quynh Tram Chiaramonte ..... Staff Assistant

* Left in December 2018.

Research Programs Review Branch (RPRB)

- Plans, coordinates, and manages the scientific review of program project grants, specialized centers, and other grant mechanisms, as necessary, by Special Emphasis Panels.
- Identifies and recommends appropriate review committee members for the review of assigned applications.
- Provides input and advice on grant review policy and procedures, application patterns, research trends, and other related information, as required.
- Coordinates grant review activities with staff of other NCI Divisions/Offices/Centers and other DEA Branches.

Caron A. Lyman, Ph.D. ..... Chief
Robert Bird, Ph.D.* ..... Special Assistant
Sanita Bharti, Ph.D.† ..... Scientific Review Officer
Paul Cairns, Ph.D.‡ ..... Scientific Review Officer
Majed Hamawy, Ph.D., M.B.A. ..... Scientific Review Officer
Klaus Piontek, Ph.D. ..... Scientific Review Officer
Anita Tandle, Ph.D. ..... Scientific Review Officer
Mukesh Kumar, Ph.D. ..... Scientific Review Officer
Charles Choi ..... Program Analyst
Stefanie Powell ..... Staff Assistant
Cameron Stansbury§ ..... Staff Assistant

* Left in June 2019.
† Left in July 2019.
‡ Joined in July 2019.
§ Moved to the CMO in August 2019.

Resources and Training Review Branch (RTRB)

- Plans, coordinates, and manages the scientific merit review of cancer center, training, education, and career development grant and cooperative agreement applications by chartered IRG committees and Special Emphasis Panels.
- Arranges for and participates in onsite assessments (site visits) of the research capabilities and facilities of selected applicants (i.e., Cancer Centers).
- Identifies and recommends appropriate review committee members and site visitors, as required, for the review of assigned applications.
- Provides input and advice on grant review policy and procedures, application patterns, and research trends and other related information, as required.
- Coordinates grant review activities with staff of other NCI Divisions/Offices/Centers, other DEA Branches, and the NIH Center for Scientific Review.

Caterina Bianco Ph.D. ..... Chief
Shari Campbell, D.P.M., M.S.H.S. ..... Scientific Review Officer
Tushar Deb, Ph.D. ..... Scientific Review Officer
Byeong-Chel Lee, Ph.D. ..... Scientific Review Officer
Timothy Meeker, M.D. ..... Scientific Review Officer
Adriana Stoica, Ph.D. ..... Scientific Review Officer
Delia Tang, M.D. ..... Scientific Review Officer
Donnell Wilson ..... Program Analyst
Linda Edwards ..... Staff Assistant
Leslie Kinney* ..... Staff Assistant
Bridgette Wilson ..... Staff Assistant

* Left in February 2019.

Office of Extramural Applications

- Evaluates, plans, and acquires necessary Information Technology (IT) solutions for all business activities of the Division. Manages and monitors IT contracts within the Division.
- Coordinates and collaborates with the NIH Center for Information Technology (CIT), the NCI Center for Biomedical Informatics and Information Technology (CBIIT), and other entities for various IT-related activities.
- Collaborates with the DEA Office of the Director (OD) and the Committee Management Office (CMO on various activities related to the NCI Advisory Boards.
- Coordinates activities of the Applied Information Systems Branch (AISB) to evaluate new technologies, desktop and mobile support, user training, server administration; and system application design, development, and maintenance. Also, to conduct necessary audit, planning, and risk assessment to meet the requirements set by the Standards for Security Categorization of Federal and Information Systems.
- Coordinates activities of the Research Analysis and Evaluation Brach (RAEB) to provide budget-linked research portfolio data from NCI grants, cooperative agreements, and contracts for the NCI Office of Budget and Finance (OBF) and other entities. Also, to coordinate the information management of extramural NCI-supported research.

Amir Sahar-Khiz, Ph.D., M.B.A., PMP ..... Associate Director
Justin Rhoderick ..... Program Analyst

Research Analysis and Evaluation Branch (RAEB)

- Serves as the Institute's officially designated, centralized source of scientific information and science-based budget information on NCI-supported research.
- Analyzes and classifies the science content of all Institute-supported research projects.
- Analyzes the distribution of funds among research areas; these analyses serve as a basis for budget projections.
- Reports and answers inquiries on the scientific and budgetary aspects of Institute-funded research, including research grants, center grants, training grants, and research contracts.
- Maintains liaisons with other organizations involved in related classification activities.
- Documents the need for proposed RFAs by comparing RFA concepts with existing NCI-supported research and with unsolicited applications.

Marilyn Gaston ..... Chief
Edward Kyle..... Deputy Chief

Research Documentation

- Analyzes and indexes grants and contracts for the Branch's computerized systems.
- Analyzes extramural projects for relevance to Special Interest Categories (SICs) and Anatomic Sites to determine the officially reported figures for Institute support and provide a basis for budget projections.
- Maintains liaison with other offices within the Institute to ensure consistent reporting of data.
- Monitors the results of NCI's grant-supported research.
- Assists other NCI organizations by indexing NCI research projects for attributes other than SICs and Sites, for example, Common Scientific Outline (CSO) Codes and AIDS Categories.

Edward Kyle..... Lead Biologist/Team Leader
Beth Buschling ..... Biologist
Me Hei, M.D. ..... Health Specialist
Bernard Whitfield, M.S. ..... Biologist
Tyrone Wilson ..... Biologist
Clarissa Douglas ..... Contractor

Technical Operations, Inquiry, and Reporting

- Provides specialized data querying, archiving, and reporting functions for the Division and the Institute.
- Coordinates Institute data reporting with the NCI Office of Budget and Financial Management, NIH Population Tracking and Inclusion Committee, and others.
- Answers inquiries from the U.S. Congress, the public, the press, and others concerning any phase of Institute-supported work.
- Conducts in-depth analyses of extramural research data, including trends analyses.
- Identifies emerging priority areas for data collection and analysis.
- Ensures that terms and categories for indexing are updated and reflect current trends in cancer research and maintains a thesaurus of term definitions.
- Manages RAEB's FLARE (Fiscal Linked Analysis Research Emphasis) grants documentation and indexing database, ensuring reliability and completeness of its contents.
- Maintains and updates archival document files.
- Works with contractors and the AISB to refine RAEB's computer applications to meet the Branch's needs and resolve FLARE computer application problems for the Branch.
- Represents the DEA as its communications coordinator on the Office of Communications and Education Steering Committee.

Marilyn Gaston ..... Lead Biologist/Team Leader
William Clark, M.S. ..... Biologist
Rajasri Roy, Ph.D.* ..... Epidemiologist

* Left in April 2019.

Applied Information Systems Branch (AISB)

- Fulfills the information technology (IT) requirements of the Division by coordinating information resources management (IRM) activities with other relevant NCI and NIH units, and by providing high-quality information analysis, design, development, and coordination of applications in support of the Division's business processes.
- Coordinates, conducts, and maintains the development and deployment of specialized software and database systems for the Division for the conduct of review, referral, coding, advisory, and other extramural-related operations.
- Serves as the liaison with: the NCI Center for Biomedical Informatics and Information Technology (CBIIT) staff; NCI computer professionals; NCI units charged with execution of extramural IRM functions; trans-NIH functional units such as the CSR, Office of Policy for Extramural Research Administration (OPERA), and Office of Extramural Research (OER); and the IMPAC II and NIH eRA (electronic Research Administration) staff and systems.
- Supports connectivity, design, maintenance of the DEA Internet and Intranet websites and applications.
- Administers and monitors IT support contracts to provide design, development, and maintenance for Division information systems.
- Formulates and establishes the DEA-specific office automation policy.
- Provides desktop support and technology refresh for the Division and conducts training for the DEA IT applications.
- Coordinates general user support and training with NCI and NIH services. Co-leads or participates in Program and Review Extramural Staff Training Office (PRESTO) training sessions.
- Provides Division-specific video teleconferencing, audiovisual services, and application support for review and National Board and Committee activities.
- Conducts security assessment and authorization implementation for the Division's information systems.

Todd Hardin ..... Chief

Application Development Team

- Analyzes and coordinates life-cycle software development for the Division.
- Develops, designs, and maintains applications to support the Division's business processes.
- Develops, administers, and monitors contracts for acquisition, support, and maintenance of the Division's information systems.
- Formulates system development policy and oversees eRA/IMPAC II operations for the Division.
- Coordinates internal user groups and training for specific DEA applications.

Todd Hardin ..... Team Leader
Teresa Park..... Information Technology Specialist
Vivien Yeh ..... Information Technology Specialist

Information Management Team

- Designs and maintains the Division's Intranet and Internet websites, ensures compliance with relevant federal Web standards, policies, and guidelines.
- Works with DEA staff to ensure accurate and latest information postings and linkages across the DEA websites.
- Coordinates application development and supports the RAEB in the areas of scientific coding and analysis.
- Establishes partnerships and ongoing communications with staff and external customers to foster openness and collaboration in accomplishing the information initiatives of the Division.

Joshua Rhoderick ..... Team Leader
Michael Hu* ..... Information Technology Specialist
Lorrie Smith ..... Information Technology Specialist

* Left in June 2019.

Operations Team

- Administers and maintains the Division's server infrastructure in support of DEA applications, databases, and websites.
- Conducts configuration management in accordance with Federal cybersecurity policies and regulations.
- Coordinates network connectivity for the Division with NCI-CBIIT.
- Researches and recommends IT-related equipment, service, and support for the Division.
- Provides end-to-end technical service and IT service desk support for desktop and laptop computers, mobility solutions, office automation products, and licensed software applications.
- Acquires and administers the Division's information technology assets—computer hardware, software, IT maintenance contracts and supplies.
- Maintains and is accountable for IT equipment inventory for the Division.
- Implements and maintains federal policies for the use of office automation technology.
- Supports National Board meeting technological needs.

Richard Florence ..... Team Leader
Roderick James ..... Information Technology Specialist
Raymond Vidal ..... Information Technology Specialist

Table 1a. Requests for Applications (RFAs) Published by the NCI in FY2019

Sorted by Date of Publication

Date of Publication	RFA	Mechanism	Title	Division, Office, and Center
10/31/2018	CA19-012	UG3, UH3	Immuno-Oncology Translation Network (IOTN): Cancer Immunoprevention Research Projects (UG3/UH3)	DCP
	CA19-013	U54	Immuno-Oncology Translation Network (IOTN): Immuno-engineering to Improve Immunotherapy (i3) Centers (U54 Clinical Trial Not Allowed)	
	CA19-014	U01	Immuno-Oncology Translation Network (IOTN): Cancer Immunoprevention Research Projects (U01 Clinical Trial Not Allowed)	
	CA19-015	U01	Immuno-Oncology Translation Network (IOTN): Cancer Immunotherapy Research Projects (U01 Clinical Trial Not Allowed)	
11/01/2018	CA19-018	UG3, UH3	Accelerating Colorectal Cancer Screening and follow-up through Implementation Science (ACCSIS) (UG3/UH3 Clinical Trial Required)	DCCPS
11/15/2018	CA19-006	P50	Implementation Science for Cancer Control: Advanced Centers (P50 Clinical Trial Optional)	DCCPS
	CA19-005	P50	Implementation Science for Cancer Control: Developing Centers (P50 Clinical Trial Optional)	
12/20/2018	CA19-030	K99, R00	NCI Pathway to Independence Award for Outstanding Early Stage Postdoctoral Researchers (K99/R00 - Independent Clinical Trial Required)	CCT
	CA19-029	K99, R00	NCI Pathway to Independence Award for Outstanding Early Stage Postdoctoral Researchers (K99/R00 - Independent Clinical Trial Not Allowed)	
01/02/2019	CA19-009	R01	U.S.-China Program for Biomedical Collaborative Research (R01 Clinical Trial Optional)	CGH DCCPS DCTD DCB DCP
01/07/2019	CA19-023	R01	Revisions for Incorporation of Novel NCI-Supported Technology to Accelerate Cancer Research (R01 Clinical Trial Optional)	CSSI
	CA19-024	U01	Revisions for Incorporation of Novel NCI-Supported Technology to Accelerate Cancer Research (U01 Clinical Trial Optional)	
	CA19-021	R21	Innovative Biospecimen Science Technologies for Basic and Clinical Cancer Research (R21 Clinical Trials Not Allowed)	
	CA19-020	R33	Advanced Development and Validation of Emerging Molecular and Cellular Analysis Technologies for Basic and Clinical Cancer Research (R33 Clinical Trials Not Allowed)	
	CA19-019	R21	Innovative Molecular and Cellular Analysis Technologies for Basic and Clinical Cancer Research (R21 Clinical Trials Not Allowed)	
	CA19-027	P50	Revisions for Incorporation of Novel NCI-Supported Technology to Accelerate Cancer Research (P50 Clinical Trial Optional)	
	CA19-026	P01	Revisions for Incorporation of Novel NCI-Supported Technology to Accelerate Cancer Research (P01 Clinical Trial Optional)	
	CA19-028	U2C	Revisions for Incorporation of Novel NCI-Supported Technology to Accelerate Cancer Research (U2C Clinical Trial Optional)	
	CA19-022	R33	Advanced Development and Validation of Emerging Biospecimen Science Technologies for Basic and Clinical Cancer Research (R33 Clinical Trials Not Allowed)	
	CA19-025	U54	Revisions for Incorporation of Novel NCI-Supported Technology to Accelerate Cancer Research (U54 Clinical Trials Optional)	

continued

Source: Office of Referral, Review and Program Coordination.

Table 1a (cont'd). Requests for Applications (RFAs) Published by the NCI in FY2019

Sorted by Date of Publication

Date of Publication	RFA	Mechanism	Title	Division, Office, and Center
01/10/2019	CA19-007	UM1	The Experimental Therapeutics Clinical Trials Network (UM1 Clinical Trials Required)	DCTD
	CA19-008	U24	The Experimental Therapeutics Clinical Trials Network (ETCTN) Pharmacokinetic Resource Laboratories (U24 Clinical Trials Not Allowed)	
01/11/2019	CA19-033	U01	Improving Outcomes for Pediatric, Adolescent and Young Adult Cancer Survivors (U01 Clinical Trial Required)	DCCPS
01/24/2019	CA19-032	R01	Provocative Questions (PQs) in Cancer with an Underlying HIV Infection (R01 Clinical Trial Optional)	DCB
02/01/2019	CA19-011	U24	NCI Awardee Skills Development Consortium: Program Logistics and Evaluation Coordinating Center (U24 Clinical Trial Not Allowed)	CCT
	CA19-010	UE5	NCI Awardee Skills Development Consortium: Research Education Short Courses (UE5 Clinical Trial Not Allowed)	
02/20/2019	CA19-044	U01	Advancing Cancer Immunotherapy by Mitigating Immune-related Adverse Events (irAEs) (U01 Clinical Trial Not Allowed)	DCB DCTD
03/13/2019	CA19-034	P20	Feasibility and Planning Studies for Development of Specialized Programs of Research Excellence (SPOREs) to Investigate Cancer Health Disparities (P20 Clinical Trial Optional)	CRCHD
03/27/2019	CA19-038	R21	ITCR: innovative algorithms (R21 Clinical Trial Optional)	CSSI
	CA19-035	R01	Optimizing the Management and Outcomes for Cancer Survivors Transitioning to Follow-up Care (R01 Clinical Trial Required)	DCCPS
03/28/2019	CA19-039	U01	Early-Stage Development of Informatics Technologies for Cancer Research and Management (U01 Clinical Trial Optional)	CSSI
	CA19-041	U24	Sustained Support for Informatics Technologies for Cancer Research and Management (U24 Clinical Trial Optional)	
	CA19-040	U24	Advanced Development of Informatics Technologies for Cancer Research and Management (U24 Clinical Trial Optional)	
04/08/2019	CA19-047	R44	SBIR Phase IIB Bridge Awards to Accelerate the Development of Cancer-Relevant Technologies Toward Commercialization (R44 Clinical Trial Optional)	SBIRDC
06/28/2019	CA19-031	UG1	Cancer Prevention Clinical Trials Network (CP-CTNet): CP-CTNet Sites (UG1 Clinical Trial Required)	DCP
	CA19-055	U01	Novel Technology Tools to Facilitate Research Using Next Generation Patient-derived Cancer Models (U01 Clinical Trial Not Allowed)	CCG
07/18/2019	CA19-057	F99, K00	The NCI Predoctoral to Postdoctoral Fellow Transition Award (F99/K00)	CCT
07/30/2019	CA19-046	U24	Participant Engagement and Cancer Genome Sequencing (PE-CGS): Coordinating Center (U24 Clinical Trial Not Allowed)	DCCPS
	CA19-045	U2C	Participant Engagement and Cancer Genome Sequencing (PE-CGS): Research Centers (U2C Clinical Trial Optional)	
07/31/2019	CA19-062	R01	Revision Applications to Support the Application of Informatics Technology for Cancer Research (R01 Clinical Trials Optional)	CSSI
	CA19-063	U24	Revision Applications to Support the Application of Informatics Technology for Cancer Research (U24 Clinical Trials Optional)	
	CA19-061	U01	Revision Applications to Support the Application of Informatics Technology for Cancer Research (U01 Clinical Trials Optional)	

continued

Source: Office of Referral, Review and Program Coordination.

Table 1a (cont'd). Requests for Applications (RFAs) Published by the NCI in FY2019

Sorted by Date of Publication

Date of Publication	RFA	Mechanism	Title	Division, Office, and Center
09/05/2019	CA19-052	P01	Revision Applications for Mechanisms of Drug Resistance (P01 Clinical Trials Not Allowed)	DCTD DCB
	CA19-050	U01	Revision Applications for Mechanisms of Drug Resistance (U01 Clinical Trials Not Allowed)	
	CA19-049	R01	Revision Applications for Mechanisms of Drug Resistance (R01 Clinical Trials Not Allowed)	
	CA19-053	P50	Revision Applications for Mechanisms of Drug Resistance (P50 Clinical Trials Not Allowed)	
09/06/2019	CA19-051	U54	Revision Applications for Mechanisms of Drug Resistance (U54 Clinical Trials Not Allowed)	DCTD DCB
09/11/2019	CA19-056	UM1	Limited Competition: AIDS Malignancy Consortium (AMC) (UM1 Clinical Trials Required)	OHAM
09/12/2019	CA19-064	R01	Improving the Reach and Quality of Cancer Care in Rural Populations (R01 Clinical Trial Required)	DCCPS
09/13/2019	CA19-042	UE5	Informatics Technology for Cancer Research Education Center (UE5 Clinical Trials Not Allowed)	CSSI
09/17/2019	CA19-054	U01	Cancer Intervention and Surveillance Modeling Network (CISNET) (U01 Clinical Trial Not Allowed)	DCCPS
09/23/2019	CA19-059	UM1	Limited Competition: Pediatric Brain Tumor Consortium (UM1 Clinical Trials Required)	DCTD

Source: Office of Referral, Review and Program Coordination.

Table 1b. Requests for Applications (RFAs) Published by the NCI in FY2019

Sorted by Division, Office, and Center

Division, Office, and Center	RFA	Mechanism	Title	Date of Publication
DCP	CA19-012	UG3, UH3	Immuno-Oncology Translation Network (IOTN): Cancer Immunoprevention Research Projects (UG3/UH3)	10/31/2018
	CA19-013	U54	Immuno-Oncology Translation Network (IOTN): Immuno-engineering to Improve Immunotherapy (i3) Centers (U54 Clinical Trial Not Allowed)	
	CA19-014	U01	Immuno-Oncology Translation Network (IOTN): Cancer Immunoprevention Research Projects (U01 Clinical Trial Not Allowed)	
	CA19-015	U01	Immuno-Oncology Translation Network (IOTN): Cancer Immunotherapy Research Projects (U01 Clinical Trial Not Allowed)	
DCCPS	CA19-018	UG3, UH3	Accelerating Colorectal Cancer Screening and follow-up through Implementation Science (ACCSIS)(UG3/UH3 Clinical Trial Required)	11/01/2018
DCCPS	CA19-006	P50	Implementation Science for Cancer Control: Advanced Centers (P50 Clinical Trial Optional)	11/15/2018
	CA19-005	P50	Implementation Science for Cancer Control: Developing Centers (P50 Clinical Trial Optional)	
CCT	CA19-030	K99, R00	NCI Pathway to Independence Award for Outstanding Early Stage Postdoctoral Researchers (K99/R00 - Independent Clinical Trial Required)	12/20/2018
	CA19-029	K99, R00	NCI Pathway to Independence Award for Outstanding Early Stage Postdoctoral Researchers (K99/R00 - Independent Clinical Trial Not Allowed)	
CGH DCCPS DCTD DCB DCP	CA19-009	R01	U.S.-China Program for Biomedical Collaborative Research (R01 Clinical Trial Optional)	01/02/2019
CSSI	CA19-023	R01	Revisions for Incorporation of Novel NCI-Supported Technology to Accelerate Cancer Research (R01 Clinical Trial Optional)	01/07/2019
	CA19-024	U01	Revisions for Incorporation of Novel NCI-Supported Technology to Accelerate Cancer Research (U01 Clinical Trial Optional)	
	CA19-021	R21	Innovative Biospecimen Science Technologies for Basic and Clinical Cancer Research (R21 Clinical Trials Not Allowed)	
	CA19-020	R33	Advanced Development and Validation of Emerging Molecular and Cellular Analysis Technologies for Basic and Clinical Cancer Research (R33 Clinical Trials Not Allowed)	
	CA19-019	R21	Innovative Molecular and Cellular Analysis Technologies for Basic and Clinical Cancer Research (R21 Clinical Trials Not Allowed)	
	CA19-027	P50	Revisions for Incorporation of Novel NCI-Supported Technology to Accelerate Cancer Research (P50 Clinical Trial Optional)	
	CA19-026	P01	Revisions for Incorporation of Novel NCI-Supported Technology to Accelerate Cancer Research (P01 Clinical Trial Optional)	
	CA19-028	U2C	Revisions for Incorporation of Novel NCI-Supported Technology to Accelerate Cancer Research (U2C Clinical Trial Optional)	
	CA19-022	R33	Advanced Development and Validation of Emerging Biospecimen Science Technologies for Basic and Clinical Cancer Research (R33 Clinical Trials Not Allowed)	
	CA19-025	U54	Revisions for Incorporation of Novel NCI-Supported Technology to Accelerate Cancer Research (U54 Clinical Trials Optional)	

continued

Source: Office of Referral, Review and Program Coordination.

Table 1b (cont'd). Requests for Applications (RFAs) Published by the NCI in FY2019

Sorted by Division, Office, and Center

Division, Office, and Center	RFA	Mechanism	Title	Date of Publication
DCTD	CA19-007	UM1	The Experimental Therapeutics Clinical Trials Network (UM1 Clinical Trials Required)	01/10/2019
	CA19-008	U24	The Experimental Therapeutics Clinical Trials Network (ETCTN) Pharmacokinetic Resource Laboratories (U24 Clinical Trials Not Allowed)	
DCCPS	CA19-033	U01	Improving Outcomes for Pediatric, Adolescent and Young Adult Cancer Survivors (U01 Clinical Trial Required)	01/11/2019
DCB	CA19-032	R01	Provocative Questions (PQs) in Cancer with an Underlying HIV Infection (R01 Clinical Trial Optional)	01/24/2019
CCT	CA19-011	U24	NCI Awardee Skills Development Consortium: Program Logistics and Evaluation Coordinating Center (U24 Clinical Trial Not Allowed)	02/01/2019
	CA19-010	UE5	NCI Awardee Skills Development Consortium: Research Education Short Courses (UE5 Clinical Trial Not Allowed)	
DCB DCTD	CA19-044	U01	Advancing Cancer Immunotherapy by Mitigating Immune-related Adverse Events (irAEs) (U01 Clinical Trial Not Allowed)	02/20/2019
CRCHD	CA19-034	P20	Feasibility and Planning Studies for Development of Specialized Programs of Research Excellence (SPOREs) to Investigate Cancer Health Disparities (P20 Clinical Trial Optional)	03/13/2019
CSSI	CA19-038	R21	ITCR: innovative algorithms (R21 Clinical Trial Optional)	03/27/2019
DCCPS	CA19-035	R01	Optimizing the Management and Outcomes for Cancer Survivors Transitioning to Follow-up Care (R01 Clinical Trial Required)	
CSSI	CA19-039	U01	Early-Stage Development of Informatics Technologies for Cancer Research and Management (U01 Clinical Trial Optional)	03/28/2019
	CA19-041	U24	Sustained Support for Informatics Technologies for Cancer Research and Management (U24 Clinical Trial Optional)	
	CA19-040	U24	Advanced Development of Informatics Technologies for Cancer Research and Management (U24 Clinical Trial Optional)	
SBIRDC	CA19-047	R44	SBIR Phase IIB Bridge Awards to Accelerate the Development of Cancer-Relevant Technologies Toward Commercialization (R44 Clinical Trial Optional)	04/08/2019
DCP	CA19-031	UG1	Cancer Prevention Clinical Trials Network (CP-CTNet): CP-CTNet Sites (UG1 Clinical Trial Required)	06/28/2019
CCG	CA19-055	U01	Novel Technology Tools to Facilitate Research Using Next Generation Patient-derived Cancer Models (U01 Clinical Trial Not Allowed)	
CCT	CA19-057	F99, K00	The NCI Predoctoral to Postdoctoral Fellow Transition Award (F99/K00)	07/18/2019
DCCPS	CA19-046	U24	Participant Engagement and Cancer Genome Sequencing (PE-CGS): Coordinating Center (U24 Clinical Trial Not Allowed)	07/30/2019
	CA19-045	U2C	Participant Engagement and Cancer Genome Sequencing (PE-CGS): Research Centers (U2C Clinical Trial Optional)	
CSSI	CA19-062	R01	Revision Applications to Support the Application of Informatics Technology for Cancer Research (R01 Clinical Trials Optional)	07/31/2019
	CA19-063	U24	Revision Applications to Support the Application of Informatics Technology for Cancer Research (U24 Clinical Trials Optional)	
	CA19-061	U01	Revision Applications to Support the Application of Informatics Technology for Cancer Research (U01 Clinical Trials Optional)	

continued

Source: Office of Referral, Review and Program Coordination.

Table 1b (cont'd). Requests for Applications (RFAs) Published by the NCI in FY2019

Sorted by Division, Office, and Center

Division, Office, and Center	RFA	Mechanism	Title	Date of Publication
DCTD DCB	CA19-052	P01	Revision Applications for Mechanisms of Drug Resistance (P01 Clinical Trials Not Allowed)	09/05/2019
	CA19-050	U01	Revision Applications for Mechanisms of Drug Resistance (U01 Clinical Trials Not Allowed)	
	CA19-049	R01	Revision Applications for Mechanisms of Drug Resistance (R01 Clinical Trials Not Allowed)	
	CA19-053	P50	Revision Applications for Mechanisms of Drug Resistance (P50 Clinical Trials Not Allowed)	
DCTD DCB	CA19-051	U54	Revision Applications for Mechanisms of Drug Resistance (U54 Clinical Trials Not Allowed)	09/06/2019
OHAM	CA19-056	UM1	Limited Competition: AIDS Malignancy Consortium (AMC) (UM1 Clinical Trials Required)	09/11/2019
DCCPS	CA19-064	R01	Improving the Reach and Quality of Cancer Care in Rural Populations (R01 Clinical Trial Required)	09/12/2019
CSSI	CA19-042	UE5	Informatics Technology for Cancer Research Education Center (UE5 Clinical Trials Not Allowed)	09/13/2019
DCCPS	CA19-054	U01	Cancer Intervention and Surveillance Modeling Network (CISNET) (U01 Clinical Trial Not Allowed)	09/17/2019
DCTD	CA19-059	UM1	Limited Competition: Pediatric Brain Tumor Consortium (UM1 Clinical Trials Required)	09/23/2019

Source: Office of Referral, Review and Program Coordination.

Table 2. NCI Participation in Trans-NIH Requests for Applications (RFAs) in FY2019

Sorted by Date of Publication

Date of Publication	RFA	Mechanism	Title	Division, Office, and Center	Issuing NIH-IC
10/29/2018	OD18-102	R24	Limited Competition: Restoring Research Resources Lost or Damaged Due to Hurricanes Harvey, Irma, and Maria (R24 Clinical Trial Optional)	DCB	NIH
11/05/2018	NS19-010	UG3, UH3	Optimization of Non-addictive Therapies [Small Molecules and Biologics] to Treat Pain (UG3/UH3 Clinical Trial Not Allowed)	DCP	NIH
11/26/2018	OD19-012	R25	Short Courses on Innovative Methodologies and Approaches in the Behavioral and Social Sciences (R25 Clinical Trial Not Allowed)	CCT	NIH
12/04/2018	AI18-054	R01	U.S.-Brazil Collaborative Biomedical Research Program (R01 Clinical Trial Optional)	CGH	NIH
12/10/2018	NS19-024	U24	HEAL Initiative: Early Phase Pain Investigation Clinical Network - Data Coordinating Center (U24 Clinical Trials Not Allowed)	CGH	NIH
	NS19-025	U24	HEAL Initiative: Early Phase Pain Investigation Clinical Network - Specialized Clinical Centers (U24 Clinical Trial Not Allowed)		
	NS19-016	UG3, UH3	HEAL Initiative: Translational Devices to Treat Pain (UG3/UH3 Clinical Trial Optional)		
	NS19-017	U44	HEAL Initiative: Translational Devices to Treat Pain (U44 Clinical Trial Optional)		
	NS19-018	UH3	HEAL Initiative: Clinical Devices to Treat Pain (UH3 Clinical Trial Optional)		
	NS19-020	U44	HEAL Initiative: Optimization of Non-addictive Therapies [Small Molecules and Biologics] to Treat Pain - (U44 Clinical Trial Not Allowed)		
	NS19-021	UG3, UH3	HEAL Initiative: Pain Management Effectiveness Research Network: Clinical Trial Planning and Implementation Cooperative Agreement (UG3/UH3 Clinical Trial Required)		
	NS19-023	U24	HEAL Initiative: Early Phase Pain Investigation Clinical Network - Clinical Coordinating Center (U24 Clinical Trial Not Allowed)		
	AT19-004	UG3, UH3	HEAL Initiative: Pragmatic and Implementation Studies for the Management of Pain to Reduce Opioid Prescribing (PRISM) (UG3/UH3, Clinical Trials Optional)		
	EB18-003	U18	HEAL Initiative: Translational Development of Devices to Treat Pain (U18 Clinical Trial Not Allowed)		
12/17/2018	OD19-014	U01	NIH Research Evaluation and Commercialization Hubs (REACH) Awards (U01 Clinical Trial Not Allowed)	SBIRDC	NIH
01/08/2019	RM19-001	U01	HEAL Initiative: Stimulating Peripheral Activity to Relieve Conditions (SPARC): Anatomical and Functional Mapping of Pain-Related Visceral Organ Neural Circuitry (U01 Clinical Trial Optional)	ALL DIVISIONS	NIH
01/09/2019	RM19-002	UH3	The Human Biomolecular Atlas Program (HuBMAP): Rapid Implementation of Technologies that Will Accelerate Development of a Framework for Mapping the Human Body at High Resolution (UH3 Clinical Trial Not Allowed)	DCB	NIH-RM

continued

Source: Office of Referral, Review and Program Coordination.

Table 2 (cont'd). NCI Participation in Trans-NIH Requests for Applications (RFAs) in FY2019

Sorted by Date of Publication

Date of Publication	RFA	Mechanism	Title	Division, Office, and Center	Issuing NIH-IC
02/05/2019	OD19-018	R33, R61	Clinical Trials Development for Co-Occurring Conditions in Individuals with Down syndrome: Phased Awards for INCLUDE (R61/R33 Clinical Trials Required)	ALL DIVISIONS	NIH
	OD19-015	R21	INvestigation of Co-occurring conditions across the Lifespan to Understand Down syndromE (INCLUDE) Clinical Trial Readiness (R21 Clinical Trial Not Allowed)		
	OD19-016	R01	Transformative Research Award for the INCLUDE (Investigation of Co-occurring Conditions across the Lifespan to Understand Down syndrome) Project (R01 Clinical Trial Not Allowed)		
02/21/2019	OD19-019	R01	Tobacco Regulatory Science (R01 Clinical Trial Optional)	DCCPS	NIH-FDA
03/15/2019	AI19-022	R01	U.S.-South Africa Program for Collaborative Biomedical Research - Phase 2 (HIV/AIDS) (R01 Clinical Trial Optional)	OHAM	NIH
	AI19-023	U01	U.S.-South Africa Program for Collaborative Biomedical Research - Phase 2 (HIV/AIDS) (U01 Clinical Trial Optional)		
04/03/2019	DA20-004	U24	Limited Competition for Adolescent Brain Cognitive Development (ABCD) Study - Coordinating Center (U24 Clinical Trial Not Allowed)	ALL DIVISIONS	NIH
	DA20-003	U24	Limited Competition for Adolescent Brain Cognitive Development (ABCD) Study - Data Analysis, Informatics and Resource Center (U24 Clinical Trial Not Allowed)		
	DA20-002	U01	Limited Competition for Adolescent Brain Cognitive Development (ABCD) Study - Linked Research Project Sites (Collaborative U01 Clinical Trial Not Allowed)		
04/18/2019	NS19-036	U24	HEAL Initiative: Early Phase Pain Investigation Clinical Network - Specialized Clinical Centers (U24 Clinical Trial Not Allowed)	CGH	NIH
05/02/2019	AI19-041	U01	HLA and KIR Region Genomics in Immune-Mediated Diseases (U01 Clinical Trial Not Allowed)	DCCPS	NIH
05/21/2019	GM19-001	R44	Methods to Improve Reproducibility of Human iPSC Derivation, Growth and Differentiation (SBIR) (R44 Clinical Trial Not Allowed)	SBIRDC	NIH
06/12/2019	TR19-014	UG3, UH3	"Clinical Trials" on a Chip: Tissue Chips to Inform Clinical Trial Design and Implementation in Precision Medicine (UG3/UH3 - Clinical Trial Not Allowed)	DCTD	NIH
07/08/2019	OD19-021	R21	Maximizing the Scientific Value of Existing Biospecimen Collections: Scientific Opportunities for Exploratory Research (R21 Clinical Trial Not Allowed)	DCCPS	NIH-FDA
	OD19-022	R21	Secondary Analyses of Existing Datasets of Tobacco Use and Health (R21 Clinical Trial Not Allowed)		
09/09/2019	HL20-006	K38	Stimulating Access to Research in Residency Transition Scholar (StARRTS) (K38) (Clinical Trial Not Allowed)	CCT	NIH
09/25/2019	OD19-028	R01	Tobacco Regulatory Science (R01 Clinical Trial Optional)	DCCPS	NIH-FDA

continued

Source: Office of Referral, Review and Program Coordination.

Table 2 (cont'd). NCI Participation in Trans-NIH Requests for Applications (RFAs) in FY2019

Sorted by Date of Publication

Date of Publication	RFA	Mechanism	Title	Division, Office, and Center	Issuing NIH-IC
09/26/2019	DK19-009	U01	Continuation of the Consortium for the Study of Chronic Pancreatitis, Diabetes and Pancreatic Cancer Clinical Centers (CPDPC-CCs) (U01 Clinical Trial Optional)	DCP	NIH
	DK19-504	U01	Limited Competition: Continuation of the Consortium for the Study of Chronic Pancreatitis, Diabetes and Pancreatic Cancer Coordination and Data Management Center (CPDPC-CDMC) (U01 Clinical Trial Optional)		
10/03/2018	OD19-011	T32	Predoctoral Training in Advanced Data Analytics for Behavioral and Social Sciences Research (BSSR) - Institutional Research Training Program [T32]	CCT	NIH

Source: Office of Referral, Review and Program Coordination.

Table 3a. Program Announcements (PAs) Published by the NCI in FY2019

Sorted by Date of Publication

Date of Publication	PA/PAR	Mechanism	Title	Division, Office, and Center
10/17/2018	PA19-029	333*	Innovation Corps (I-Corps) at NIH Program for NIH and CDC Translational Research (Admin Supp Clinical Trial Not Allowed)	SBIRDC
10/24/2018	PA19-035	333*	Administrative Supplements to Cancer Center Support Grants to Strengthen NCI-Supported Community Outreach Capacity through Community Health Educators of the National Outreach Network (Admin Suppl Clinical Trial Not Allowed)	CRCHD
12/12/2018	PAR19-101	U01	Physical Sciences-Oncology Network (PS-ON): Physical Sciences-Oncology Projects (PS-OP) (U01 Clinical Trial Optional)	DCB
12/17/2018	PAR19-113	R01	Cancer Tissue Engineering Collaborative: Enabling Biomimetic Tissue-Engineered Technologies for Cancer Research (R01 Clinical Trial Optional)	DCB
	PA19-111	R21	Improving Outcomes in Cancer Treatment-Related Cardiotoxicity (R21 Clinical Trial Optional)	DCCPS
	PA19-112	R01	Improving Outcomes in Cancer Treatment-Related Cardiotoxicity (R01 Clinical Trial Optional)	
01/08/2019	PAR19-149	R21	Exploratory/Developmental Bioengineering Research Grants (EBRG) (R21 Clinical Trial Not Allowed)	DCTD
	PAR19-150	R21	Exploratory/Developmental Bioengineering Research Grants (EBRG) (R21 Clinical Trial Optional)	
01/24/2019	PAR19-168	R01	Biology of Bladder Cancer (R01 Clinical Trial Optional)	DCB DCP DCCPS
	PAR19-169	R21	Biology of Bladder Cancer (R21 Clinical Trial Optional)	
01/29/2019	PA19-174	333*	Administrative Supplements to NCI Grant and Cooperative Agreement Awards to Support Collaborations with the PDX Development and Trial Centers Research Network (PDXNet) (Admin Supp Clinical Trial Not Allowed)	DCTD
02/05/2019	PAR19-183	R01	Biology of Bladder Cancer (R01 Clinical Trial Optional)	DCB DCP DCCPS
	PAR19-184	R21	Biology of Bladder Cancer (R21 Clinical Trial Optional)	
02/22/2019	PAR19-194	R21	Microbial-based Cancer Therapy -Bugs as Drugs (R21 Clinical Trial Not Allowed)	DCTD DCB CRCHD
	PAR19-193	R01	Microbial-based Cancer Therapy -Bugs as Drugs (R01 Clinical Trial Not Allowed)	
02/27/2019	PAR19-199	R21	Modulating Intestinal Microbiota to Enhance Protective Immune Responses against Cancer (R21 Clinical Trial Not Allowed)	DCP DCB
	PAR19-198	R01	Modulating Intestinal Microbiota to Enhance Protective Immune Responses against Cancer (R01 Clinical Trial Not Allowed)	
04/08/2019	PAR19-242	K12	Paul Calabresi Career Development Award for Clinical Oncology (K12 Clinical Trial Optional)	CCT
04/12/2019	PAR19-252	R21	Basic and Translational Research on Adducts in Cancer Risk Identification and Prevention (R21 Clinical Trial Optional)	DCP DCCPS
	PAR19-251	R01	Basic and Translational Research on Adducts in Cancer Risk Identification and Prevention (R01 Clinical Trial Optional)	

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* Administrative Supplement.
Source: Office of Referral, Review and Program Coordination.

Table 3a (cont'd). Program Announcements (PAs) Published by the NCI in FY2019

Sorted by Date of Publication

Date of Publication	PA/PAR	Mechanism	Title	Division, Office, and Center
05/01/2019	PAR19-264	R01	Imaging, Biomarkers and Digital Pathomics for the Early Detection of Premetastatic Aggressive Cancer (R01 Clinical Trial Optional)	DCTD DCP
05/08/2019	PAR19-277	R21	Exploratory Grants in Cancer Epidemiology (R21 Clinical Trial Optional)	DCCPS
	PAR19-276	R03	Dissemination and Implementation Research in Health (R03 Clinical Trial Not Allowed)	
	PAR19-275	R21	Dissemination and Implementation Research in Health (R21 Clinical Trial Optional)	
	PAR19-274	R01	Dissemination and Implementation Research in Health (R01 Clinical Trial Optional)	
05/13/2019	PAR19-279	R01	Provocative Questions (PQs) in Multiple Myeloma Disparities Research (R01 Clinical Trial Optional)	CSSI
	PAR19-280	R21	Provocative Questions (PQs) in Multiple Myeloma Disparities Research (R21 Clinical Trial Optional)	
05/22/2019	PAR19-287	U01	Research Projects in Cancer Systems Biology (U01 Clinical Trial Optional)	DCB
06/05/2019	PAR19-290	R50	NCI Research Specialist (Core-based Scientist) Award (R50 Clinical Trial Not Allowed)	DCB
	PAR19-291	R50	NCI Research Specialist (Laboratory-based Scientist) Award (R50 Clinical Trial Not Allowed)	
06/28/2019	PAR19-309	R21	Stimulating Innovations in Behavioral Intervention Research for Cancer Prevention and Control (R21 Clinical Trial Optional)	DCCPS
07/30/2019	PAR19-325	R01	Clinical Characterization of Cancer Therapy-induced Adverse Sequelae and Mechanism-based Interventional Strategies (R01 Clinical Trial Optional)	DCCPS DCP
08/12/2019	PAR19-340	R01	Leveraging Cognitive Neuroscience to Improve Assessment of Cancer Treatment-Related Cognitive Impairment (R01 Clinical Trial Optional)	DCCPS
	PAR19-339	R21	Leveraging Cognitive Neuroscience to Improve Assessment of Cancer Treatment-Related Cognitive Impairment (R21 Clinical Trial Optional)	
08/16/2019	PAR19-348	R01	Innovative Approaches to Studying Cancer Communication in the New Information Ecosystem (R01 Clinical Trial Optional)	DCCPS
	PAR19-349	R35	NCI Outstanding Investigator Award (R35 Clinical Trial Not Allowed)	DCB
	PAR19-350	R21	Innovative Approaches to Studying Cancer Communication in the New Information Ecosystem (R21 Clinical Trial Optional)	DCCPS
08/28/2019	PAR19-354	R21	Neural Regulation of Cancer (R21 Clinical Trial Not Allowed)	DCB
	PAR19-353	R01	Neural Regulation of Cancer (R01 Clinical Trial Not Allowed)	
	PAR19-356	R21	NCI Clinical and Translational Exploratory/Developmental Studies (R21 Clinical Trial Optional)	DCTD

continued

Source: Office of Referral, Review and Program Coordination.

Table 3a (cont'd). Program Announcements (PAs) Published by the NCI in FY2019

Sorted by Date of Publication

Date of Publication	PA/PAR	Mechanism	Title	Division, Office, and Center
08/29/2019	PAR19-352	R01	Intervening with Cancer Caregivers to Improve Patient Health Outcomes and Optimize Health Care Utilization (R01 Clinical Trial Optional)	DCCPS
	PAR19-361	U01	Small-Cell Lung Cancer (SCLC) Consortium: Therapeutic Development and Mechanisms of Resistance (U01 Clinical Trial Not Allowed)	DCTD DCB
	PAR19-359	R03	Linking the Provider Recommendation to Adolescent HPV Vaccine Uptake (R03 Clinical Trial Optional)	DCCPS
	PAR19-360	R01	Linking the Provider Recommendation to Adolescent HPV Vaccine Uptake (R01 Clinical Trial Optional)	
	PAR19-358	R21	Linking the Provider Recommendation to Adolescent HPV Vaccine Uptake (R21 Clinical Trial Optional)	
	PAR19-355	R21	Intervening with Cancer Caregivers to Improve Patient Health Outcomes and Optimize Health Care Utilization (R21 Clinical Trial Optional)	
09/05/2019	PAR19-363	R01	Integration of Imaging and Fluid-Based Tumor Monitoring in Cancer Therapy (R01 Clinical Trial Optional)	DCTD

Source: Office of Referral, Review and Program Coordination.

Table 3b. Program Announcements (PAs) Published by the NCI in FY2019

Sorted by Division, Office, and Center

Division, Office, and Center	PA/PAR	Mechanism	Title	Date of Publication
SBIRDC	PA19-029	333*	Innovation Corps (I-Corps) at NIH Program for NIH and CDC Translational Research (Admin Supp Clinical Trial Not Allowed)	10/17/2018
CRCHD	PA19-035	333*	Administrative Supplements to Cancer Center Support Grants to Strengthen NCI-Supported Community Outreach Capacity through Community Health Educators of the National Outreach Network (Admin Suppl Clinical Trial Not Allowed)	10/24/2018
DCB	PAR19-101	U01	Physical Sciences-Oncology Network (PS-ON): Physical Sciences-Oncology Projects (PS-OP) (U01 Clinical Trial Optional)	12/12/2018
DCB	PAR19-113	R01	Cancer Tissue Engineering Collaborative: Enabling Biomimetic Tissue-Engineered Technologies for Cancer Research (R01 Clinical Trial Optional)	12/17/2018
DCCPS	PA19-111	R21	Improving Outcomes in Cancer Treatment-Related Cardiotoxicity (R21 Clinical Trial Optional)	
	PA19-112	R01	Improving Outcomes in Cancer Treatment-Related Cardiotoxicity (R01 Clinical Trial Optional)	
DCTD	PAR19-149	R21	Exploratory/Developmental Bioengineering Research Grants (EBRG) (R21 Clinical Trial Not Allowed)	01/08/2019
	PAR19-150	R21	Exploratory/Developmental Bioengineering Research Grants (EBRG) (R21 Clinical Trial Optional)	
DCB DCP DCCPS	PAR19-168	R01	Biology of Bladder Cancer (R01 Clinical Trial Optional)	01/24/2019
	PAR19-169	R21	Biology of Bladder Cancer (R21 Clinical Trial Optional)	
DCTD	PA19-174	333*	Administrative Supplements to NCI Grant and Cooperative Agreement Awards to Support Collaborations with the PDX Development and Trial Centers Research Network (PDXNet) (Admin Supp Clinical Trial Not Allowed)	01/29/2019
DCB DCP DCCPS	PAR19-183	R01	Biology of Bladder Cancer (R01 Clinical Trial Optional)	02/05/2019
	PAR19-184	R21	Biology of Bladder Cancer (R21 Clinical Trial Optional)	
DCTD DCB CRCHD	PAR19-194	R21	Microbial-based Cancer Therapy -Bugs as Drugs (R21 Clinical Trial Not Allowed)	02/22/2019
	PAR19-193	R01	Microbial-based Cancer Therapy -Bugs as Drugs (R01 Clinical Trial Not Allowed)	
DCP DCB	PAR19-199	R21	Modulating Intestinal Microbiota to Enhance Protective Immune Responses against Cancer (R21 Clinical Trial Not Allowed)	02/27/2019
	PAR19-198	R01	Modulating Intestinal Microbiota to Enhance Protective Immune Responses against Cancer (R01 Clinical Trial Not Allowed)	
CCT	PAR19-242	K12	Paul Calabresi Career Development Award for Clinical Oncology (K12 Clinical Trial Optional)	04/08/2019
DCP DCCPS	PAR19-252	R21	Basic and Translational Research on Adducts in Cancer Risk Identification and Prevention (R21 Clinical Trial Optional)	04/12/2019
	PAR19-251	R01	Basic and Translational Research on Adducts in Cancer Risk Identification and Prevention (R01 Clinical Trial Optional)	
DCTD DCP	PAR19-264	R01	Imaging, Biomarkers and Digital Pathomics for the Early Detection of Premetastatic Aggressive Cancer (R01 Clinical Trial Optional)	05/01/2019

continued

* Administrative Supplement.
Source: Office of Referral, Review and Program Coordination.

Table 3b (cont'd). Program Announcements (PAs) Published by the NCI in FY2019

Sorted by Division, Office, and Center

Division, Office, and Center	PA/PAR	Mechanism	Title	Date of Publication
DCCPS	PAR19-277	R21	Exploratory Grants in Cancer Epidemiology (R21 Clinical Trial Optional)	05/08/2019
	PAR19-276	R03	Dissemination and Implementation Research in Health (R03 Clinical Trial Not Allowed)	
	PAR19-275	R21	Dissemination and Implementation Research in Health (R21 Clinical Trial Optional)	
	PAR19-274	R01	Dissemination and Implementation Research in Health (R01 Clinical Trial Optional)	
CSSI	PAR19-279	R01	Provocative Questions (PQs) in Multiple Myeloma Disparities Research (R01 Clinical Trial Optional)	05/13/2019
	PAR19-280	R21	Provocative Questions (PQs) in Multiple Myeloma Disparities Research (R21 Clinical Trial Optional)	
DCB	PAR19-287	U01	Research Projects in Cancer Systems Biology (U01 Clinical Trial Optional)	05/22/2019
DCB	PAR19-290	R50	NCI Research Specialist (Core-based Scientist) Award (R50 Clinical Trial Not Allowed)	06/05/2019
	PAR19-291	R50	NCI Research Specialist (Laboratory-based Scientist) Award (R50 Clinical Trial Not Allowed)	
DCCPS	PAR19-309	R21	Stimulating Innovations in Behavioral Intervention Research for Cancer Prevention and Control (R21 Clinical Trial Optional)	06/28/2019
DCCPS DCP	PAR19-325	R01	Clinical Characterization of Cancer Therapy-induced Adverse Sequelae and Mechanism-based Interventional Strategies (R01 Clinical Trial Optional)	07/30/2019
DCCPS	PAR19-340	R01	Leveraging Cognitive Neuroscience to Improve Assessment of Cancer Treatment-Related Cognitive Impairment (R01 Clinical Trial Optional)	08/12/2019
	PAR19-339	R21	Leveraging Cognitive Neuroscience to Improve Assessment of Cancer Treatment-Related Cognitive Impairment (R21 Clinical Trial Optional)	
DCCPS	PAR19-348	R01	Innovative Approaches to Studying Cancer Communication in the New Information Ecosystem (R01 Clinical Trial Optional)	08/16/2019
DCB	PAR19-349	R35	NCI Outstanding Investigator Award (R35 Clinical Trial Not Allowed)	
DCCPS	PAR19-350	R21	Innovative Approaches to Studying Cancer Communication in the New Information Ecosystem (R21 Clinical Trial Optional)	
DCB	PAR19-354	R21	Neural Regulation of Cancer (R21 Clinical Trial Not Allowed)	08/28/2019
	PAR19-353	R01	Neural Regulation of Cancer (R01 Clinical Trial Not Allowed)	
DCTD	PAR19-356	R21	NCI Clinical and Translational Exploratory/Developmental Studies (R21 Clinical Trial Optional)	

continued

Source: Office of Referral, Review and Program Coordination.

Table 3b (cont'd). Program Announcements (PAs) Published by the NCI in FY2019

Sorted by Division, Office, and Center

Division, Office, and Center	PA/PAR	Mechanism	Title	Date of Publication
DCCPS	PAR19-352	R01	Intervening with Cancer Caregivers to Improve Patient Health Outcomes and Optimize Health Care Utilization (R01 Clinical Trial Optional)	08/29/2019
DCTD DCB	PAR19-361	U01	Small-Cell Lung Cancer (SCLC) Consortium: Therapeutic Development and Mechanisms of Resistance (U01 Clinical Trial Not Allowed)	
DCCPS	PAR19-359	R03	Linking the Provider Recommendation to Adolescent HPV Vaccine Uptake (R03 Clinical Trial Optional)	
	PAR19-360	R01	Linking the Provider Recommendation to Adolescent HPV Vaccine Uptake (R01 Clinical Trial Optional)	
	PAR19-358	R21	Linking the Provider Recommendation to Adolescent HPV Vaccine Uptake (R21 Clinical Trial Optional)	
	PAR19-355	R21	Intervening with Cancer Caregivers to Improve Patient Health Outcomes and Optimize Health Care Utilization (R21 Clinical Trial Optional)	
DCTD	PAR19-363	R01	Integration of Imaging and Fluid-Based Tumor Monitoring in Cancer Therapy (R01 Clinical Trial Optional)	09/05/2019

Source: Office of Referral, Review and Program Coordination.

Table 4. NCI Participation in Trans-NIH Program Announcements (PAs/PARs) in FY2019

Sorted by Date of Publication

Date of Publication	PA/PAR	Mechanism	Title	Division, Office, and Center	Issuing NIH-IC
10/01/2018	PA18-946	R21	Applying a Biopsychosocial Perspective to Self-Management of Chronic Pain (R21 Clinical Trial Optional)	DCP	NIH
	PA18-945	R01	Applying a Biopsychosocial Perspective to Self-Management of Chronic Pain (R01 Clinical Trial Optional)		
	PA18-943	R21	Biobehavioral Basis of Chronic Pain (R21 Clinical Trial Optional)		
	PA18-944	R01	Biobehavioral Basis of Chronic Pain (R01 Clinical Trial Optional)		
10/05/2018	PAR18-951	U01	Opportunities for Collaborative Research at the NIH Clinical Center (U01 Clinical Trial Optional)	DCTD	NIH
	PAR19-019	R21	Mechanisms of Disparities in Etiology and Outcomes of Lung Cancer in the U.S.: The Role of Risk and Protective Factors (R21 Clinical Trial Not Allowed)	CRCHD DCB	
	PAR19-018	R01	Mechanisms of Disparities in Etiology and Outcomes of Lung Cancer in the U.S.: The Role of Risk and Protective Factors (R01 Clinical Trial Not Allowed)		
	PAR18-950	X02	Pre-application: Opportunities for Collaborative Research at the NIH Clinical Center (X02 Clinical Trial Optional)	DCTD	
10/24/2018	PA19-034	R43, R44	Commercializing Understudied Proteins from the Illuminating the Druggable Genome Project (IDG) (R43/R44 Clinical Trial Not Allowed)	SBIRDC	NIH
	PA19-033	R41, R42	Commercializing Understudied Proteins from the Illuminating the Druggable Genome Project (IDG) (R41/R42 Clinical Trial Not Allowed)		
10/25/2018	PAR19-038	K43	Emerging Global Leader Award (K43 Independent Clinical Trial Required)	OHAM CGH CCT	NIH
	PAR19-036	T32	Medical Scientist Training Program (T32)	CCT	
11/02/2018	PAR19-051	K43	Emerging Global Leader Award (K43 Independent Clinical Trial Required)	CGH	NIH
11/05/2018	PA19-056	R01	Research Project Grant (Parent R01 Clinical Trial Not Allowed)	ALL DIVISIONS	NIH
11/09/2018	PAR19-064	R21	Mechanism for Time-Sensitive Drug Abuse Research (R21 Clinical Trial Optional)	DCCPS	NIH
11/16/2018	PAR19-069	R03	Small Research Grants for Analyses of Data for the Gabriella Miller Kids First Data Resource (R03 - Clinical Trial Not Allowed)	DCTD	NIH
11/28/2018	PAR19-093	R01	Leveraging Health Information Technology (Health IT) to Address Minority Health and Health Disparities (R01 Clinical Trial Optional)	DCCPS	NIH
12/11/2018	PAR19-098	K43	Emerging Global Leader Award (K43 Independent Clinical Trial Not Allowed)	CGH	NIH

continued

Source: Office of Referral, Review and Program Coordination.

Table 4 (cont'd). NCI Participation in Trans-NIH Program Announcements (PAs/PARs) in FY2019

Sorted by Date of Publication

Date of Publication	PA/PAR	Mechanism	Title	Division, Office, and Center	Issuing NIH-IC
12/20/2018	PA19-116	K08	Mentored Clinical Scientist Research Career Development Award (Parent K08 Independent Clinical Trial Required)	CCT	NIH
	PA19-117	K08	Mentored Clinical Scientist Research Career Development Award (Parent K08 Independent Clinical Trial Not Allowed)		
	PA19-129	K99, R00	NIH Pathway to Independence Award (Parent K99/R00 - Independent Clinical Trial Required)		
	PA19-130	K99, R00	NIH Pathway to Independence Award (Parent K99/R00 - Independent Clinical Trial Not Allowed)		
12/21/2018	PAR19-135	R15	Research Enhancement Award Program (REAP) for Health Professional Schools and Graduate Schools (R15 Clinical Trial Required)	ALL DIVISIONS	NIH
	PAR19-136	R01	End-of-Life and Palliative Needs of Adolescents and Young Adults (AYA) with Serious Illnesses (R01 Clinical Trial Optional)	DCCPS	
	PAR19-134	R15	Research Enhancement Award Program (REAP) for Health Professional Schools and Graduate Schools (R15 Clinical Trial Not Allowed)	ALL DIVISIONS	
	PAR19-133	R15	Academic Research Enhancement Award for Undergraduate-Focused Institutions (R15 - Clinical Trial Required)		
01/08/2019	PAR19-158	R01	Bioengineering Research Grants (BRG) (R01 Clinical Trial Not Allowed)	DCTD	NIH
	PAR19-156	U01	Bioengineering Research Partnerships (U01 Clinical Trial Not Allowed)		
	PAR19-153	R21	End-of-Life and Palliative Needs of Adolescents and Young Adults (AYA) with Serious Illnesses (R21 Clinical Trial Optional)	DCCPS	
	PAR19-159	R01	Bioengineering Research Grants (BRG) (R01 Clinical Trial Required)	DCTD	
	PAR19-157	U01	Bioengineering Research Partnerships (U01 Clinical Trial Required)		
01/09/2019	PAR19-162	R01	Accelerating the Pace of Child Health Research Using Existing Data from the Adolescent Brain Cognitive Development (ABCD) Study (R01-Clinical Trial Not Allowed)	DCCPS	NIH
	PAR19-163	R21	Accelerating the Pace of Child Health Research Using Existing Data from the Adolescent Brain Cognitive Development (ABCD) Study (R21-Clinical Trial Not Allowed)		
01/18/2019	PA19-165	333*	Administrative Supplement for Research on Sex/Gender Influences (Admin Supp Clinical Trial Optional)	ALL DIVISIONS	NIH
02/21/2019	PA19-187	F33	Ruth L. Kirschstein National Research Service Award (NRSA) Individual Senior Fellowship (Parent F33)	CCT	NIH

continued

* Administrative Supplement.
Source: Office of Referral, Review and Program Coordination.

Table 4 (cont'd). NCI Participation in Trans-NIH Program Announcements (PAs/PARs) in FY2019

Sorted by Date of Publication

Date of Publication	PA/PAR	Mechanism	Title	Division, Office, and Center	Issuing NIH-IC
02/22/2019	PA19-196	F31	Ruth L. Kirschstein National Research Service Award (NRSA) Individual Predoctoral Fellowship to Promote Diversity in Health-Related Research (Parent F31-Diversity)	CRCHD	NIH
	PA19-195	F31	Ruth L. Kirschstein National Research Service Award (NRSA) Individual Predoctoral Fellowship (Parent F31)	CCT	NIH
	PA19-191	F30	Ruth L. Kirschstein National Research Service Award (NRSA) Individual Fellowship for Students at Institutions with NIH-Funded Institutional Predoctoral Dual-Degree Training Programs (Parent F30)		
	PA19-188	F32	Ruth L. Kirschstein National Research Service Award (NRSA) Individual Postdoctoral Fellowship (Parent F32)		
	PA19-192	F30	Ruth L. Kirschstein National Research Service Award (NRSA) Individual Fellowship for Students at Institutions Without NIH-Funded Institutional Predoctoral Dual-Degree Training Programs (Parent F30)		
02/28/2019	PA19-200	R01	Mechanisms Underlying the Contribution of Sleep Disturbances to Pain (R01 Clinical Trial Optional)	DCP	NIH
	PA19-201	R21	Mechanisms Underlying the Contribution of Sleep Disturbances to Pain (R21 Clinical Trial Optional)		
03/01/2019	PA19-205	333*	Research on the Health of Women of Understudied, Underrepresented and Underreported (U3) Populations An ORWH FY19 Administrative Supplement (Admin Supp Clinical Trial Optional)	CRCHD	NIH
03/12/2019	PA19-217	333*	Administrative Supplement for Research on Bioethical Issues	DCCPS	NIH
05/01/2019	PAR19-262	R00, SI2	Lasker Clinical Research Scholars Program (Si2/R00 Clinical Trial Optional)	ALL DIVISIONS	NIH
05/07/2019	PA19-271	R41, R42	PHS 2019-02 Omnibus Solicitation of the NIH for Small Business Technology Transfer Grant Applications (Parent STTR [R41/R42] Clinical Trial Required)	SBIRDC	NIH
	PA19-270	R41, R42	PHS 2019-02 Omnibus Solicitation of the NIH for Small Business Technology Transfer Grant Applications (Parent STTR [R41/R42] Clinical Trial Not Allowed)		
	PA19-272	R43, R44	PHS 2019-02 Omnibus Solicitation of the NIH, CDC, and FDA for Small Business Innovation Research Grant Applications (Parent SBIR [R43/R44] Clinical Trial Not Allowed)		
	PA19-273	R43, R44	PHS 2019-02 Omnibus Solicitation of the NIH, CDC, and FDA for Small Business Innovation Research Grant Applications (Parent SBIR [R43/R44] Clinical Trial Required)		
05/14/2019	PAR19-283	D43	Fogarty HIV Research Training Program for Low- and Middle-Income Country Institutions (D43 Clinical Trial Optional)	OHAM	NIH
07/31/2019	PAR19-326	R21	Reducing Stigma to Improve HIV/AIDS Prevention, Treatment and Care in Low- and Middle-Income Countries (R21 Clinical Trial Optional)	OHAM	NIH

continued

* Administrative Supplement.
Source: Office of Referral, Review and Program Coordination.

Table 4 (cont'd). NCI Participation in Trans-NIH Program Announcements (PAs/PARs) in FY2019

Sorted by Date of Publication

Date of Publication	PA/PAR	Mechanism	Title	Division, Office, and Center	Issuing NIH-IC
08/05/2019	PAR19-334	SB1	SBIR/STTR Commercialization Readiness Pilot (CRP) Program Technical Assistance (SB1, R44) Clinical Trial Not Allowed	SBIRDC	NIH
09/12/2019	PAR19-375	R03	Small Research Grants for Analyses of Gabriella Miller Kids First Pediatric Research Data (R03 Clinical Trial Not Allowed)	DCTD	NIH
09/13/2019	PAR19-376	R21, R33	Mobile Health: Technology and Outcomes in Low and Middle Income Countries (R21/R33 - Clinical Trial Optional)	CGH	NIH
09/18/2019	PAR19-373	R01	Research on biopsychosocial factors of social connectedness and isolation on health, wellbeing, illness, and recovery (R01 Clinical Trials Not Allowed)	DCCPS	NIH
	PAR19-384	R01	Research on biopsychosocial factors of social connectedness and isolation on health, wellbeing, illness, and recovery (R01 Basic Experimental Studies with Humans Required)		

Source: Office of Referral, Review and Program Coordination.

Table 5. Applications Received for Referral by the NCI/DEA in FY2019

Sorted by Activity Code

Applications	Activity Code	Totals by Activity	Applications by NCAB			Total Costs Requested First Year
			Feb	June	Sept	
International Training Grants in Epidemiology (FIC)	D43	11	11	0	0	$3,291,106
NIH Director's New Innovator Awards	DP2	7	0	7	0	$10,500,000
Individual Predoctoral NRSA for M.D./Ph.D. Fellowships (ADAMHA)	F30	210	56	71	83	$0
Predoctoral Individual National Research Service Award	F31	548	172	188	188	$0
Postdoctoral Individual National Research Service Award	F32	223	67	83	73	$0
National Research Service Award for Senior Fellows	F33	1	0	0	1	$0
Pre-doc to Post-doc Transition Award	F99	70	0	0	70	$0
Research Scientist Development Award - Research & Training	K01	35	9	14	12	$4,848,306
Clinical Investigator Award	K08	190	53	64	73	$42,126,925
Physician Scientist Award (Program)	K12	4	4	0	0	$1,714,858
Career Transition Award	K22	140	46	60	34	$23,802,904
International Research Career Development Award	K43	4	0	4	0	$368,646
Career Transition Award	K99	272	65	98	109	$32,566,873
Research Program Projects	P01	95	34	35	26	$235,984,526
Exploratory Grants	P20	18	0	18	0	$4,971,503
Center Core Grants	P30	23	14	4	5	$88,571,659
Specialized Center	P50	79	16	25	38	$154,512,823
Research Project	R01	8,173	2,828	2,690	2,655	$4,500,314,564
Small Research Grants	R03	517	177	160	180	$41,542,316
Conferences	R13	104	48	24	32	$3,713,807
Academic Research Enhancement Awards (AREA)	R15	280	88	111	81	$119,040,541
Exploratory/Developmental Grants	R21	2,480	848	888	744	$557,478,302
Education Projects	R25	77	29	24	24	$23,518,448
Exploratory/Developmental Grants Phase II	R33	93	36	31	26	$44,714,429
Outstanding Investigator Award	R35	71	0	71	0	$69,179,546
Method to Extend Research in Time (MERIT) Award	R37	36	7	15	14	$20,063,996
Mentored Research Pathway in Residency	R38	5	0	0	5	$1,724,623
Small Business Technology Transfer (STTR) Grants - Phase I	R41	250	90	91	69	$62,577,878
Small Business Technology Transfer (STTR) Grants - Phase II	R42	36	15	12	9	$20,748,981
Small Business Innovation Research Grants (SBIR) - Phase I	R43	751	273	242	236	$185,276,862
Small Business Innovation Research Grants (SBIR) - Phase II	R44	301	115	87	99	$207,884,215
Research Specialist Award	R50	85	0	0	85	$12,408,465
High Priority, Short Term Project Award	R56	10	5	4	1	$616,565
Phase 1 Exploratory/Developmental Grant	R61	20	0	20	0	$15,530,863
Research Enhancement Award	SC1	21	16	0	5	$7,227,817

continued

Source: Office of Referral, Review and Program Coordination. IMPAC II. Includes NCI Primary and Secondary assigned applications. There were 414 withdrawn applications that have been subtracted from the total count.

Table 5 (cont'd). Applications Received for Referral by the NCI/DEA in FY2019

Sorted by Activity Code

Applications	Activity Code	Totals by Activity	Applications by NCAB			Total Costs Requested First Year
			Feb	June	Sept	
Pilot Research Project	SC2	23	21	0	2	$3,318,969
Intramural Clinical Scholar Research Award	SI2	4	4	0	0	$0
Institutional National Research Service Award	T32	83	27	30	26	$48,403,258
Research Project (Cooperative Agreements)	U01	662	148	175	339	$452,105,145
Research Program (Cooperative Agreement)	U19	1	1	0	0	$14,501,366
Resource-Related Research Project (Cooperative Agreements)	U24	57	18	31	8	$64,053,168
Resource-Related Research Multi-Component Projects and Centers Cooperative Agreements	U2C	6	0	6	0	$12,638,398
Small Business Innovation Research (SBIR) Cooperative Agreements - Phase II	U44	6	0	0	6	$6,916,065
Specialized Center (Cooperative Agreements)	U54	74	1	40	33	$131,167,456
Education Projects - Cooperative Agreements	UE5	10	0	0	10	$2,930,652
Clinical Research Cooperative Agreements - Single Project	UG1	67	0	67	0	$217,103,429
Phase 1 Exploratory/Developmental Cooperative Agreement	UG3	49	6	24	19	$29,678,626
Exploratory/Developmental Cooperative Agreement Phase I	UH2	12	5	3	4	$3,405,866
Exploratory/Developmental Cooperative Agreement Phase II	UH3	22	1	1	20	$14,538,242
Research Project with Complex Structure Cooperative Agreement	UM1	12	11	1	0	$17,361,847
Pre-application	X02	9	0	9	0	$0
Overall Totals		**16,337**	**5,365**	**5,528**	**5,444**	**$7,514,944,834**

Source: Office of Referral, Review and Program Coordination. IMPAC II. Includes NCI Primary and Secondary assigned applications. There were 414 withdrawn applications that have been subtracted from the total count.

Table 6. Grant and Cooperative Agreement Applications Reviewed by the NCI/DEA in FY2019

Sorted by Activity Code

Mechanism	Activity Code	Totals by Activity	Applications by NCAB			Total Costs Requested First Year
			Feb	June	Sept	
Predoctoral to Postdoctoral Transition Award	F99	70	0	0	70	$0
Research Scientist Development Award - Research & Training	K01	23	9	8	6	$3,121,117
Clinical Investigator Award	K08	181	49	62	70	$40,501,338
Physician Scientist Award (Program)	K12	4	4	0	0	$1,714,858
Career Transition Award	K22	140	46	60	34	$23,802,904
Career Transition Award	K99	243	55	86	102	$29,504,779
Research Program Projects	P01	95	34	35	26	$235,984,526
Exploratory Grants	P20	18	0	18	0	$4,971,503
Center Core Grants	P30	14	6	4	4	$71,615,135
Specialized Center	P50	79	16	25	38	$154,512,823
Research Project	R01	390	193	173	24	$234,707,124
Small Research Grants	R03	469	158	148	163	$36,538,765
Conferences	R13	71	33	19	19	$2,003,229
Exploratory/Developmental Grants	R21	1,427	479	512	436	$321,916,965
Education Projects	R25	73	29	24	20	$22,664,390
Exploratory/Developmental Grants Phase II	R33	89	35	30	24	$41,778,015
Outstanding Investigator Award	R35	71	0	71	0	$69,179,546
Mentored Research Pathway in Residency	R38	5	0	0	5	$1,724,623
Small Business Innovation Research Grants (SBIR) - Phase II	R44	28	28	0	0	$39,629,934
Research Specialist Award	R50	85	0	0	85	$12,408,465
High Priority, Short-Term Project Award	R56	1	0	1	0	$194,375
Intramural Clinical Scholar Research Award	SI2	4	4	0	0	$0
Institutional National Research Service Award	T32	65	23	25	17	$26,383,851
Research Project (Cooperative Agreements)	U01	493	108	98	287	$338,518,448
Resource-Related Research Project (Cooperative Agreements)	U24	44	17	24	3	$46,593,842
Specialized Center (Cooperative Agreements)	U54	40	0	8	32	$63,410,348
Education Projects - Cooperative Agreements	UE5	10	0	0	10	$2,930,652
Clinical Research Cooperative Agreements - Single Project	UG1	67	0	67	0	$217,103,429
Phase 1 Exploratory/Developmental Cooperative Agreement	UG3	24	6	10	8	$13,047,312
Exploratory/Developmental Cooperative Agreement Phase I	UH2	11	4	3	4	$3,189,419
Exploratory/Developmental Cooperative Agreement Phase II	UH3	2	1	1	0	$809,063
Research Project with Complex Structure Cooperative Agreement	UM1	12	11	1	0	$17,361,847
Pre-application	X02	9	0	9	0	$0
Overall Totals		**4,357**	**1,348**	**1,522**	**1,487**	**$2,077,822,625**

Source: Office of Referral, Review and Program Coordination. IMPAC II. Includes NCI Primary and Secondary assigned applications. There were 138 withdrawn applications that have been subtracted from the total count.

Table 7. Applications Reviewed by NCI IRG Subcommittees and Special Emphasis Panels (SEPs) in FY2019

NCI IRG Subcommittee	Types of Applications Reviewed	Totals by Committee	Total Costs Requested First Year
A - Cancer Centers	P30	13	$65,497,416
F - Institutional Training and Education	K12, R25, T32	107	$36,748,465
I - Transition to Independence	K22, K99	314	$44,128,968
J - Career Development	K01, K08, K22, K99, U01	214	$46,606,123
Totals - NCI IRG Subcommittees		**648**	**$192,980,972**
Total SEPs	F99, K01, K08, K22, K99, P01, P20, P30, P50, R01, R03, R13, R21, R25, R33, R35, R38, R44, R50, R56, SI2, T32, U01, U24, U54, UE5, UG1, UG3, UH2, UH3, UM1, X02	3,709	$1,884,841,653
Totals		**4,357**	**$2,077,822,625**

Source: Office of Referral, Review and Program Coordination. IMPAC II. Includes NCI Primary and Secondary assigned applications. There were 39 withdrawn applications that have been subtracted from the total count of the IRG Subcommittees, and 99 withdrawn applications that have been substracted from the total count of the SEPs.

Table 8. Summary of Investigator-Initiated P01 Applications Reviewed in FY2019

Sorted by NCAB Meeting

	Applications by Board			
Type of Application	February	June	September	FY Total
New	13	11	14	38
Resubmitted New	14	9	7	30
Renewal	3	7	4	14
Resubmitted renewal	1	7	1	9
Revisions	3	1	0	4
Total	**34**	**35**	**26**	**95**

Source: Office of Referral, Review and Program Coordination. IMPAC II. Includes NCI Primary and Secondary assigned applications.

Table 9. Summary of Unsolicited P01 Applications Reviewed in FY2019

Sorted by NCI Program Division

Type of Application	Number of Applications	Total Costs Requested First Year	Total Costs for Requested Period
Division of Cancer Biology (DCB)	33	$72,509,687	$367,285,574
Division of Cancer Control and Population Sciences (DCCPS)	14	$33,443,327	$164,441,490
Division of Cancer Prevention (DCP)	5	$17,523,772	$84,423,814
Division of Cancer Treatment and Diagnosis (DCTD)	43	$112,507,740	$574,227,172
Total	**95**	**$235,984,526**	**$1,190,378,049**

Source: Office of Referral, Review and Program Coordination. IMPAC II. Includes NCI Primary and Secondary assigned applications.

Table 10. Requests for Applications (RFAs) Reviewed by the NCI/DEA in FY2019

Title of Initiative	RFA Number	Activity Code	Applications by NCAB				Total Costs Requested First Year
			Totals	Feb	June	Sept	
HIV/AIDS and the Tumor Niche (R01)	CA17-030	R01	13	13	0	0	$8,647,388
Innovative Molecular and Cellular Analysis Technologies for Basic and Clinical Cancer Research (R21 - Clinical Trial Not Allowed)	CA18-002	R21	103	44	59	0	$24,376,193
Advanced Development and Validation of Emerging Molecular and Cellular Analysis Technologies for Basic and Clinical Cancer Research (R33 - Clinical Trial Not Allowed)	CA18-003	R33	58	31	27	0	$27,335,969
Innovative Biospecimen Science Technologies for Basic and Clinical Cancer Research (R21 - Clinical Trial Not Allowed)	CA18-004	R21	12	6	6	0	$3,059,432
Advanced Development and Validation of Emerging Biospecimen Science Technologies for Basic and Clinical Cancer Research (R33 - Clinical Trial Not Allowed)	CA18-005	R33	7	4	3	0	$2,914,366
Revisions for Incorporation of Novel NCI-Supported Technology to Accelerate Cancer Research (R01 Clinical Trials Optional)	CA18-006	R01	4	2	2	0	$994,248
Revisions for Incorporation of Novel NCI-Supported Technology to Accelerate Cancer Research (P01 Clinical Trials Optional)	CA18-009	P01	1	1	0	0	$244,145
Revisions for Incorporation of Novel NCI-Supported Technology to Accelerate Cancer Research (P50 Clinical Trials Optional)	CA18-010	P50	1	0	1	0	$242,186
SBIR Phase IIB Bridge Awards to Accelerate the Development of Cancer-Focused Technologies Toward Commercialization (R44 Clinical Trial Optional)	CA18-011	R44	28	28	0	0	$39,629,934
Limited Competition: AIDS and Cancer Specimen Resource (ACSR) (UM1 Clinical Trials Not Allowed)	CA18-012	UM1	1	0	1	0	$4,100,000
Investigation of the Transmission of Kaposi Sarcoma-associated Herpesvirus (KSHV) (R01 Clinical Trial Optional)	CA18-013	R01	13	13	0	0	$8,087,670
Investigation of the Transmission of Kaposi Sarcoma-Associated Herpesvirus (KSHV) (R21 Clinical Trial Not Allowed)	CA18-014	R21	5	5	0	0	$1,171,100
NCI Community Oncology Research Program (NCORP) Research Bases (UG1 Clinical Trial Required)	CA18-015	UG1	7	0	7	0	$86,300,547
NCI Community Oncology Research Program (NCORP) Community Sites (UG1 Clinical Trial Required)	CA18-016	UG1	37	0	37	0	$99,775,178
NCI Community Oncology Research Program (NCORP) Minority/Underserved Community Sites (UG1 Clinical Trial Required)	CA18-017	UG1	17	0	17	0	$25,314,550
Prevention of HPV-related Cancers in HIV-infected individuals: United States-Latin American-Caribbean Clinical Trials Network: Partnership Centers (U54 Clinical Trial Required)	CA18-018	U54	8	0	8	0	$16,720,055

continued

Source: Office of Referral, Review and Program Coordination. IMPAC II. Includes NCI Primary and Secondary assigned applications. There were 60 withdrawn applications that have been subtracted from the total count

Table 10 (cont'd). Requests for Applications (RFAs) Reviewed by the NCI/DEA in FY2019

Title of Initiative	RFA Number	Activity Code	Applications by NCAB				Total Costs Requested First Year
			Totals	Feb	June	Sept	
Research Answers to National Cancer Institute's (NCI) Provocative Questions (R01 Clinical Trial Optional)	CA18-019	R01	299	159	140	0	$180,963,694
Research Answers to National Cancer Institute's (NCI) Provocative Questions (R21 Clinical Trial Optional)	CA18-020	R21	166	77	89	0	$37,078,707
Revision Applications to National Cancer Institute's (NCI) Supported R01 Awards to Include Research on the NCI's Provocative Questions (R01 Clinical Trial Optional)	CA18-021	R01	9	5	4	0	$2,113,689
Revision Applications to National Cancer Institute's (NCI) Supported U01 Awards to Include Research on the NCI's Provocative Questions (U01 Clinical Trial Optional)	CA18-022	U01	1	1	0	0	$234,000
Revision Applications to National Cancer Institute's (NCI)-supported P01 Awards to Include Research on the NCI's Provocative Questions (P01 Clinical Trial Optional)	CA18-023	P01	2	2	0	0	$517,540
Revision Applications to National Cancer Institute's (NCI)-supported P50 Awards to Include Research on the NCI's Provocative Questions (P50 Clinical Trial Optional)	CA18-024	P50	3	1	2	0	$624,159
Collaborative Human Tissue Network (CHTN) (UM1 Clinical Trials Not Allowed)	CA18-025	UM1	11	11	0	0	$13,261,847
Improving the Reach and Quality of Cancer Care in Rural Populations (R01 Clinical Trial Required)	CA18-026	R01	27	0	27	0	$17,583,069
Improving Smoking Cessation Interventions among People Living with HIV (R01 Clinical Trial Optional)	CA18-027	R01	23	0	0	23	$16,064,941
Improving Smoking Cessation Interventions among People Living with HIV (R21 Clinical Trial Optional)	CA18-028	R21	13	0	0	13	$2,917,124
Cancer Prevention Clinical Trials Network (CP-CTNet): CP-CTNet Sites (UG1 Clinical Trial Required)	CA18-029	UG1	6	0	6	0	$5,713,154
Cancer Prevention Clinical Trials Network (CP-CTNet): Data Management, Auditing, and Coordinating Center (DMACC) (U24 Clinical Trials Required)	CA18-030	U24	6	0	6	0	$11,802,835
Communication and Decision Making for Individuals with Inherited Cancer Syndromes (U01 Clinical Trial Optional) - Moonshot	CA19-001	U01	10	0	0	10	$9,226,015
The NCI Predoctoral to Postdoctoral Fellow Transition Award (F99/K00)	CA19-002	F99	70	0	0	70	$0
Implementation Science for Cancer Control: Developing Centers (P50 Clinical Trial Optional) - Moonshot	CA19-005	P50	12	0	0	12	$11,402,885
Implementation Science for Cancer Control: Advanced Centers (P50 Clinical Trial Optional) - Moonshot	CA19-006	P50	14	0	0	14	$26,695,014
NCI Awardee Skills Development Consortium: Research Education Short Courses (UE5 Clinical Trial Not Allowed)	CA19-010	UE5	10	0	0	10	$2,930,652
NCI Awardee Skills Development Consortium: Program Logistics and Evaluation Coordinating Center (U24 Clinical Trial Not Allowed)	CA19-011	U24	3	0	0	3	$2,101,374
Immuno-Oncology Translation Network (IOTN): Cancer Immunoprevention Research Projects (UG3/UH3) - Moonshot	CA19-012	UG3	5	0	0	5	$3,757,700

continued

Source: Office of Referral, Review and Program Coordination. IMPAC II. Includes NCI Primary and Secondary assigned applications. There were 60 withdrawn applications that have been subtracted from the total count

Table 10 (cont'd). Requests for Applications (RFAs) Reviewed by the NCI/DEA in FY2019

Title of Initiative	RFA Number	Activity Code	Applications by NCAB				Total Costs Requested First Year
			Totals	Feb	June	Sept	
Immuno-Oncology Translation Network (IOTN): Immuno-engineering to Improve Immunotherapy (i3) Centers (U54 Clinical Trial Not Allowed) - Moonshot	CA19-013	U54	19	0	0	19	$27,320,586
Immuno-Oncology Translation Network (IOTN): Cancer Immunoprevention Research Projects (U01 Clinical Trial Not Allowed) - Moonshot	CA19-014	U01	14	0	0	14	$10,720,762
Immuno-Oncology Translation Network (IOTN): Cancer Immunotherapy Research Projects (U01 Clinical Trial Not Allowed) - Moonshot	CA19-015	U01	81	0	0	81	$62,146,767
Approaches to Identify and Care for Individuals with Inherited Cancer Syndromes (U01 Clinical Trial Required) - Moonshot	CA19-017	U01	19	0	0	19	$20,342,071
Innovative Molecular and Cellular Analysis Technologies for Basic and Clinical Cancer Research (R21 Clinical Trials Not Allowed)	CA19-019	R21	43	0	0	43	$9,658,048
Advanced Development and Validation of Emerging Molecular and Cellular Analysis Technologies for Basic and Clinical Cancer Research (R33 Clinical Trials Not Allowed)	CA19-020	R33	22	0	0	22	$10,552,584
Innovative Biospecimen Science Technologies for Basic and Clinical Cancer Research (R21 Clinical Trials Not Allowed)	CA19-021	R21	6	0	0	6	$1,456,724
Advanced Development and Validation of Emerging Biospecimen Science Technologies for Basic and Clinical Cancer Research (R33 Clinical Trials Not Allowed)	CA19-022	R33	2	0	0	2	$975,096
Revisions for Incorporation of Novel NCI-Supported Technology to Accelerate Cancer Research (R01 Clinical Trial Optional)	CA19-023	R01	1	0	0	1	$252,425
Revisions for Incorporation of Novel NCI-Supported Technology to Accelerate Cancer Research (U01 Clinical Trial Optional)	CA19-024	U01	2	0	0	2	$522,458
NCI Pathway to Independence Award for Outstanding Early Stage Postdoctoral Researchers (K99/R00 - Independent Clinical Trial Not Allowed)	CA19-029	K99	47	0	0	47	$5,671,334
NCI Pathway to Independence Award for Outstanding Early Stage Postdoctoral Researchers (K99/R00 - Independent Clinical Trial Required)	CA19-030	K99	4	0	0	4	$509,828
Improving Outcomes for Pediatric, Adolescent and Young Adult Cancer Survivors (U01 Clinical Trial Required)	CA19-033	U01	33	0	0	33	$23,665,958
Advancing Cancer Immunotherapy by Mitigating Immune-Related Adverse Events (irAEs) (U01 Clinical Trial Not Allowed) - Moonshot	CA19-044	U01	58	0	0	58	$34,626,607
Stimulating Access to Research in Residency (StARR) (R38)	HL18-023	R38	5	0	0	5	$1,724,623
Totals			**1,361**	**403**	**442**	**516**	**$904,047,231**

Source: Office of Referral, Review and Program Coordination. IMPAC II. Includes NCI Primary and Secondary assigned applications. There were 60 withdrawn applications that have been subtracted from the total count

Table 11. Program Announcements (PAs) Reviewed by the NCI/DEA in FY2019

Title of Initiative	PA/PAR Number	Activity Code	Applications by NCAB				Total Costs Requested First Year
			Totals	Feb	June	Sept	
Mentored Clinical Scientist Research Career Development Award (Parent K08 - Independent Clinical Trial Required)	PA18-372	K08	20	9	11	0	$4,500,446
Mentored Clinical Scientist Research Career Development Award (Parent K08 - No Independent Clinical Trials)	PA18-373	K08	78	32	46	0	$17,328,546
NIH Pathway to Independence Award (Parent K99/R00 - Clinical Trial Required)	PA18-397	K99	6	2	4	0	$904,696
NIH Pathway to Independence Award (Parent K99/R00 - Independent Clinical Trial Not Allowed)	PA18-398	K99	135	53	82	0	$16,202,288
Ruth L. Kirschstein National Research Service Award (NRSA) Institutional Research Training Grant (Parent T32)	PA18-403	T32	65	23	25	17	$26,383,851
NIH Support for Conferences and Scientific Meetings (Parent R13 Clinical Trial Not Allowed)	PA18-648	R13	71	33	19	19	$2,003,229
Mentored Clinical Scientist Research Career Development Award (Parent K08 Independent Clinical Trial Required)	PA19-116	K08	21	0	0	21	$4,798,134
Mentored Clinical Scientist Research Career Development Award (Parent K08 Independent Clinical Trial Not Allowed)	PA19-117	K08	39	0	0	39	$8,576,203
NIH Pathway to Independence Award (Parent K99/R00 - Independent Clinical Trial Required)	PA19-129	K99	3	0	0	3	$418,397
NIH Pathway to Independence Award (Parent K99/R00 - Independent Clinical Trial Not Allowed)	PA19-130	K99	48	0	0	48	$5,798,236
Utilizing the PLCO Biospecimens Resource to Bridge Gaps in Cancer Etiology and Early Detection Research (U01)	PAR15-297	U01	8	0	8	0	$4,985,414
Translational Studies on Adducts for Cancer Risk Identification and Prevention (U01)	PAR15-307	U01	1	1	0	0	$583,326
Advanced Development of Informatics Technologies for Cancer Research and Management (U24)	PAR15-331	U24	27	12	15	0	$25,606,170
Early-Stage Development of Informatics Technologies for Cancer Research and Management (U01)	PAR15-332	U01	52	19	33	0	$24,660,436
Sustained Support for Informatics Resources for Cancer Research and Management (U24)	PAR15-333	U24	3	3	0	0	$3,044,487
Development of Innovative Informatics Methods and Algorithms for Cancer Research and Management (R21)	PAR15-334	R21	70	33	37	0	$15,586,065
Small-Cell Lung Cancer (SCLC) Consortium: Therapeutic Development and Mechanisms of Resistance (U01)	PAR16-049	U01	5	0	5	0	$2,770,160
Emerging Questions in Cancer Systems Biology (U01)	PAR16-131	U01	67	39	28	0	$49,327,276
Cancer Research Education Grants Program to Promote Diversity — Research Experiences (R25)	PAR16-138	R25	6	6	0	0	$1,071,219
Cancer Research Education Grants Program to Promote Diversity — Courses for Skills Development (R25)	PAR16-139	R25	1	1	0	0	$307,668

continued

Source: Office of Referral, Review and Program Coordination. IMPAC II. Includes NCI Primary and Secondary assigned applications. There were 78 withdrawn applications that have been subtracted from the total count.

Table 11 (cont'd). Program Announcements (PAs) Reviewed by the NCI/DEA in FY2019

Title of Initiative	PA/PAR Number	Activity Code	Applications by NCAB				Total Costs Requested First Year
			Totals	Feb	June	Sept	
Integrating Biospecimen Science into Clinical Assay Development (U01)	PAR16-166	U01	5	5	0	0	$2,025,992
NCI Clinical and Translational Exploratory/Developmental Studies (R21)	PAR16-176	R21	1	1	0	0	$201,875
Biological Comparisons in Patient-Derived Models of Cancer (U01)	PAR16-344	U01	17	0	9	8	$15,077,435
New Informatics Tools and Methods to Enhance U.S. Cancer Surveillance and Research (UG3/UH3)	PAR16-349	UG3	4	0	3	1	$2,010,249
Oncology Co-Clinical Imaging Research Resources to Encourage Consensus on Quantitative Imaging Methods and Precision Medicine (U24)	PAR16-385	U24	2	2	0	0	$1,585,921
National Cancer Institute Youth Enjoy Science Research Education Program (R25)	PAR17-059	R25	33	12	11	10	$13,341,977
Cancer Center Support Grants (CCSGs) for NCI-designated Cancer Centers (P30)	PAR17-095	P30	14	6	4	4	$71,615,135
Alliance of Glycobiologists for Cancer Research: Translational Tumor Glycomics Laboratories (U01)	PAR17-206	U01	9	7	0	2	$7,104,404
Alliance of Glycobiologists for Cancer Research: Biological Tumor Glycomics Laboratories (U01)	PAR17-207	U01	11	4	0	7	$7,862,709
Core Infrastructure and Methodological Research for Cancer Epidemiology Cohorts (U01)	PAR17-233	U01	8	1	5	2	$11,105,148
NCI Clinical and Translational Exploratory/Developmental Studies (R21 Clinical Trial Optional)	PAR18-020	R21	1,008	313	321	374	$226,411,697
NCI Clinical and Translational Exploratory/Developmental Studies (R21 Clinical Trial Optional)	PAR18-020	R56	1	0	1	0	$194,375
NCI Small Grants Program for Cancer Research (NCI Omnibus R03 Clinical Trial Optional)	PAR18-021	R03	469	158	148	163	$36,538,765
Quantitative Imaging Tools and Methods for Cancer Therapy Response Assessment (UG3/UH3 Clinical Trial Optional)	PAR18-248	UG3	15	6	7	2	$7,279,363
Quantitative Imaging Tools and Methods for Cancer Response Assessment (U01 Clinical Trial Optional)	PAR18-249	U01	7	5	2	0	$5,459,772
National Cancer Institute Program Project Applications (P01 Clinical Trial Optional)	PAR18-290	P01	92	31	35	26	$235,222,841
Paul Calabresi Career Development Award for Clinical Oncology (K12 Clinical Trial Optional)	PAR18-292	K12	4	4	0	0	$1,714,858
Assay Validation of High Quality Markers for Clinical Studies in Cancer (UH3 - Clinical Trials Not Allowed)	PAR18-310	UH3	2	1	1	0	$809,063
Specialized Programs of Research Excellence (SPOREs) in Human Cancers for Years 2018, 2019, and 2020 (P50)	PAR18-313	P50	49	15	22	12	$115,548,579
Assay Validation of High Quality Markers for Clinical Studies in Cancer (UH2/UH3 - Clinical Trials Not Allowed)	PAR18-317	UH2	11	4	3	4	$3,189,419

continued

Source: Office of Referral, Review and Program Coordination. IMPAC II. Includes NCI Primary and Secondary assigned applications. There were 78 withdrawn applications that have been subtracted from the total count.

Table 11 (cont'd). Program Announcements (PAs) Reviewed by the NCI/DEA in FY2019

Title of Initiative	PA/PAR Number	Activity Code	Applications by NCAB				Total Costs Requested First Year
			Totals	Feb	June	Sept	
NCI Mentored Clinical Scientist Research Career Development Award to Promote Diversity (K08 - Clinical Trials Required)	PAR18-336	K08	11	4	2	5	$2,639,497
NCI Mentored Clinical Scientist Research Career Development Award to Promote Diversity (K08 - No Independent Clinical Trials)	PAR18-337	K08	12	4	3	5	$2,658,512
NCI Mentored Research Scientist Development Award to Promote Diversity (K01 -Independent Clinical Trial Not Allowed)	PAR18-364	K01	18	6	7	5	$2,436,898
NCI Mentored Research Scientist Development Award to Promote Diversity (Parent K01 - Clinical Trial Required)	PAR18-365	K01	5	3	1	1	$684,219
NCI Transition Career Development Award to Promote Diversity (K22 - No Clinical Trials)	PAR18-366	K22	12	4	5	3	$2,024,282
NCI Transition Career Development Award to Promote Diversity (K22 Clinical Trial Required)	PAR18-367	K22	4	2	0	2	$717,397
The NCI Transition Career Development Award (K22 Independent Clinical Trial Required)	PAR18-466	K22	4	2	2	0	$692,398
The NCI Transition Career Development Award (K22 - Independent Clinical Trial Not Allowed)	PAR18-467	K22	120	38	53	29	$20,368,827
Cancer Research Education Grants Program — Curriculum or Methods Development (R25)	PAR18-476	R25	6	2	2	2	$920,288
Cancer Research Education Grants Program — Courses for Skills Development (R25)	PAR18-477	R25	14	5	3	6	$3,949,455
Cancer Research Education Grants Program — Research Experiences (R25)	PAR18-478	R25	13	3	8	2	$3,073,783
Partnership for Aging and Cancer Research (U01 - Clinical Trial Not Allowed)	PAR18-552	U01	21	21	0	0	$2,538,431
Traceback Testing: Increasing Identification and Genetic Counseling of Mutation Carriers through Family-based Outreach (U01 Clinical Trial Optional)	PAR18-616	U01	14	5	4	5	$10,743,681
Lasker Clinical Research Scholars Program (Si2/R00 Clinical Trial Optional)	PAR18-740	SI2	4	4	0	0	$0
Comprehensive Partnerships to Advance Cancer Health Equity (CPACHE) (Collaborative U54 Clinical Trial Optional)	PAR18-767	U54	13	0	0	13	$19,369,707
Oncology Co-Clinical Imaging Research Resources to Encourage Consensus on Quantitative Imaging Methods and Precision Medicine (U24 - Clinical Trial Optional)	PAR18-841	U24	3	0	3	0	$2,453,055
NCI Outstanding Investigator Award (R35 Clinical Trial Not Allowed)	PAR18-880	R35	71	0	71	0	$69,179,546
NCI Research Specialist (Core-based Scientist) Award (R50 Clinical Trial Not Allowed)	PAR18-887	R50	18	0	0	18	$2,938,122

continued

Source: Office of Referral, Review and Program Coordination. IMPAC II. Includes NCI Primary and Secondary assigned applications. There were 78 withdrawn applications that have been subtracted from the total count.

Table 11 (cont'd). Program Announcements (PAs) Reviewed by the NCI/DEA in FY2019

Title of Initiative	PA/PAR Number	Activity Code	Applications by NCAB				Total Costs Requested First Year
			Totals	Feb	June	Sept	
NCI Research Specialist (Laboratory-based Scientist) Award (R50 Clinical Trial Not Allowed)	PAR18-888	R50	67	0	0	67	$9,470,343
Feasibility Studies to Build Collaborative Partnerships in Cancer Research (P20 Clinical Trial Not Allowed)	PAR18-911	P20	18	0	18	0	$4,971,503
Utilizing the PLCO Biospecimens Resource to Bridge Gaps in Cancer Etiology and Early Detection Research (U01 Clinical Trial Not Allowed)	PAR18-913	U01	4	0	0	4	$2,453,834
Integrating Biospecimen Science Approaches into Clinical Assay Development (U01 Clinical Trial Not Allowed)	PAR18-947	U01	11	0	4	7	$4,410,547
Pre-application: Opportunities for Collaborative Research at the NIH Clinical Center (X02 Clinical Trial Optional)	PAR18-950	X02	9	0	9	0	$0
Opportunities for Collaborative Research at the NIH Clinical Center (U01 Clinical Trial Optional)	PAR18-951	U01	11	0	0	11	$7,765,437
Physical Sciences-Oncology Network (PS-ON): Physical Sciences-Oncology Projects (PS-OP) (U01 Clinical Trial Optional)	PAR19-101	U01	24	0	0	24	$18,159,808
Totals			**2,995**	**944**	**1,080**	**971**	**$1,173,775,394**

Source: Office of Referral, Review and Program Coordination. IMPAC II. Includes NCI Primary and Secondary assigned applications. There were 78 withdrawn applications that have been subtracted from the total count.

Table 12. SBIR Topics and Requests for Proposals (RFPs) Reviewed by the NCI/DEA in FY2019*

Announcement Topic Number	Announcement Title	Review Round	No. of Proposals
Topic 382 Phase I & Fast Track	Integrated Subcellular Microscopy and 'Omics in Cancer Cell Biology	May-19	9
Topic 383 Phase I & Fast Track	Smart, Multi-Core Biopsy Needle	May-19	5
Topic 384 Phase I & Fast Track	Digital Healthcare Platform to Reduce Financial Hardship for Cancer Patients	May-19	13
Topic 385 Phase I & Fast Track	Leveraging Connected Health Technologies to Address and Improve Health Outcomes of Long-Term Cancer Survivors	May-19	15
Topic 386 Phase I & Fast Track	Novel Approaches for Local Delivery of Chemopreventive Agents	May-19	15
Topic 387 Phase I & Fast Track	Multiplexed Preclinical Tools for Longitudinal Characterization of Immunological Status in Tumor and its Microenvironment	May-19	3
Topic 388 Phase I & Fast Track	In vitro Diagnostic for the Liver Flukes Opisthorchis viverrini and Clonorchis sinensis	May-19	5
Topic 389 Phase I & Fast Track	Development of Artificial Intelligence (AI) Tools to Understand and Duplicate Experts' Radiation Therapy Planning for Prostate Cancer	May-19	7
Topic 390 Phase I & Fast Track	Clonogenic High-Throughput Assay for Screening Anti-Cancer Agents and Radiation Modulators	May-19	3
Topic 391 Phase I & Fast Track	Drugs or Devices to Exploit the Immune Response Generated by Radiation Therapy	May-19	10
Topic 392 Phase I & Fast Track	Clinical Trials of Systemic Targeted Radionuclide Therapies (Fast Track Only)	May-19	6
Topic 393 Phase I & Fast Track	Sensing Tools to Measure Biological Response to Radiotherapy	May-19	4
Topic 394 Phase I & Fast Track	Combinatory Treatment Modalities Utilizing Radiation to Locally Activate or Release Systemically Delivered Therapeutics	May-19	6
Topic 395 Phase I & Fast Track	Targeted Therapy for Cancer- and Cancer Therapy-Related Cachexia	May-19	2
Topic 396 Phase I & Fast Track	Imaging for Cancer Immunotherapies	May-19	6
Phase II Proposals From Earlier Phase I Awards			
Topic 343 Phase II	An Electronic Platform for Cognitive Assessment in Cancer Patients	May-19	1
Topic 344 & 359 Phase II	Technologies for Differential Isolation of Exosomes and Oncosomes	May-19	2
Topic 345 Phase II	Predictive Biomarkers of Adverse Reactions to Radiation Treatment	May-19	1
Topic 346 / 368 Phase II	Molecularly Targeted Radiation Therapy for Cancer Treatment	May-19	3
Topic 351 Phase II	Modulating the Microbiome to Improve Efficacy of Cancer Therapeutics	May-19	1
Topic 353 Phase II	Cell-Free Nucleic Acid-Based Assay Development for Cancer Diagnosis	May-19	1

continued

* NCI reviewed a total of 530 proposals. The proposals were in response to SBIR Contract Solicitations — Phase I and Fast Track (109), Direct to Phase II (30), R&D (21), and Loan Repayment (370).

Table 12 (cont'd). SBIR Topics and Requests for Proposals (RFPs) Reviewed by the NCI/DEA in FY2019*

Announcement Topic Number	Announcement Title	Review Round	No. of Proposals
Topic 354 Phase II	Companion Diagnostics for Cancer Immunotherapies	May-19	2
Topic 355 Phase II	Cell and Animal-Based Models to Advance Cancer Health Disparity Research	May-19	3
Topic 356 Phase II	Tools and Technologies for Monitoring RNA	May-19	3
Topic 357 Phase II	Innovative Tools for Interrogating Tumor Microenvironment Dynamics	May-19	1
Topic 360 Phase II	Manufacturing Innovation for the Production of Cell-Based Cancer Immunotherapies	May-19	2
Topic 362 Phase II	Informatics Tools to Measure Cancer Care Coordination	May-19	1
Topic 363 Phase II	Connecting Cancer Caregivers to Care Teams: Digital Platforms to Support Informal Cancer Caregiving	May-19	1
Topic 364 Phase II	Methods and Software for Integration of Cancer Metabolomic Data with Other -Omic and Imaging Data	May-19	3
Topic 365 Phase II	Imaging Informatics Tools and Resources for Clinical Cancer Research	May-19	2
Topic 366 Phase II	Clonogenic High-Throughput Assay for Screening Anti-Cancer Agents and Radiation Modulators	May-19	2
Topic 369 Phase II	Development of Pediatric Cancer Drug Delivery Devices	May-19	1
	Other Solicitations Reviewed in DEA		
N01CN77019-18	PREVENT Cancer Preclinical Drug Development Program	Jan-19	13
N01CN87006-18	PREVENT Cancer Preclinical Drug Development Program: cGMP Production of Vaccines and Biologicals for Cancer Prevention	May-19	4
N01CN87006-18	PREVENT Cancer Preclinical Drug Development Program: cGMP Production of Vaccines and Biologicals for Cancer Prevention	Oct-19	4
L30 (OD-15-122)	Loan Repayment Program for Clinical Researchers	Oct-19	281
L40 (OD-15-121)	Loan Repayment Program for Pediatric Researchers	Oct-19	89
TOTAL			**530**

* NCI reviewed a total of 530 proposals. The proposals were in response to SBIR Contract Solicitations — Phase I and Fast Track (109), Direct to Phase II (30), R&D (21), and Loan Repayment (370).

Table 13. Summary of NCI Grant Awards by Mechanism in FY2019*

Fund Type: Appropriated				% of NCI Total Grants		Fiscal Year: 2019		
Cost Centers Mechanisms	Awards Count	Awards Dollars	Average Cost	Number	Dollars	Competing Requested	Competing Awarded	Success Rate
Research Project Grants								
Traditional Research Grants — R01/RL1	2,491	1,084,091,187	435,203	43.61%	31.53%	5,877	129	2.19%
Traditional Research Grants — R01/RL1 - Moonshot	14	11,931,784	852,270	0.25%	0.35%	0	0	0.0%
Program Projects — P01	90	169,969,654	1,888,552	1.58%	4.94%	92	25	27.17%
Program Projects — P01 - Moonshot	4	8,955,350	2,238,838	0.07%	0.26%	0	0	0.0%
Small Grants — R03	68	5,603,750	82,408	1.19%	0.16%	505	7	1.39%
Exploratory/Developmental Research — R21	219	39,982,757	182,570	3.83%	1.16%	1,861	30	1.61%
Exploratory/Developmental Research — R21 - Moonshot	0	36,728	36,728	0.0%	0.0%	0	0	0.0%
Merit Awards — R37	73	31,694,386	434,170	1.28%	0.92%	35	9	25.71%
Phased Innovation Grant (Phase 2) — R33 - Moonshot	0	218,834	218,834	0.0%	0.01%	0	0	0.0%
Bridge Award — R56	2	689,227	344,614	0.04%	0.02%	1	1	100.0%
Pathway to Independence — R00/Si2	109	26,260,325	240,920	1.91%	0.76%	0	0	0.0%
Exploratory/Development Coop. Agreements — UH2/UH3	19	5,899,940	310,523	0.33%	0.17%	20	6	30.0%
Exploratory/Developmental Grants — UG3	4	1,653,552	413,388	0.07%	0.05%	20	3	15.0%
NIH Director Pioneer Award (NDPA) — DP1	1	1,161,090	1,161,090	0.02%	0.03%	0	0	0.0%
NIH Director New Innovator Awards — DP2	0	466,089	466,089	0.0%	0.01%	0	0	0.0%
Outstanding Investigators — R35	142	129,231,598	910,082	2.49%	3.76%	71	17	23.94%
NIH Director's Early Independence Awards — DP5	3	1,312,141	437,380	0.05%	0.04%	0	0	0.0%
Academic Research Enhancement Awards (AREA) — R15	0	169,124	169,124	0.0%	0.0%	233	0	0.0%
Multi-Component Research Project Coop. Agreements — UM1/RM1	2	5,338,915	2,669,458	0.04%	0.16%	1	1	100.0%
Research Specialist Award — R50	81	13,319,173	164,434	1.42%	0.39%	85	19	22.35%
Cooperative Agreements — U01/U19	209	147,064,855	703,660	3.66%	4.28%	295	48	16.27%
Cooperative Agreements — U01/U19 - Moonshot	1	2,787,185	2,787,185	0.02%	0.08%	0	0	0.0%
Request for Applications	294	112,873,415	383,923	5.15%	3.28%	822	94	11.44%
Request for Applications - Moonshot	0	173,496	173,496	0.0%	0.01%	0	0	0.0%
Cooperative Agreements - RFA — U01/U19	113	143,609,098	1,270,877	1.98%	4.18%	13	7	53.85%

continued

* A grant award count of zero showing a dollar amount represents either administrative supplements to existing grants, which are not factored into the grant count but are factored into the average cost of an award, or co-funded grants, which are not factored into the grant count for the NCI but are factored into the average cost of an award.

Source: Office of Extramural Finance and Information Analysis.

Table 13 (cont'd). Summary of NCI Grant Awards by Mechanism in FY2019*

Fund Type: Appropriated				% of NCI Total Grants		Fiscal Year: 2019		
Cost Centers Mechanisms	Awards Count	Awards Dollars	Average Cost	Number	Dollars	Competing Requested	Competing Awarded	Success Rate
Cooperative Agreements - RFA — U01/U19 UM1 - Moonshot	35	72,134,942	2,060,998	0.61%	2.1%	177	17	9.6%
Small Business Innovative Research — R43/R44	150	93,891,007	625,940	2.63%	2.73%	847	77	9.09%
Small Business Innovative Research — R43/R44 - Moonshot	1	381,598	381,598	0.02%	0.01%	1	1	100.0%
Small Business Technology Transfer — R41/R42	27	16,319,174	604,414	0.47%	0.47%	230	15	6.52%
Small Business Technology Transfer — R41/R42 - Moonshot	2	1,825,329	912,665	0.04%	0.05%	0	0	0.0%
Program Evaluation — R01	0	85,543,161	85,543,161	0.0%	2.49%	0	0	0.0%
Subtotal Research Project Grants	**4,154**	**2,214,588,864**	**533,122**	**72.72%**	**64.4%**	**11,186**	**506**	**4.52%**
Other Research								
Clinical Cooperative Groups — U10/UG1	104	283,994,911	2,730,720	1.82%	8.26%	128	104	81.25%
Clinical Cooperative Groups — CCCT	0	6,142,207	6,142,207	0.0%	0.18%	0	0	0.0%
Cooperative Conference Grants — U13	1	5,000	5,000	0.02%	0.0%	0	0	0.0%
Conference Grants — R13/U13	59	809,205	13,715	1.03%	0.02%	75	53	70.67%
International Research Training Grants Conference — D43/U2R	0	1,260,119	1,260,119	0.0%	0.04%	0	0	0.0%
Cancer Education Awards — R25	77	20,459,296	265,705	1.35%	0.59%	70	20	28.57%
Research/Resource Grant — R24/U24/U2C	78	91,098,697	1,167,932	1.37%	2.65%	43	8	18.6%
Research/Resource Grant — R24/U24/U2C U24 - Moonshot	6	13,510,468	2,251,745	0.11%	0.39%	0	0	0.0%
Research Enhancement Award — SC1	0	0	0	0.0%	0.0%	2	0	0.0%
Pilot Research Project — SC2	0	1,839,210	1,839,210	0.0%	0.05%	0	0	0.0%
Minority Biomedical Research Support — S06	0	96,830	96,830	0.0%	0.0%	0	0	0.0%
Predoctoral to Postdoctoral Fellow Transition Award — F99	46	1,827,785	39,734	0.81%	0.05%	70	26	37.14%
Research Pathway in Residency — R38	1	358,020	358,020	0.02%	0.01%	0	0	0.0%
Subtotal Other Research	**372**	**421,401,748**	**1,132,800**	**6.51%**	**12.25%**	**388**	**211**	**54.38%**
Centers								
Centers — P20	18	8,013,991	445,222	0.32%	0.23%	18	4	22.22%
Centers — P30	71	320,016,177	4,507,270	1.24%	9.31%	16	16	100.0%
Centers/Planning — P20/P30 - Moonshot	0	7,708,782	7,708,782	0.0%	0.22%	0	0	0.0%

continued

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Source: Office of Extramural Finance and Information Analysis.

Table 13 (cont'd). Summary of NCI Grant Awards by Mechanism in FY2019*

Fund Type: Appropriated				% of NCI Total Grants		Fiscal Year: 2019		
Cost Centers Mechanisms	Awards Count	Awards Dollars	Average Cost	Number	Dollars	Competing Requested	Competing Awarded	Success Rate
Centers — CCCT	0	1,342,762	1,342,762	0.0%	0.04%	0	0	0.0%
Spore Grants — P50	52	110,671,817	2,128,304	0.91%	3.22%	47	17	36.17%
Other P50/P20	0	75,000	75,000	0.0%	0.0%	0	0	0.0%
Specialized Center (Cooperative Agreement) — U54/U41	85	118,758,487	1,397,159	1.49%	3.45%	24	9	37.5%
Specialized Center (Cooperative Agreement) — U54/U41 - Moonshot	19	81,472,077	4,288,004	0.33%	2.37%	29	10	34.48%
Other P50/P20 - Moonshot	6	7,423,937	1,237,323	0.11%	0.22%	26	6	23.08%
Specialized Center (Cooperative Agreement) - BD2K	0	483,349	483,349	0.0%	0.01%	0	0	0.0%
Subtotal Centers	**251**	**655,966,379**	**2,613,412**	**4.39%**	**19.08%**	**160**	**62**	**38.75%**
NRSA								
NRSA Institution — T32/T35	147	52,430,172	356,668	2.57%	1.52%	55	8	14.55%
NRSA Institution — BD2K Awards	3	642,144	214,048	0.05%	0.02%	0	0	0.0%
NRSA Fellowships — F31/F32	379	16,212,342	42,777	6.64%	0.47%	826	30	3.63%
Subtotal NRSA	**529**	**69,284,658**	**130,973**	**9.26%**	**2.01%**	**881**	**38**	**4.31%**
Careers								
Mentored Clinical Scientist — K08	124	24,372,496	196,552	2.17%	0.71%	146	24	16.44%
Preventive Oncology Award — K07	64	9,916,207	154,941	1.12%	0.29%	0	0	0.0%
Mentored Career Award — K12	20	15,599,263	779,963	0.35%	0.45%	4	2	50.0%
Mentored Rsch Scient Devel Awds/ Mentrd Career Dev.../Temin — K01/ Intl.Career — K43	33	5,579,406	169,073	0.58%	0.16%	24	2	8.33%
Clinical Research Track — K22	52	9,353,712	179,879	0.91%	0.27%	141	14	9.93%
Mentored Patient-Oriented Research Career Dev A — K23	10	1,688,518	168,852	0.18%	0.05%	0	0	0.0%
Mid-Career Investigator in Patient-Oriented Res A — K24	9	1,512,698	168,078	0.16%	0.04%	0	0	0.0%
Mentored Quantitative Resch. Career Dev. Awd. — K25	4	569,778	142,445	0.07%	0.02%	0	0	0.0%
Established Invest. Award in Ca Prevention & Control — K05	2	172,247	86,124	0.04%	0.01%	0	0	0.0%
Postdoctoral Fellow Awards — K00	52	4,480,191	86,158	0.91%	0.13%	0	0	0.0%
Pathway to Independence — K99	36	4,289,203	119,145	0.63%	0.12%	186	11	5.91%
Subtotal Careers	**406**	**77,533,719**	**190,970**	**7.11%**	**2.25%**	**501**	**53**	**10.58%**
Total:	**5,712**	**3,438,775,368**	**602,027**	**100.0%**	**100.0%**	**13,116**	**870**	**6.63%**

* A grant award count of zero showing a dollar amount represents either administrative supplements to existing grants, which are not factored into the grant count but are factored into the average cost of an award, or co-funded grants, which are not factored into the grant count for the NCI but are factored into the average cost of an award.

Source: Office of Extramural Finance and Information Analysis.

Table 14. Average Total Cost*† and Number of Research Project Grant Awards by Division, Office, Center, and Mechanism From FY2015 – FY2019

Budget Mechanism/ Division	FY 2015		FY 2016		FY 2017		FY 2018		FY 2019		Percent Change 2015 vs 2019	
	No.	Avg. Cost	No.	Avg. Cost	No.	Avg. Cost	No.	Avg. Cost	No.	Avg. Cost	No.	Avg. Cost
R01 Average Cost of Award												
NCI Overall	2,949	398	2,883	414	2,927	430	2,964	444	2,505	438	-15.06%	10.05%
DCB	0	0	0	0	6	761	6	967	6	716	100.0%	100.0%
DCB	1,375	351	1,324	370	1,307	381	1,291	395	1,076	389	-21.7%	10.7%
DCP	0	0	0	0	1	940	1	982	1	982	100.0%	100.0%
DCP	199	442	194	452	194	479	210	495	179	492	-10.1%	11.4%
DCTD	0	0	0	0	2	1,239	2	1,153	2	1,025	100.0%	100.0%
DCTD	1,014	390	1,024	407	1,079	422	1,102	435	927	428	-8.6%	9.8%
DCCPS	0	0	0	0	5	613	5	564	5	921	100.0%	100.0%
DCCPS	354	556	336	565	328	578	339	573	301	546	-15.0%	-1.7%
OD (CRCHD, OCAM, CSSI, CCT, OHAM, etc.)	0	0	0	0	0	0	0	229	0	0	0.0%	0.0%
OD (CRCHD, OCAM, CSSI, CCT, OHAM, etc.)	7	1,703	5	2,043	5	2,301	8	1,909	8	2,034	14.3%	19.5%
P01 Average Cost of Award												
NCI Overall	100	1,938	94	1,844	90	1,886	85	1,947	94	1,903	-6.0%	-1.81%
DCB	0	0	0	0	0	48	0	53	0	0	0.0%	0.0%
DCB	44	1,713	43	1,768	42	1,765	38	1,812	37	1,696	-15.9%	-0.9%
DCP	5	1,253	3	1,233	2	1,751	2	1,948	3	1,562	-40.0%	24.6%
DCTD	0	0	0	0	4	2,290	4	2,257	4	2,239	100.0%	100.0%
DCTD	42	2,165	40	1,903	33	1,861	31	1,982	38	1,989	-9.5%	-8.1%
DCCPS	9	2,299	8	2,138	9	2,322	10	2,174	12	2,182	33.3%	-5.1%
OD (CRCHD, OCAM, CSSI, CCT, OHAM, etc.)	0	572	0	392	0	610	0	535	0	742	0.0%	29.7%
R03 Average Cost of Award												
NCI Overall	162	79	114	79	138	78	148	82	68	82	-58.02%	3.8%
DCB	33	79	28	79	56	79	71	80	29	79	-12.1%	0.6%
DCP	28	79	8	80	9	78	8	78	3	75	-89.3%	-5.0%
DCTD	29	79	24	79	33	78	39	80	18	80	-37.9%	1.4%
DCCPS	72	79	54	80	40	78	30	92	18	91	-75.0%	14.7%
OD (CRCHD, OCAM, CSSI, CCT, OHAM, etc.)	0	68	0	0	0	0	0	0	0	0	0.0%	-100.0%

continued

* A grant award count of zero showing a dollar amount represents either administrative supplements to existing grants, which are not factored into the grant count but are factored into the average cost of an award, or co-funded grants, which are not factored into the grant count for the NCI but are factored into the average cost of an award.

† In thousands.

Source: Office of Extramural Finance and Information Analysis.

Table 14 (cont'd). Average Total Cost*† and Number of Research Project Grant Awards by Division, Office, Center, and Mechanism From FY2015 – FY2019

Budget Mechanism/ Division	FY 2015		FY 2016		FY 2017		FY 2018		FY 2019		Percent Change 2015 vs 2019	
	No.	Avg. Cost	No.	Avg. Cost	No.	Avg. Cost	No.	Avg. Cost	No.	Avg. Cost	No.	Avg. Cost
R21 Average Cost of Award												
NCI Overall	639	193	585	194	369	190	298	191	219	183	-65.73%	-5.18%
DCB	0	0	0	0	0	80	0	0	0	0	0.0%	0.0%
DCB	196	193	201	190	102	186	27	186	20	184	-89.8%	-4.7%
DCP	55	188	61	191	32	186	22	196	23	174	-58.2%	-7.4%
DCTD	0	0	0	0	0	0	0	78	0	37	0.0%	100.0%
DCTD	266	196	220	192	144	193	165	191	121	181	-54.5%	-7.5%
DCCPS	0	0	0	0	0	82	0	0	0	0	0.0%	0.0%
DCCPS	93	185	82	202	67	184	57	192	41	179	-55.9%	-3.0%
OD (CRCHD, OCAM, CSSI, CCT, OHAM, etc.)	29	208	21	219	24	202	27	187	14	217	-51.7%	4.2%
U01/U19 Average Cost of Award												
NCI Overall	53	1,141	65	912	68	1,243	91	1,117	98	1,368	84.91%	19.89%
DCB	0	0	0	0	2	1,672	8	2,554	8	2,822	100.0%	100.0%
DCB	6	753	6	690	5	1,120	7	771	6	988	0.0%	31.3%
DCP	0	0	0	0	0	0	6	723	6	1,061	100.0%	100.0%
DCP	11	975	34	778	26	976	38	912	36	852	227.3%	-12.6%
DCTD	0	0	0	0	8	1,718	4	780	5	2,076	100.0%	100.0%
DCTD	7	780	6	462	6	809	5	335	6	353	-14.3%	-54.7%
DCCPS	0	0	0	0	0	0	1	1,043	8	2,835	100.0%	100.0%
DCCPS	16	1,570	6	1,912	6	2,037	7	1,661	8	1,533	-50.0%	-2.3%
OD (CRCHD, OCAM, CSSI, CCT, OHAM, etc.)	0	0	0	0	0	0	0	0	0	167	0.0%	100.0%
OD (CRCHD, OCAM, CSSI, CCT, OHAM, etc.)	13	1,129	13	1,113	15	1,292	15	1,291	15	1,396	15.4%	23.7%
R13 Average Cost of Award												
NCI Overall	54	14	51	14	53	13	46	16	59	14	9.26%	0.0%
DCB	29	4	22	6	30	4	19	6	28	6	-3.4%	42.4%
DCP	6	17	4	22	4	24	5	20	8	16	33.3%	-3.5%
DCTD	11	10	12	7	8	7	10	7	13	7	18.2%	-30.1%
DCCPS	5	26	8	19	6	22	7	18	4	23	-20.0%	-11.1%
OD (CRCHD, OCAM, CSSI, CCT, OHAM, etc.)	3	93	5	50	5	51	5	62	6	53	100.0%	-42.8%

continued

*A grant award count of zero showing a dollar amount represents either administrative supplements to existing grants, which are not factored into the grant count but are factored into the average cost of an award, or co-funded grants, which are not factored into the grant count for the NCI but are factored into the average cost of an award.

† In thousands.

Source: Office of Extramural Finance and Information Analysis.

Table 14 (cont'd). Average Total Cost*† and Number of Research Project Grant Awards by Division, Office, Center, and Mechanism From FY2015 – FY2019

Budget Mechanism/ Division	FY 2015		FY 2016		FY 2017		FY 2018		FY 2019		Percent Change 2015 vs 2019	
	No.	Avg. Cost	No.	Avg. Cost	No.	Avg. Cost	No.	Avg. Cost	No.	Avg. Cost	No.	Avg. Cost
U10 Average Cost of Award												
NCI Overall	49	3,130	48	2,852	48	2,919	48	2,966	11	12,170	-77.55%	288.82%
DCP	0	1,009	0	0	0	0	0	0	0	0	0.0%	-100.0%
DCTD	49	3,110	48	2,852	48	2,919	48	2,966	11	12,170	-77.6%	291.3%
P30 Average Cost of Award												
NCI Overall	69	4,110	69	4,761	69	4,426	70	4,654	71	4,635	2.9%	12.77%
OD (CRCHD, OCAM, CSSI, CCT, OHAM, etc.)	69	4,110	69	4,761	69	4,426	70	4,654	71	4,635	2.9%	12.8%
P50 Average Cost of Award												
NCI Overall	53	2,046	54	2,056	51	2,185	50	2,191	58	2,036	9.43%	-0.49%
DCTD	53	2,042	51	2,142	51	2,177	50	2,188	52	2,125	-1.9%	4.1%
DCCPS	0	0	3	464	0	0	0	0	6	1,217	100.0%	100.0%
OD (CRCHD, OCAM, CSSI, CCT, OHAM, etc.)	0	220	0	402	0	385	0	128	0	272	0.0%	23.6%
SBIR Average Cost of Award												
NCI Overall	162	479	151	554	188	564	219	534	151	624	-6.79%	30.27%
DCCPS	0	77	0	0	0	0	0	0	0	0	0.0%	-100.0%
SBIRDC	0	0	0	0	4	817	3	1,007	1	382	100.0%	100.0%
SBIRDC	162	479	151	554	183	556	216	527	150	626	-7.4%	30.8%
STTR Average Cost of Award												
NCI Overall	32	469	51	349	50	392	40	459	29	626	-9.38%	33.48%
SBIRDC	0	0	0	0	4	327	3	442	2	913	100.0%	100.0%
SBIRDC	32	469	51	349	46	397	37	460	27	604	-15.6%	29.0%
U54 Average Cost of Award												
NCI Overall	90	1,073	55	1,602	66	1,534	68	2,261	69	2,100	-23.33%	95.71%
CRCHD	51	818	30	1,268	31	1,238	38	1,480	38	1,185	-25.5%	44.8%
CSSI	6	2,116	6	2,234	6	2,206	0	0	0	0	-100.0%	-100.0%
DCB	22	1,110	17	2,080	22	2,040	30	3,237	31	3,208	40.9%	189.0%
DCCPS	11	1,611	2	651	7	675	0	400	0	400	-100.0%	-75.2%

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† In thousands.
Source: Office of Extramural Finance and Information Analysis.

Table 15. NCI Organ and Related Site-Specific Dollars for FY2015 – FY2019 – Annual Percent Change

(This table reports funding for grants and contracts only; intramural projects are excluded.)

Anatomical Site	Counts and Relevant Dollars†	2015	2016	2017	2018	2019	Average Percent Change/Year
Adrenal	***Number of Grants***	***2***	***1***	***1***	***1***	***1***	
	Relevant Grant Dollars	255,563	202,275	‡	209,995	209,995	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***2***	***1***	***1***	***1***	***1***	
	Total Relevant Dollars	255,563	202,275	‡	209,995	209,995	-5.68
Anus	***Number of Grants***	***14***	***18***	***25***	***25***	***31***	
	Relevant Grant Dollars	3,142,985	3,368,804	4,894,934	5,489,383	7,928,587	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***17***	***21***	***27***	***31***	***36***	
	Total Relevant Dollars	3,142,984	3,368,804	4,894,934	5,489,383	7,928,587	27.27
Bladder	***Number of Grants***	***109***	***108***	***104***	***114***	***80***	
	Relevant Grant Dollars	23,038,302	21,648,984	21,066,346	30,288,601	27,645,833	
	Number of Contracts	***3***	***13***	***15***	***9***	***1***	
	Relevant Contract Dollars	2,845,018	5,856,681	8,205,875	4,183,614	1,088,691	
	Total Count	***112***	***121***	***119***	***123***	***81***	
	Total Relevant Dollars	25,883,320	27,505,665	29,272,221	34,472,215	28,734,524	3.45
Bone Marrow	***Number of Grants***	***15***	***11***	***11***	***6***	***9***	
	Relevant Grant Dollars	5,101,356	4,425,573	3,539,567	2,803,956	4,833,724	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***15***	***11***	***11***	***6***	***9***	
	Total Relevant Dollars	5,101,356	4,425,573	3,539,567	2,803,956	4,833,724	4.58
Bone, Cartilage	***Number of Grants***	***11***	***9***	***10***	***5***	***9***	
	Relevant Grant Dollars	2,011,240	3,340,737	3,299,530	2,706,328	3,671,705	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***11***	***9***	***10***	***5***	***9***	
	Total Relevant Dollars	2,011,240	3,340,737	3,299,530	2,706,328	3,671,705	20.64
Brain	***Number of Grants***	***464***	***465***	***478***	***485***	***483***	
	Relevant Grant Dollars	184,919,655	177,269,529	196,218,129	195,752,964	201,366,277	
	Number of Contracts	***2***	***‡***	***3***	***1***	***‡***	
	Relevant Contract Dollars	968,489	‡	606,179	50,007	‡	
	Total Count	***466***	***465***	***481***	***486***	***483***	
	Total Relevant Dollars	185,888,144	177,269,529	196,824,308	195,802,971	201,366,277	2.18

continued

† Relevant Dollars = portion of the funded amount relevant to a specific site.
‡ Coding not required or requested.
Source: Research Analysis and Evaluation Branch.

Table 15 (cont'd). NCI Organ and Related Site-Specific Dollars for FY2015 – FY2019 – Annual Percent Change

(This table reports funding for grants and contracts only; intramural projects are excluded.)

Anatomical Site	Counts and Relevant Dollars†	2015	2016	2017	2018	2019	Average Percent Change/Year
Breast	***Number of Grants***	***1,401***	***1,322***	***1,313***	***1,333***	***1,368***	
	Relevant Grant Dollars	491,214,544	470,476,822	494,020,790	527,293,687	500,009,641	
	Number of Contracts	***11***	***22***	***17***	***15***	***4***	
	Relevant Contract Dollars	9,929,929	14,699,628	13,538,368	8,187,849	4,020,068	
	Total Count	***1,412***	***1,344***	***1,330***	***1,348***	***1,372***	
	Total Relevant Dollars	501,144,473	485,176,451	507,559,159	535,481,536	504,029,709	0.26
Central Nervous System	***Number of Grants***	***10***	***7***	***12***	***9***	***8***	
	Relevant Grant Dollars	1,300,559	784,790	1,347,811	1,001,486	1,919,978	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***10***	***7***	***12***	***9***	***8***	
	Total Relevant Dollars	1,300,559	784,790	1,347,811	1,001,486	1,919,978	24.52
Cervix	***Number of Grants***	***186***	***172***	***167***	***169***	***151***	
	Relevant Grant Dollars	45,275,628	51,244,770	51,639,739	56,529,769	55,801,427	
	Number of Contracts	***‡***	***3***	***5***	***2***	***1***	
	Relevant Contract Dollars	‡	5,125,766	3,846,974	855,852	622,604	
	Total Count	***186***	***175***	***172***	***171***	***152***	
	Total Relevant Dollars	45,275,628	56,370,536	55,486,713	57,385,621	56,424,031	6.17
Childhood Leukemia	***Number of Grants***	***124***	***157***	***161***	***145***	***218***	
	Relevant Grant Dollars	36,439,553	55,857,941	56,840,658	65,760,928	77,503,021	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***124***	***157***	***161***	***145***	***218***	
	Total Relevant Dollars	36,439,553	55,857,941	56,840,658	65,760,928	77,503,021	22.15
Colon, Rectum	***Number of Grants***	***617***	***568***	***547***	***608***	***599***	
	Relevant Grant Dollars	186,582,220	185,327,068	182,797,070	234,480,747	218,560,623	
	Number of Contracts	***9***	***16***	***16***	***12***	***7***	
	Relevant Contract Dollars	4,627,427	9,412,567	8,004,223	3,410,116	2,976,017	
	Total Count	***626***	***584***	***563***	***620***	***606***	
	Total Relevant Dollars	191,209,647	194,739,634	190,801,293	237,890,863	221,536,640	4.41
Esophagus	***Number of Grants***	***97***	***98***	***89***	***92***	***64***	
	Relevant Grant Dollars	26,634,006	22,479,745	27,239,377	25,721,355	22,683,369	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***97***	***98***	***89***	***92***	***64***	
	Total Relevant Dollars	26,634,006	22,479,745	27,239,377	25,721,355	22,683,369	-2.95

continued

† Relevant Dollars = portion of the funded amount relevant to a specific site.
‡ Coding not required or requested.
Source: Research Analysis and Evaluation Branch.

Table 15 (cont'd). NCI Organ and Related Site-Specific Dollars for FY2015 – FY2019 – Annual Percent Change

(This table reports funding for grants and contracts only; intramural projects are excluded.)

Anatomical Site	Counts and Relevant Dollars†	2015	2016	2017	2018	2019	Average Percent Change/Year
Eye	***Number of Grants***	***22***	***22***	***27***	***23***	***24***	
	Relevant Grant Dollars	4,363,108	3,817,344	5,252,252	4,540,263	4,941,626	
	Number of Contracts	***‡***	***‡***	***1***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	1,999,987	‡	‡	
	Total Count	***22***	***22***	***28***	***23***	***24***	
	Total Relevant Dollars	4,363,108	3,817,344	7,252,239	4,540,263	4,941,626	12.23
Gall Bladder	***Number of Grants***	***1***	***4***	***4***	***5***	***5***	
	Relevant Grant Dollars	‡	579,237	476,722	1,217,986	1,225,202	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***1***	***4***	***4***	***5***	***5***	
	Total Relevant Dollars	‡	579,237	476,722	1,217,986	1,225,202	46.13
Gastrointestinal Stromal Tumor	***Number of Grants***	***2***	***6***	***9***	***12***	***13***	
	Relevant Grant Dollars	$104,162	$888,078	$1,638,139	3,155,373	3,411,602	
	Number of Contracts	***1***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	$650,641	‡	‡	‡	‡	
	Total Count	***3***	***6***	***9***	***12***	***13***	
	Total Relevant Dollars	$754,803	$888,078	$1,638,139	3,155,373	3,411,602	50.71
Gastrointestinal Tract	***Number of Grants***	***25***	***28***	***25***	***20***	***23***	
	Relevant Grant Dollars	5,873,156	6,074,796	5,074,964	4,019,325	10,623,733	
	Number of Contracts	***2***	***4***	***1***	***1***	***‡***	
	Relevant Contract Dollars	1,663,052	2,858,139	627,879	894,832	‡	
	Total Count	***27***	***32***	***26***	***21***	***23***	
	Total Relevant Dollars	7,536,208	8,932,935	5,702,843	4,914,157	10,623,733	21.18
Head and Neck	***Number of Grants***	***171***	***168***	***176***	***172***	***155***	
	Relevant Grant Dollars	35,246,846	35,221,524	38,974,882	40,445,671	47,171,588	
	Number of Contracts	***3***	***3***	***2***	***3***	***1***	
	Relevant Contract Dollars	1,713,852	1,814,999	312,604	128,865	1,999,989	
	Total Count	***174***	***171***	***178***	***175***	***156***	
	Total Relevant Dollars	36,960,698	37,036,523	39,287,486	40,574,536	49,171,577	7.69
Hodgkin Lymphoma	***Number of Grants***	***35***	***28***	***29***	***29***	***28***	
	Relevant Grant Dollars	8,519,854	8,217,911	8,282,621	8,711,348	7,827,737	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***35***	***28***	***29***	***29***	***28***	
	Total Relevant Dollars	8,519,854	8,217,911	8,282,621	8,711,348	7,827,737	-1.93

continued

† Relevant Dollars = portion of the funded amount relevant to a specific site.
‡ Coding not required or requested.
Source: Research Analysis and Evaluation Branch.

Table 15 (cont'd). NCI Organ and Related Site-Specific Dollars for FY2015 – FY2019 – Annual Percent Change

(This table reports funding for grants and contracts only; intramural projects are excluded.)

Anatomical Site	Counts and Relevant Dollars†	2015	2016	2017	2018	2019	Average Percent Change/Year
Kaposi Sarcoma	***Number of Grants***	***65***	***54***	***58***	***60***	***65***	
	Relevant Grant Dollars	21,864,767	24,537,356	27,418,524	26,360,868	24,244,764	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***65***	***54***	***58***	***60***	***65***	
	Total Relevant Dollars	21,864,767	24,537,356	27,418,524	26,360,868	24,244,764	3.02
Kidney	***Number of Grants***	***136***	***131***	***131***	***145***	***116***	
	Relevant Grant Dollars	23,745,801	27,200,468	29,737,839	35,202,508	35,514,093	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***136***	***131***	***131***	***145***	***116***	
	Total Relevant Dollars	23,745,801	27,200,468	29,737,839	35,202,508	35,514,093	10.78
Larynx	***Number of Grants***	***4***	***2***	***2***	***2***	***1***	
	Relevant Grant Dollars	671,024	575,873	473,788	431,926	82,322	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***4***	***2***	***2***	***2***	***1***	
	Total Relevant Dollars	671,024	575,873	473,788	431,926	82,322	-30.42
Leukemia	***Number of Grants***	***605***	***582***	***593***	***560***	***556***	
	Relevant Grant Dollars	218,460,707	217,864,508	225,848,786	237,381,418	235,759,795	
	Number of Contracts	***5***	***1***	***2***	***2***	***‡***	
	Relevant Contract Dollars	3,259,086	1,496,276	1,547,327	19,191	‡	
	Total Count	***610***	***583***	***595***	***562***	***556***	
	Total Relevant Dollars	221,719,793	219,360,784	227,396,114	237,400,609	235,759,795	1.58
Liver	***Number of Grants***	***245***	***218***	***212***	***258***	***269***	
	Relevant Grant Dollars	59,175,493	62,124,234	62,046,177	84,863,828	93,301,235	
	Number of Contracts	***2***	***2***	***3***	***3***	***7***	
	Relevant Contract Dollars	1,488,511	353,600	1,674,216	99,772	2,411,664	
	Total Count	***247***	***220***	***215***	***261***	***276***	
	Total Relevant Dollars	60,664,004	62,477,834	63,720,393	84,963,600	95,712,899	12.74
Lung	***Number of Grants***	***705***	***697***	***714***	***726***	***777***	
	Relevant Grant Dollars	220,913,549	242,571,606	267,051,228	297,030,756	329,758,879	
	Number of Contracts	***9***	***23***	***25***	***16***	***20***	
	Relevant Contract Dollars	5,231,560	15,848,869	21,302,044	17,215,341	55,613,583	
	Total Count	***714***	***720***	***739***	***742***	***797***	
	Total Relevant Dollars	226,145,109	258,420,475	288,353,271	314,246,097	385,372,462	14.37

continued

† Relevant Dollars = portion of the funded amount relevant to a specific site.
‡ Coding not required or requested.
Source: Research Analysis and Evaluation Branch.

Table 15 (cont'd). NCI Organ and Related Site-Specific Dollars for FY2015 – FY2019 – Annual Percent Change

(This table reports funding for grants and contracts only; intramural projects are excluded.)

Anatomical Site	Counts and Relevant Dollars†	2015	2016	2017	2018	2019	Average Percent Change/Year
Lymph Node	***Number of Grants***	***2***	***1***	***2***	***3***	***3***	
	Relevant Grant Dollars	273,875	94,613	425,733	650,917	571,254	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***2***	***1***	***2***	***3***	***3***	
	Total Relevant Dollars	273,875	94,613	425,733	650,917	571,254	81.29
Lymphatic System	***Number of Grants***	***5***	***2***	***1***	***1***	***1***	
	Relevant Grant Dollars	704,373	261,544	218,028	205,770	233,372	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***5***	***2***	***1***	***1***	***1***	
	Total Relevant Dollars	704,373	261,544	218,028	205,770	233,372	-17.92
Melanoma	***Number of Grants***	***398***	***410***	***422***	***433***	***431***	
	Relevant Grant Dollars	114,263,178	119,244,182	132,231,623	141,106,072	151,332,731	
	Number of Contracts	***2***	***1***	***2***	***‡***	***14***	
	Relevant Contract Dollars	597,520	295,782	3,499,958	‡	23,242,523	
	Total Count	***400***	***411***	***424***	***433***	***445***	
	Total Relevant Dollars	114,860,698	119,539,964	135,731,581	141,106,072	174,575,254	11.32
Mesothelioma	***Number of Grants***	***22***	***22***	***18***	***20***	***23***	
	Relevant Grant Dollars	5,376,051	6,939,730	6,037,260	8,166,842	9,722,032	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***22***	***22***	***18***	***20***	***23***	
	Total Relevant Dollars	5,376,051	6,939,730	6,037,260	8,166,842	9,722,032	17.59
Muscle	***Number of Grants***	***3***	***2***	***3***	***3***	***2***	
	Relevant Grant Dollars	384,442	342,916	496,492	440,899	314,850	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***3***	***2***	***3***	***3***	***2***	
	Total Relevant Dollars	384,442	342,916	496,492	440,899	314,850	-1.45
Myeloma	***Number of Grants***	***157***	***173***	***169***	***171***	***144***	
	Relevant Grant Dollars	40,799,287	45,263,432	53,362,826	55,081,460	51,396,312	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***157***	***173***	***169***	***171***	***144***	
	Total Relevant Dollars	40,799,287	45,263,432	53,362,826	55,081,460	51,396,312	6.34

continued

† Relevant Dollars = portion of the funded amount relevant to a specific site.
‡ Coding not required or requested.
Source: Research Analysis and Evaluation Branch.

Table 15 (cont'd). NCI Organ and Related Site-Specific Dollars for FY2015 – FY2019 – Annual Percent Change

(This table reports funding for grants and contracts only; intramural projects are excluded.)

Anatomical Site	Counts and Relevant Dollars†	2015	2016	2017	2018	2019	Average Percent Change/Year
Nervous System	***Number of Grants***	***22***	***22***	***24***	***14***	***15***	
	Relevant Grant Dollars	6,108,596	6,153,043	6,585,936	4,747,277	5,526,718	
	Number of Contracts	***‡***	***‡***	***1***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	1,499,991	‡	‡	
	Total Count	***22***	***22***	***25***	***14***	***15***	
	Total Relevant Dollars	6,108,596	6,153,043	8,085,927	4,747,277	5,526,718	1.82
Neuroblastoma	***Number of Grants***	***61***	***56***	***58***	***71***	***75***	
	Relevant Grant Dollars	16,233,598	17,024,278	20,384,541	26,308,199	22,793,475	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***61***	***56***	***58***	***71***	***75***	
	Total Relevant Dollars	16,233,598	17,024,278	20,384,541	26,308,199	22,793,475	10.08
Non-Hodgkin Lymphoma	***Number of Grants***	***352***	***331***	***307***	***299***	***278***	
	Relevant Grant Dollars	96,633,382	98,315,810	96,233,763	99,973,050	99,025,255	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***1***	
	Relevant Contract Dollars	‡	‡	‡	‡	54,994	
	Total Count	***352***	***331***	***307***	***299***	***279***	
	Total Relevant Dollars	96,633,382	98,315,810	96,233,763	99,973,050	99,080,249	0.65
Not Site Specific*	***Number of Grants***	***1,383***	***1,323***	***1,368***	***1,435***	***1,511***	
	Relevant Grant Dollars	580,506,330	613,729,313	697,160,768	770,712,588	856,175,303	
	Number of Contracts	***152***	***154***	***135***	***160***	***125***	
	Relevant Contract Dollars	442,411,300	555,664,493	583,258,480	736,337,943	522,054,442	
	Total Count	***1,535***	***1,477***	***1,503***	***1,595***	***1,636***	
	Total Relevant Dollars	1,022,917,630	1,169,393,806	1,280,419,248	1,507,050,531	1,378,229,745	8.24
Oral Cavity	***Number of Grants***	***50***	***54***	***53***	***40***	***43***	
	Relevant Grant Dollars	12,635,411	13,714,954	13,533,375	12,182,738	12,325,550	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***1***	
	Relevant Contract Dollars	‡	‡	‡	‡	15,000	
	Total Count	***50***	***54***	***53***	***40***	***43***	
	Total Relevant Dollars	12,635,411	13,714,954	13,533,375	12,182,738	12,340,550	-0.37
Ovary	***Number of Grants***	***300***	***315***	***332***	***335***	***342***	
	Relevant Grant Dollars	77,297,410	83,576,854	95,963,310	106,717,144	108,940,938	
	Number of Contracts	***5***	***3***	***4***	***1***	***1***	
	Relevant Contract Dollars	3,363,895	1,470,356	1,535,829	215,329	4,863	
	Total Count	***305***	***318***	***336***	***336***	***343***	
	Total Relevant Dollars	80,661,305	85,047,209	97,499,140	106,932,473	108,945,801	7.90

continued

† Relevant Dollars = portion of the funded amount relevant to a specific site.

‡ Coding not required or requested.

* Not Site Specific = research that lacks a focus on a particular type of cancer/cancer site (e.g., basic research on the role of a protein in cellular DNA damage in fruit flies has no cancer site focus; however, it is relevant to cancer research).

Source: Research Analysis and Evaluation Branch.

Table 15 (cont'd). NCI Organ and Related Site-Specific Dollars for FY2015 – FY2019 – Annual Percent Change

(This table reports funding for grants and contracts only; intramural projects are excluded.)

Anatomical Site	Counts and Relevant Dollars†	2015	2016	2017	2018	2019	Average Percent Change/Year
Pancreas	***Number of Grants***	***419***	***439***	***454***	***486***	***484***	
	Relevant Grant Dollars	113,151,301	138,490,101	163,371,849	169,736,794	172,139,086	
	Number of Contracts	***4***	***13***	***13***	***9***	***2***	
	Relevant Contract Dollars	3,791,916	5,378,661	4,908,116	789,909	1,291,099	
	Total Count	***423***	***452***	***467***	***495***	***486***	
	Total Relevant Dollars	116,943,217	143,868,761	168,279,965	170,526,703	173,430,185	10.76
Parathyroid	***Number of Grants***	***3***	***2***	***3***	***2***	***3***	
	Relevant Grant Dollars	391,973	219,722	676,030	652,252	1,268,612	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***3***	***2***	***3***	***2***	***3***	
	Total Relevant Dollars	391,973	219,722	676,030	652,252	1,268,612	63.68
Penis	***Number of Grants***	***4***	***3***	***3***	***2***	***7***	
	Relevant Grant Dollars	191,911	341,656	341,693	263,025	656,490	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***4***	***3***	***3***	***2***	***7***	
	Total Relevant Dollars	191,911	341,656	341,693	263,025	656,490	51.15
Pharynx	***Number of Grants***	***18***	***13***	***12***	***7***	***8***	
	Relevant Grant Dollars	2,704,917	2,017,103	2,045,454	1,456,420	2,928,133	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***18***	***13***	***12***	***7***	***8***	
	Total Relevant Dollars	2,704,917	2,017,103	2,045,454	1,456,420	2,928,133	12.06
Pituitary	***Number of Grants***	***5***	***7***	***5***	***5***	***6***	
	Relevant Grant Dollars	821,132	1,419,108	1,222,742	1,572,297	1,546,588	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***5***	***7***	***5***	***5***	***6***	
	Total Relevant Dollars	821,132	1,419,108	1,222,742	1,572,297	1,546,588	21.48
Prostate	***Number of Grants***	***620***	***587***	***551***	***552***	***533***	
	Relevant Grant Dollars	198,462,848	202,049,473	194,381,794	203,996,788	210,896,342	
	Number of Contracts	***9***	***23***	***21***	***16***	***7***	
	Relevant Contract Dollars	6,069,471	15,201,920	13,540,995	7,118,212	5,553,063	
	Total Count	***629***	***610***	***572***	***568***	***540***	
	Total Relevant Dollars	204,532,319	217,251,393	207,922,789	211,115,001	216,449,404	1.49

continued

† Relevant Dollars = portion of the funded amount relevant to a specific site.
‡ Coding not required or requested.
Source: Research Analysis and Evaluation Branch.

Table 15 (cont'd). NCI Organ and Related Site-Specific Dollars for FY2015 – FY2019 – Annual Percent Change

(This table reports funding for grants and contracts only; intramural projects are excluded.)

Anatomical Site	Counts and Relevant Dollars†	2015	2016	2017	2018	2019	Average Percent Change/Year
Retinoblastoma	***Number of Grants***	***12***	***10***	***8***	***10***	***10***	
	Relevant Grant Dollars	3,475,408	2,740,929	1,629,496	3,485,869	2,233,623	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***12***	***10***	***8***	***10***	***10***	
	Total Relevant Dollars	3,475,408	2,740,929	1,629,496	3,485,869	2,233,623	4.08
Sarcoma, Bone	***Number of Grants***	***61***	***69***	***73***	***70***	***66***	
	Relevant Grant Dollars	$13,765,833	$16,008,892	$19,160,750	32,624,063	16,332,850	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***61***	***69***	***73***	***70***	***66***	
	Total Relevant Dollars	$13,765,833	$16,008,892	$19,160,750	32,624,063	16,332,850	14.08
Sarcoma, Soft Tissue	***Number of Grants***	***95***	***91***	***97***	***99***	***99***	
	Relevant Grant Dollars	$20,268,346	$20,650,683	$22,274,960	40,785,034	31,903,104	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***95***	***91***	***97***	***99***	***99***	
	Total Relevant Dollars	$20,268,346	$20,650,683	$22,274,960	40,785,034	31,903,104	17.77
Skin	***Number of Grants***	***147***	***134***	***136***	***127***	***116***	
	Relevant Grant Dollars	34,254,082	31,543,713	34,846,957	33,633,922	34,112,959	
	Number of Contracts	***1***	***‡***	***2***	***1***	***3***	
	Relevant Contract Dollars	35,000	‡	1,576,506	288,945	643,548	
	Total Count	***148***	***134***	***138***	***128***	***119***	
	Total Relevant Dollars	34,289,082	31,543,713	36,423,463	33,922,867	34,756,507	0.76
Small Intestine	***Number of Grants***	***8***	***8***	***10***	***6***	***8***	
	Relevant Grant Dollars	2,085,838	2,085,715	3,030,339	2,264,455	2,202,945	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***1***	
	Relevant Contract Dollars	‡	‡	‡	‡	510,195	
	Total Count	***8***	***8***	***10***	***6***	***8***	
	Total Relevant Dollars	2,085,838	2,085,715	3,030,339	2,264,455	2,713,140	9.96
Stomach	***Number of Grants***	***57***	***58***	***59***	***56***	***41***	
	Relevant Grant Dollars	9,547,109	11,180,211	11,244,817	11,759,946	10,761,813	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***1***	
	Relevant Contract Dollars	‡	‡	‡	‡	510,195	
	Total Count	***57***	***58***	***59***	***56***	***42***	
	Total Relevant Dollars	9,547,109	11,180,211	11,244,817	11,759,946	11,272,008	4.53

continued

† Relevant Dollars = portion of the funded amount relevant to a specific site.
‡ Coding not required or requested.
Source: Research Analysis and Evaluation Branch.

Table 15 (cont'd). NCI Organ and Related Site-Specific Dollars for FY2015 – FY2019 – Annual Percent Change

(This table reports funding for grants and contracts only; intramural projects are excluded.)

Anatomical Site	Counts and Relevant Dollars†	2015	2016	2017	2018	2019	Average Percent Change/Year
Testis	***Number of Grants***	***9***	***5***	***7***	***6***	***6***	
	Relevant Grant Dollars	3,143,451	730,983	1,741,733	1,660,195	1,568,860	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***9***	***5***	***7***	***6***	***6***	
	Total Relevant Dollars	3,143,451	730,983	1,741,733	1,660,195	1,568,860	12.83
Thymus	***Number of Grants***	***3***	***3***	***1***	***6***	***6***	
	Relevant Grant Dollars	239,742	260,988	116,127	1,081,389	1,065,371	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***3***	***3***	***1***	***6***	***6***	
	Total Relevant Dollars	239,742	260,988	116,127	1,081,389	1,065,371	195.77
Thyroid	***Number of Grants***	***57***	***47***	***49***	***46***	***44***	
	Relevant Grant Dollars	19,137,599	17,604,744	17,778,628	12,105,222	10,794,911	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***1***	
	Relevant Contract Dollars	‡	‡	‡	‡	49,394	
	Total Count	***57***	***47***	***49***	***46***	***45***	
	Total Relevant Dollars	19,137,599	17,604,744	17,778,628	12,105,222	10,844,305	-12.34
Uterus	***Number of Grants***	***75***	***85***	***83***	***84***	***59***	
	Relevant Grant Dollars	10,947,265	15,043,375	15,803,076	15,069,028	13,819,141	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***1***	
	Relevant Contract Dollars	‡	‡	‡	‡	1,231,648	
	Total Count	***75***	***85***	***83***	***84***	***60***	
	Total Relevant Dollars	10,947,265	15,043,375	15,803,076	15,069,028	15,050,789	9.42
Vagina	***Number of Grants***	***3***	***‡***	***1***	***2***	***4***	
	Relevant Grant Dollars	86,493	‡	383,925	524,157	583,872	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***3***	***‡***	***1***	***2***	***4***	
	Total Relevant Dollars	86,493	‡	383,925	524,157	583,872	130.59
Vascular	***Number of Grants***	***9***	***4***	***4***	***2***	***3***	
	Relevant Grant Dollars	1,745,884	668,887	1,118,191	837,968	1,344,206	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***9***	***4***	***4***	***2***	***3***	
	Total Relevant Dollars	1,745,884	668,887	1,118,191	837,968	1,344,206	10.21

continued

† Relevant Dollars = portion of the funded amount relevant to a specific site.
‡ Coding not required or requested.
Source: Research Analysis and Evaluation Branch.

Table 15 (cont'd). NCI Organ and Related Site-Specific Dollars for FY2015 – FY2019 – Annual Percent Change

(This table reports funding for grants and contracts only; intramural projects are excluded.)

Anatomical Site	Counts and Relevant Dollars†	2015	2016	2017	2018	2019	Average Percent Change/Year
Wilms Tumor	***Number of Grants***	***10***	***12***	***11***	***9***	***7***	
	Relevant Grant Dollars	3,548,011	3,831,667	4,241,898	4,160,103	1,940,000	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***10***	***12***	***11***	***9***	***7***	
	Total Relevant Dollars	3,548,011	3,831,667	4,241,898	4,160,103	1,940,000	-9.14

† Relevant Dollars = portion of the funded amount relevant to a specific site.
‡ Coding not required or requested.
Source: Research Analysis and Evaluation Branch.

Table 16. NCI Special Interest Category (SIC) Dollars for FY2015 – FY2019 – Annual Percent Change*

(This table reports funding for grants and contracts only; intramural projects are excluded.)

Special Interest Categories	Counts and Relevant Dollars†	2015	2016	2017	2018	2019	Average Percent Change/Year
Adolescent and Young Adults Cancer	***Number of Grants***	***9***	***101***	***142***	***172***	***231***	
	Relevant Grant Dollars	2,606,149	28,390,821	39,158,375	80,608,475	118,127,498	
	Number of Contracts	***1***	***‡***	***1***	***‡***	***2***	
	Relevant Contract Dollars	140,000	‡	37,500	‡	442,938	
	Total Count	***10***	***101***	***143***	***172***	***233***	
	Total Relevant Dollars	2,746,149	28,390,821	39,195,875	80,608,475	118,570,436	281.16
Adoptive Cell Immunotherapy	***Number of Grants***	***168***	***175***	***174***	***178***	***211***	
	Relevant Grant Dollars	45,245,708	43,690,082	50,677,796	65,668,061	87,631,798	
	Number of Contracts	***‡***	***‡***	***2***	***‡***	***1***	
	Relevant Contract Dollars	‡	‡	539,847	‡	27,497	
	Total Count	***168***	***175***	***176***	***178***	***212***	
	Total Relevant Dollars	45,245,708	43,690,082	51,217,643	65,668,061	87,659,295	18.87
Advanced Manufacturing Technology	***Number of Grants***	***5***	***3***	***1***	***3***	***3***	
	Relevant Grant Dollars	1,939,427	900,771	560,239	1,493,003	845,428	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***5***	***3***	***1***	***3***	***3***	
	Total Relevant Dollars	1,939,427	900,771	560,239	1,493,003	845,428	7.94
Aging	***Number of Grants***	***255***	***240***	***226***	***196***	***215***	
	Relevant Grant Dollars	53,143,671	54,936,453	49,797,772	49,513,188	64,340,550	
	Number of Contracts	***3***	***4***	***5***	***5***	***6***	
	Relevant Contract Dollars	230,807	343,283	462,276	524,756	690,838	
	Total Count	***258***	***244***	***231***	***201***	***221***	
	Total Relevant Dollars	53,374,478	55,279,736	50,260,048	50,037,944	65,031,388	6.00
Alternative Medicine	***Number of Grants***	***189***	***154***	***153***	***148***	***145***	
	Relevant Grant Dollars	47,270,448	42,068,505	35,660,834	45,018,152	46,859,296	
	Number of Contracts	***2***	***2***	***2***	***2***	***2***	
	Relevant Contract Dollars	4,201,607	6,035,840	4,872,052	3,855,644	928,436	
	Total Count	***191***	***156***	***155***	***150***	***147***	
	Total Relevant Dollars	51,472,055	48,104,345	40,532,886	48,873,796	47,787,732	-0.98
Alzheimers Dementia	***Number of Grants***	***3***	***5***	***3***	***1***	***1***	
	Relevant Grant Dollars	386,427	643,489	514,839	215,229	207,809	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***3***	***5***	***3***	***1***	***1***	
	Total Relevant Dollars	386,427	643,489	514,839	215,229	207,809	-378.00
Arctic Research	***Number of Grants***	***3***	***3***	***5***	***5***	***9***	
	Relevant Grant Dollars	562,755	730,070	1,387,435	1,238,465	4,280,761	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***3***	***3***	***5***	***5***	***9***	
	Total Relevant Dollars	562,755	730,070	1,387,435	1,238,465	4,280,761	88.67

continued

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‡ Coding not required or requested.

Source: Research Analysis and Evaluation Branch.

Table 16 (cont'd). NCI Special Interest Category (SIC) Dollars for FY2015 – FY2019 – Annual Percent Change*

(This table reports funding for grants and contracts only; intramural projects are excluded.)

Special Interest Categories	Counts and Relevant Dollars†	2015	2016	2017	2018	2019	Average Percent Change/Year
Asbestos	***Number of Grants***	***12***	***10***	***7***	***7***	***5***	
	Relevant Grant Dollars	3,365,262	3,619,815	3,146,506	3,065,315	1,716,100	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***12***	***10***	***7***	***7***	***5***	
	Total Relevant Dollars	3,365,262	3,619,815	3,146,506	3,065,315	1,716,100	-13.03
Ataxia Telangiectasia	***Number of Grants***	***5***	***5***	***6***	***3***	***3***	
	Relevant Grant Dollars	749,775	786,560	971,104	439,541	632,185	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***5***	***5***	***6***	***3***	***3***	
	Total Relevant Dollars	749,775	786,560	971,104	439,541	632,185	4.36
Autoimmune Diseases	***Number of Grants***	***7***	***4***	***5***	***9***	***10***	
	Relevant Grant Dollars	630,151	832,994	922,027	2,402,185	2,129,342	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***7***	***4***	***5***	***9***	***10***	
	Total Relevant Dollars	630,151	832,994	922,027	2,402,185	2,129,342	48.01
Behavior Research	***Number of Grants***	***706***	***641***	***631***	***630***	***680***	
	Relevant Grant Dollars	222,068,908	212,741,824	214,939,253	238,643,771	248,036,698	
	Number of Contracts	***9***	***11***	***8***	***7***	***5***	
	Relevant Contract Dollars	8,316,984	8,642,050	3,674,886	4,155,657	35,595,028	
	Total Count	***715***	***652***	***639***	***637***	***685***	
	Total Relevant Dollars	230,385,892	221,383,874	218,614,139	242,799,428	283,631,726	5.68
Bioengineering	***Number of Grants***	***392***	***358***	***359***	***445***	***498***	
	Relevant Grant Dollars	135,770,178	132,443,598	134,136,385	164,170,593	192,613,667	
	Number of Contracts	***10***	***7***	***4***	***6***	***17***	
	Relevant Contract Dollars	1,910,970	2,478,606	2,254,856	5,021,564	15,537,305	
	Total Count	***402***	***365***	***363***	***451***	***515***	
	Total Relevant Dollars	137,681,148	134,922,204	136,391,241	169,192,157	208,150,972	11.54
Bioinformatics	***Number of Grants***	***497***	***530***	***551***	***641***	***755***	
	Relevant Grant Dollars	162,383,424	179,136,458	225,131,784	282,603,451	314,616,007	
	Number of Contracts	***18***	***28***	***43***	***25***	***26***	
	Relevant Contract Dollars	33,425,767	58,667,710	37,237,753	43,412,556	243,812,997	
	Total Count	***515***	***558***	***594***	***666***	***781***	
	Total Relevant Dollars	195,809,191	237,804,168	262,369,537	326,016,007	558,429,004	31.83
Biological Carcinogenesis Non-Viral	***Number of Grants***	***70***	***66***	***67***	***69***	***75***	
	Relevant Grant Dollars	18,764,027	20,074,390	20,826,379	21,398,045	23,221,779	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***70***	***66***	***67***	***69***	***75***	
	Total Relevant Dollars	18,764,027	20,074,390	20,826,379	21,398,045	23,221,779	5.49

continued

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‡ Coding not required or requested.

Source: Research Analysis and Evaluation Branch.

Table 16 (cont'd). NCI Special Interest Category (SIC) Dollars for FY2015 – FY2019 – Annual Percent Change*

(This table reports funding for grants and contracts only; intramural projects are excluded.)

Special Interest Categories	Counts and Relevant Dollars†	2015	2016	2017	2018	2019	Average Percent Change/Year
Biologics/ Biological Response Modifiers	***Number of Grants***	***794***	***785***	***821***	***901***	***1,040***	
	Relevant Grant Dollars	271,992,850	279,698,693	318,168,448	360,770,365	421,827,794	
	Number of Contracts	***7***	***14***	***13***	***9***	***18***	
	Relevant Contract Dollars	28,016,244	44,277,523	43,053,952	39,559,578	7,000,911	
	Total Count	***801***	***799***	***834***	***910***	***1,058***	
	Total Relevant Dollars	300,009,094	323,976,215	361,222,400	400,329,942	428,828,705	9.36
Biomaterials Research	***Number of Grants***	***55***	***50***	***54***	***64***	***76***	
	Relevant Grant Dollars	13,939,654	11,643,768	14,118,242	16,497,668	23,344,253	
	Number of Contracts	***‡***	***‡***	***‡***	***1***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	149,905	‡	
	Total Count	***55***	***50***	***54***	***65***	***76***	
	Total Relevant Dollars	13,939,654	11,643,768	14,118,242	16,647,573	23,344,253	15.73
Biomedical Computing	***Number of Grants***	***482***	***502***	***516***	***573***	***686***	
	Relevant Grant Dollars	185,096,312	206,729,157	251,923,719	252,725,128	269,476,921	
	Number of Contracts	***23***	***34***	***46***	***52***	***36***	
	Relevant Contract Dollars	24,023,855	31,453,540	40,076,260	61,946,642	249,348,654	
	Total Count	***505***	***536***	***562***	***625***	***722***	
	Total Relevant Dollars	209,120,167	238,182,697	291,999,979	314,671,770	518,825,575	27.28
Birth Defects	***Number of Grants***	***31***	***28***	***25***	***24***	***29***	
	Relevant Grant Dollars	8,435,172	8,432,758	6,952,868	7,310,219	8,721,531	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***31***	***28***	***25***	***24***	***29***	
	Total Relevant Dollars	8,435,172	8,432,758	6,952,868	7,310,219	8,721,531	1.72
Bone Marrow Transplantation	***Number of Grants***	***87***	***84***	***76***	***74***	***67***	
	Relevant Grant Dollars	34,316,819	34,979,933	29,173,660	34,712,978	29,046,389	
	Number of Contracts	***‡***	***1***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	728,795	‡	‡	‡	
	Total Count	***87***	***85***	***76***	***74***	***67***	
	Total Relevant Dollars	34,316,819	35,708,727	29,173,660	34,712,978	29,046,389	-2.89
Breast Cancer Detection	***Number of Grants***	***287***	***241***	***240***	***236***	***247***	
	Relevant Grant Dollars	82,711,296	72,103,576	81,227,274	93,964,637	81,438,411	
	Number of Contracts	***1***	***4***	***‡***	***2***	***‡***	
	Relevant Contract Dollars	750,000	874,929	‡	53,073	‡	
	Total Count	***288***	***245***	***240***	***238***	***247***	
	Total Relevant Dollars	83,461,296	72,978,505	81,227,274	94,017,710	81,438,411	0.28
Breast Cancer Early Detection	***Number of Grants***	***157***	***123***	***136***	***142***	***146***	
	Relevant Grant Dollars	41,884,877	33,480,855	41,613,302	41,663,384	41,392,617	
	Number of Contracts	***1***	***1***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	750,000	149,669	‡	‡	‡	
	Total Count	***158***	***124***	***136***	***142***	***146***	
	Total Relevant Dollars	42,634,877	33,630,524	41,613,302	41,663,384	41,392,617	0.52

continued

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Source: Research Analysis and Evaluation Branch.

Table 16 (cont'd). NCI Special Interest Category (SIC) Dollars for FY2015 – FY2019 – Annual Percent Change*

(This table reports funding for grants and contracts only; intramural projects are excluded.)

Special Interest Categories	Counts and Relevant Dollars†	2015	2016	2017	2018	2019	Average Percent Change/Year
Breast Cancer Education	***Number of Grants***	***29***	***31***	***31***	***28***	***29***	
	Relevant Grant Dollars	4,270,107	4,685,670	5,272,981	5,439,597	4,543,456	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***29***	***31***	***31***	***28***	***29***	
	Total Relevant Dollars	4,270,107	4,685,670	5,272,981	5,439,597	4,543,456	2.24
Breast Cancer Epidemiology	***Number of Grants***	***155***	***111***	***97***	***92***	***94***	
	Relevant Grant Dollars	55,393,919	39,840,647	34,190,668	30,273,776	26,836,612	
	Number of Contracts	***4***	***12***	***11***	***7***	***‡***	
	Relevant Contract Dollars	1,469,411	6,203,333	5,829,361	37,205	‡	
	Total Count	***159***	***123***	***108***	***99***	***94***	
	Total Relevant Dollars	56,863,330	46,043,980	40,020,029	30,310,981	26,836,612	-16.96
Breast Cancer Genetics	***Number of Grants***	***372***	***310***	***259***	***218***	***198***	
	Relevant Grant Dollars	96,024,839	81,070,422	70,149,087	66,472,567	54,942,258	
	Number of Contracts	***‡***	***1***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	49,931	‡	‡	‡	
	Total Count	***372***	***311***	***259***	***218***	***198***	
	Total Relevant Dollars	96,024,839	81,120,353	70,149,087	66,472,567	54,942,258	-12.90
Breast Cancer Prevention	***Number of Grants***	***91***	***82***	***81***	***79***	***92***	
	Relevant Grant Dollars	18,681,211	19,111,915	19,450,769	18,347,556	20,549,191	
	Number of Contracts	***1***	***2***	***2***	***3***	***‡***	
	Relevant Contract Dollars	3,163,159	3,146,728	4,001,575	4,562,338	‡	
	Total Count	***92***	***84***	***83***	***82***	***92***	
	Total Relevant Dollars	21,844,370	22,258,643	23,452,344	22,909,894	20,549,191	-1.34
Breast Cancer Rehabilitation	***Number of Grants***	***72***	***61***	***60***	***62***	***69***	
	Relevant Grant Dollars	16,436,183	15,759,809	16,481,786	16,157,094	19,374,865	
	Number of Contracts	***‡***	***‡***	***‡***	***1***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	1,499,993	‡	
	Total Count	***72***	***61***	***60***	***63***	***69***	
	Total Relevant Dollars	16,436,183	15,759,809	16,481,786	17,657,087	19,374,865	4.33
Breast Cancer Screening	***Number of Grants***	***69***	***46***	***51***	***57***	***57***	
	Relevant Grant Dollars	17,485,192	10,475,206	14,653,679	15,132,034	14,338,947	
	Number of Contracts	***1***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	750,000	‡	‡	‡	‡	
	Total Count	***70***	***46***	***51***	***57***	***57***	
	Total Relevant Dollars	18,235,192	10,475,206	14,653,679	15,132,034	14,338,947	-1.16
Breast Cancer Treatment	***Number of Grants***	***536***	***544***	***567***	***618***	***619***	
	Relevant Grant Dollars	152,387,067	154,489,026	176,349,237	209,590,194	196,387,826	
	Number of Contracts	***3***	***3***	***2***	***2***	***4***	
	Relevant Contract Dollars	892,527	4,424,708	3,485,914	2,035,240	4,020,068	
	Total Count	***539***	***547***	***569***	***620***	***623***	
	Total Relevant Dollars	153,279,594	158,913,734	179,835,151	211,625,433	200,407,894	7.30

continued

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‡ Coding not required or requested.

Source: Research Analysis and Evaluation Branch.

Table 16 (cont'd). NCI Special Interest Category (SIC) Dollars for FY2015 – FY2019 – Annual Percent Change*

(This table reports funding for grants and contracts only; intramural projects are excluded.)

Special Interest Categories	Counts and Relevant Dollars†	2015	2016	2017	2018	2019	Average Percent Change/Year
Breast Cancer—Basic	***Number of Grants***	***641***	***614***	***586***	***556***	***567***	
	Relevant Grant Dollars	165,644,820	169,080,913	166,218,155	158,766,455	155,259,816	
	Number of Contracts	***3***	***1***	***5***	***3***	***‡***	
	Relevant Contract Dollars	3,654,832	49,931	3,530,301	40,722	‡	
	Total Count	***644***	***615***	***591***	***559***	***567***	
	Total Relevant Dollars	169,299,652	169,130,844	169,748,456	158,807,177	155,259,816	-2.10
Cancer Stem Cells	***Number of Grants***	***270***	***356***	***396***	***417***	***411***	
	Relevant Grant Dollars	62,046,223	92,830,249	108,363,835	114,972,296	111,157,005	
	Number of Contracts	***6***	***3***	***1***	***‡***	***‡***	
	Relevant Contract Dollars	1,533,679	4,980,440	1,475,002	‡	‡	
	Total Count	***276***	***359***	***397***	***417***	***411***	
	Total Relevant Dollars	63,579,902	97,810,689	109,838,837	114,972,296	111,157,005	16.87
Cancer Survivorship	***Number of Grants***	***398***	***363***	***346***	***385***	***441***	
	Relevant Grant Dollars	171,526,613	162,069,466	167,262,525	203,631,879	238,044,537	
	Number of Contracts	***7***	***7***	***3***	***9***	***11***	
	Relevant Contract Dollars	9,847,866	2,679,641	6,505,519	16,014,755	11,940,379	
	Total Count	***405***	***370***	***349***	***394***	***452***	
	Total Relevant Dollars	181,374,479	164,749,107	173,768,044	219,646,634	249,984,916	9.13
Carcinogenesis, Environmental	***Number of Grants***	***713***	***653***	***631***	***626***	***687***	
	Relevant Grant Dollars	260,061,824	255,935,050	258,785,860	262,220,786	283,174,495	
	Number of Contracts	***9***	***19***	***20***	***20***	***8***	
	Relevant Contract Dollars	3,465,524	13,046,648	11,050,342	16,494,997	33,723,167	
	Total Count	***722***	***672***	***651***	***646***	***695***	
	Total Relevant Dollars	263,527,348	268,981,698	269,836,202	278,715,783	316,897,661	4.84
Cervical Cancer Education	***Number of Grants***	***32***	***27***	***23***	***20***	***24***	
	Relevant Grant Dollars	6,221,573	5,869,483	5,584,906	4,612,220	5,742,343	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***32***	***27***	***23***	***20***	***24***	
	Total Relevant Dollars	6,221,573	5,869,483	5,584,906	4,612,220	5,742,343	-8.55
Chemoprevention	***Number of Grants***	***270***	***228***	***210***	***199***	***203***	
	Relevant Grant Dollars	80,022,566	71,829,951	70,023,623	71,362,862	72,507,610	
	Number of Contracts	***11***	***9***	***8***	***13***	***21***	
	Relevant Contract Dollars	20,758,658	16,414,527	15,912,399	19,797,086	20,876,960	
	Total Count	***281***	***237***	***218***	***212***	***224***	
	Total Relevant Dollars	100,781,224	88,244,478	85,936,022	91,159,948	93,384,569	-1.63
Chemoprevention, Clinical	***Number of Grants***	***22***	***16***	***12***	***10***	***9***	
	Relevant Grant Dollars	12,015,435	9,361,402	8,971,425	7,445,837	7,669,943	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***2***	
	Relevant Contract Dollars	‡	‡	‡	‡	3,114,962	
	Total Count	***22***	***16***	***12***	***10***	***11***	
	Total Relevant Dollars	12,015,435	9,361,402	8,971,425	7,445,837	10,784,905	0.39

continued

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Source: Research Analysis and Evaluation Branch.

Table 16 (cont'd). NCI Special Interest Category (SIC) Dollars for FY2015 – FY2019 – Annual Percent Change*

(This table reports funding for grants and contracts only; intramural projects are excluded.)

Special Interest Categories	Counts and Relevant Dollars†	2015	2016	2017	2018	2019	Average Percent Change/Year
Chemotherapy	***Number of Grants***	***737***	***716***	***732***	***802***	***871***	
	Relevant Grant Dollars	246,109,305	260,723,356	287,462,997	316,933,597	337,533,318	
	Number of Contracts	***7***	***20***	***17***	***13***	***6***	
	Relevant Contract Dollars	5,413,456	13,695,854	14,902,930	7,708,690	5,184,714	
	Total Count	***744***	***736***	***749***	***815***	***877***	
	Total Relevant Dollars	251,522,761	274,419,210	302,365,927	324,642,287	342,718,031	8.06
Child Health	***Number of Grants***	***69***	***67***	***66***	***58***	***80***	
	Relevant Grant Dollars	20,762,243	16,163,223	15,020,069	13,942,846	35,168,895	
	Number of Contracts	***3***	***‡***	***‡***	***2***	***1***	
	Relevant Contract Dollars	195,000	‡	‡	2,037,698	418,241	
	Total Count	***72***	***67***	***66***	***60***	***81***	
	Total Relevant Dollars	20,957,243	16,163,223	15,020,069	15,980,544	35,587,136	24.78
Childhood Cancers	***Number of Grants***	***383***	***398***	***411***	***438***	***585***	
	Relevant Grant Dollars	178,242,101	181,711,926	189,628,119	249,037,676	306,475,154	
	Number of Contracts	***‡***	***‡***	***2***	***2***	***1***	
	Relevant Contract Dollars	‡	‡	589,442	2,476,618	1,878,258	
	Total Count	***383***	***398***	***413***	***440***	***586***	
	Total Relevant Dollars	178,242,101	181,711,926	190,217,561	251,514,294	308,353,412	15.36
Chronic Myeloproliferative Dlisorders	***Number of Grants***	***92***	***78***	***66***	***55***	***60***	
	Relevant Grant Dollars	30,632,366	20,846,554	15,967,470	18,840,695	19,099,884	
	Number of Contracts	***1***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	1,489,494	‡	‡	‡	‡	
	Total Count	***93***	***78***	***66***	***55***	***60***	
	Total Relevant Dollars	32,121,860	20,846,554	15,967,470	18,840,695	19,099,884	-9.78
Clinical Trials, Diagnosis	***Number of Grants***	***149***	***151***	***154***	***154***	***151***	
	Relevant Grant Dollars	53,037,657	60,433,953	61,783,602	59,253,323	65,733,617	
	Number of Contracts	***‡***	***1***	***1***	***1***	***‡***	
	Relevant Contract Dollars	‡	166,395	2,125,347	2,939,599	‡	
	Total Count	***149***	***152***	***155***	***155***	***151***	
	Total Relevant Dollars	53,037,657	60,600,348	63,908,948	62,192,922	65,733,617	5.68
Clinical Trials, Other	***Number of Grants***	***214***	***224***	***227***	***252***	***294***	
	Relevant Grant Dollars	133,237,216	120,494,908	147,623,023	160,552,594	188,858,909	
	Number of Contracts	***5***	***6***	***8***	***6***	***9***	
	Relevant Contract Dollars	27,271,204	42,312,294	32,688,151	24,412,496	26,874,654	
	Total Count	***219***	***230***	***235***	***258***	***303***	
	Total Relevant Dollars	160,508,420	162,807,202	180,311,174	184,965,089	215,733,563	7.85
Clinical Trials, Prevention	***Number of Grants***	***91***	***89***	***93***	***104***	***139***	
	Relevant Grant Dollars	31,032,388	30,908,463	33,917,834	37,773,781	58,723,603	
	Number of Contracts	***5***	***4***	***5***	***6***	***6***	
	Relevant Contract Dollars	10,710,985	9,803,442	9,563,835	7,682,165	7,566,893	
	Total Count	***96***	***93***	***98***	***110***	***145***	
	Total Relevant Dollars	41,743,373	40,711,905	43,481,669	45,455,946	66,290,495	13.68

continued

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† Relevant Dollars = portion of the funded amount relevant to a specific site.

‡ Coding not required or requested.

Source: Research Analysis and Evaluation Branch.

Table 16 (cont'd). NCI Special Interest Category (SIC) Dollars for FY2015 – FY2019 – Annual Percent Change*

(This table reports funding for grants and contracts only; intramural projects are excluded.)

Special Interest Categories	Counts and Relevant Dollars†	2015	2016	2017	2018	2019	Average Percent Change/Year
Clinical Trials, Therapy	***Number of Grants***	***422***	***434***	***446***	***462***	***496***	
	Relevant Grant Dollars	334,042,999	334,329,251	345,754,242	369,134,221	343,190,499	
	Number of Contracts	***15***	***8***	***10***	***7***	***4***	
	Relevant Contract Dollars	60,380,409	100,254,859	100,543,132	136,563,624	10,446,636	
	Total Count	***437***	***442***	***456***	***469***	***500***	
	Total Relevant Dollars	394,423,408	434,584,110	446,297,374	505,697,845	353,637,135	-0.97
Combination Therapy	***Number of Grants***	***907***	***995***	***1,103***	***1,193***	***1,388***	
	Relevant Grant Dollars	266,541,656	301,911,203	361,206,359	408,506,690	466,604,392	
	Number of Contracts	***7***	***2***	***3***	***2***	***7***	
	Relevant Contract Dollars	3,420,624	671,778	2,834,416	993,782	2,658,989	
	Total Count	***914***	***997***	***1,106***	***1,195***	***1,395***	
	Total Relevant Dollars	269,962,280	302,582,981	364,040,775	409,500,472	469,263,381	14.87
Cost Effectiveness	***Number of Grants***	***102***	***106***	***110***	***122***	***139***	
	Relevant Grant Dollars	24,073,416	27,207,714	27,980,143	29,227,852	41,549,580	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***1***	
	Relevant Contract Dollars	‡	‡	‡	‡	149,996	
	Total Count	***102***	***106***	***110***	***122***	***140***	
	Total Relevant Dollars	24,073,416	27,207,714	27,980,143	29,227,852	41,699,576	15.74
Diabetes	***Number of Grants***	***60***	***62***	***64***	***66***	***58***	
	Relevant Grant Dollars	10,029,759	10,282,028	11,766,492	12,640,219	10,809,850	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***60***	***62***	***64***	***66***	***58***	
	Total Relevant Dollars	10,029,759	10,282,028	11,766,492	12,640,219	10,809,850	2.47
Diagnosis	***Number of Grants***	***1,299***	***1,215***	***1,216***	***1,272***	***1,398***	
	Relevant Grant Dollars	539,541,884	530,211,572	595,266,675	666,808,403	701,913,262	
	Number of Contracts	***31***	***43***	***37***	***31***	***21***	
	Relevant Contract Dollars	49,265,219	54,014,496	61,672,252	53,282,401	19,276,242	
	Total Count	***1,330***	***1,258***	***1,253***	***1,303***	***1,419***	
	Total Relevant Dollars	588,807,103	584,226,068	656,938,926	720,090,804	721,189,504	5.36
Dioxin	***Number of Grants***	***5***	***5***	***3***	***1***	***1***	
	Relevant Grant Dollars	383,261	369,498	226,792	59,359	55,977	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***5***	***5***	***3***	***1***	***1***	
	Total Relevant Dollars	383,261	369,498	226,792	59,359	55,977	-30.43
DNA Repair	***Number of Grants***	***427***	***400***	***409***	***422***	***426***	
	Relevant Grant Dollars	100,671,223	100,897,948	107,893,903	119,158,685	120,767,193	
	Number of Contracts	***‡***	***‡***	***‡***	***1***	***1***	
	Relevant Contract Dollars	‡	‡	‡	150,000	991,300	
	Total Count	***427***	***400***	***409***	***423***	***427***	
	Total Relevant Dollars	100,671,223	100,897,948	107,893,903	119,308,685	121,758,492	4.95

continued

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† Relevant Dollars = portion of the funded amount relevant to a specific site.

‡ Coding not required or requested.

Source: Research Analysis and Evaluation Branch.

Table 16 (cont'd). NCI Special Interest Category (SIC) Dollars for FY2015 – FY2019 – Annual Percent Change*

(This table reports funding for grants and contracts only; intramural projects are excluded.)

Special Interest Categories	Counts and Relevant Dollars†	2015	2016	2017	2018	2019	Average Percent Change/Year
Drug Development	***Number of Grants***	***1,856***	***1,742***	***1,772***	***1,787***	***1,882***	
	Relevant Grant Dollars	617,108,394	647,645,213	680,118,152	729,568,548	754,132,073	
	Number of Contracts	***47***	***44***	***31***	***28***	***40***	
	Relevant Contract Dollars	84,307,830	95,203,326	106,973,228	110,388,736	32,805,210	
	Total Count	***1,903***	***1,786***	***1,803***	***1,815***	***1,922***	
	Total Relevant Dollars	701,416,224	742,848,539	787,091,380	839,957,283	786,937,283	3.07
Drug Discovery	***Number of Grants***	***336***	***299***	***318***	***314***	***360***	
	Relevant Grant Dollars	80,704,643	79,153,198	86,983,505	102,664,482	119,635,952	
	Number of Contracts	***5***	***10***	***10***	***9***	***8***	
	Relevant Contract Dollars	2,349,989	4,433,398	3,522,708	7,086,104	5,167,352	
	Total Count	***341***	***309***	***328***	***323***	***368***	
	Total Relevant Dollars	83,054,632	83,586,595	90,506,212	109,750,585	124,803,304	10.97
Drug Resistance	***Number of Grants***	***736***	***800***	***874***	***926***	***1,012***	
	Relevant Grant Dollars	177,796,465	214,729,058	261,870,733	286,366,510	316,801,615	
	Number of Contracts	***3***	***2***	***‡***	***‡***	***1***	
	Relevant Contract Dollars	824,798	646,029	‡	‡	204,459	
	Total Count	***739***	***802***	***874***	***926***	***1,013***	
	Total Relevant Dollars	178,621,263	215,375,087	261,870,733	286,366,510	317,006,074	15.55
Drugs—Natural Products	***Number of Grants***	***274***	***225***	***215***	***216***	***221***	
	Relevant Grant Dollars	57,656,190	54,297,012	54,246,698	53,923,677	53,238,699	
	Number of Contracts	***‡***	***2***	***1***	***3***	***‡***	
	Relevant Contract Dollars	‡	2,574,718	2,136,305	3,660,194	‡	
	Total Count	***274***	***227***	***216***	***219***	***221***	
	Total Relevant Dollars	57,656,190	56,871,730	56,383,003	57,583,871	53,238,699	-1.91
Early Detection	***Number of Grants***	***569***	***542***	***536***	***570***	***586***	
	Relevant Grant Dollars	220,102,816	229,998,056	256,283,853	303,451,666	300,040,995	
	Number of Contracts	***14***	***7***	***6***	***6***	***6***	
	Relevant Contract Dollars	8,686,400	4,028,068	5,328,789	6,666,906	4,213,675	
	Total Count	***583***	***549***	***542***	***576***	***592***	
	Total Relevant Dollars	228,789,216	234,026,124	261,612,642	310,118,572	304,254,670	7.68
Effectiveness Research	***Number of Grants***	***214***	***146***	***133***	***129***	***127***	
	Relevant Grant Dollars	69,440,936	47,442,385	41,402,394	47,924,884	38,294,394	
	Number of Contracts	***2***	***11***	***11***	***7***	***‡***	
	Relevant Contract Dollars	4,377,973	30,894,764	29,146,805	186,026	‡	
	Total Count	***216***	***157***	***144***	***136***	***127***	
	Total Relevant Dollars	73,818,909	78,337,149	70,549,199	48,110,910	38,294,394	-14.01
Endocrinology	***Number of Grants***	***404***	***368***	***360***	***360***	***384***	
	Relevant Grant Dollars	104,762,093	96,691,678	97,228,106	100,568,890	107,119,244	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***404***	***368***	***360***	***360***	***384***	
	Total Relevant Dollars	104,762,093	96,691,678	97,228,106	100,568,890	107,119,244	0.70

continued

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‡ Coding not required or requested.

Source: Research Analysis and Evaluation Branch.

Table 16 (cont'd). NCI Special Interest Category (SIC) Dollars for FY2015 – FY2019 – Annual Percent Change*

(This table reports funding for grants and contracts only; intramural projects are excluded.)

Special Interest Categories	Counts and Relevant Dollars†	2015	2016	2017	2018	2019	Average Percent Change/Year
Energy Balance	***Number of Grants***	***53***	***31***	***28***	***16***	***16***	
	Relevant Grant Dollars	20,847,429	7,628,220	6,286,953	3,473,865	3,258,250	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***53***	***31***	***28***	***16***	***16***	
	Total Relevant Dollars	20,847,429	7,628,220	6,286,953	3,473,865	3,258,250	-32.98
Epidemiology—Biochemical	***Number of Grants***	***358***	***297***	***256***	***255***	***223***	
	Relevant Grant Dollars	164,276,738	146,920,161	124,682,337	118,461,821	101,679,585	
	Number of Contracts	***1***	***1***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	1,716,430	24,966	‡	‡	‡	
	Total Count	***359***	***298***	***256***	***255***	***223***	
	Total Relevant Dollars	165,993,168	146,945,127	124,682,337	118,461,821	101,679,585	-11.44
Epidemiology	***Number of Grants***	***166***	***150***	***158***	***173***	***222***	
	Relevant Grant Dollars	76,666,541	75,587,379	85,439,631	95,193,416	104,428,768	
	Number of Contracts	***27***	***31***	***30***	***32***	***23***	
	Relevant Contract Dollars	91,178,576	111,330,516	121,666,411	117,745,294	49,300,160	
	Total Count	***193***	***181***	***188***	***205***	***245***	
	Total Relevant Dollars	167,845,117	186,917,895	207,106,043	212,938,710	153,728,928	-0.71
Epidemiology, Environmental	***Number of Grants***	***230***	***182***	***163***	***147***	***138***	
	Relevant Grant Dollars	93,061,131	74,257,282	68,678,162	66,673,242	55,754,307	
	Number of Contracts	***4***	***2***	***4***	***1***	***1***	
	Relevant Contract Dollars	3,257,460	1,417,866	1,684,591	157,967	49,394	
	Total Count	***234***	***184***	***167***	***148***	***139***	
	Total Relevant Dollars	96,318,591	75,675,148	70,362,753	66,831,209	55,803,701	-12.49
Epigenetics	***Number of Grants***	***768***	***778***	***798***	***859***	***946***	
	Relevant Grant Dollars	185,757,320	203,722,809	230,130,230	269,515,321	293,352,295	
	Number of Contracts	***1***	***2***	***2***	***1***	***1***	
	Relevant Contract Dollars	80,000	147,571	329,946	80,000	80,000	
	Total Count	***769***	***780***	***800***	***860***	***947***	
	Total Relevant Dollars	185,837,320	203,870,380	230,460,176	269,595,321	293,432,295	12.14
Gene Mapping, Human	***Number of Grants***	***146***	***127***	***105***	***97***	***105***	
	Relevant Grant Dollars	48,294,930	46,905,132	37,032,434	30,940,689	31,753,493	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***146***	***127***	***105***	***97***	***105***	
	Total Relevant Dollars	48,294,930	46,905,132	37,032,434	30,940,689	31,753,493	-9.44
Gene Mapping, Non-Human	***Number of Grants***	***66***	***50***	***45***	***37***	***33***	
	Relevant Grant Dollars	9,387,204	9,836,690	8,912,665	7,412,413	6,119,601	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***66***	***50***	***45***	***37***	***33***	
	Total Relevant Dollars	9,387,204	9,836,690	8,912,665	7,412,413	6,119,601	-9.72

continued

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‡ Coding not required or requested.

Source: Research Analysis and Evaluation Branch.

Table 16 (cont'd). NCI Special Interest Category (SIC) Dollars for FY2015 – FY2019 – Annual Percent Change*

(This table reports funding for grants and contracts only; intramural projects are excluded.)

Special Interest Categories	Counts and Relevant Dollars†	2015	2016	2017	2018	2019	Average Percent Change/Year
Gene Transfer, Clinical	***Number of Grants***	***16***	***17***	***10***	***6***	***5***	
	Relevant Grant Dollars	4,512,499	4,853,792	2,673,354	1,318,434	1,607,239	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***16***	***17***	***10***	***6***	***5***	
	Total Relevant Dollars	4,512,499	4,853,792	2,673,354	1,318,434	1,607,239	
Genetic Testing Research, Human	***Number of Grants***	***91***	***85***	***65***	***62***	***59***	***-16.53***
	Relevant Grant Dollars	38,489,954	29,475,413	23,204,606	22,217,351	32,028,580	
	Number of Contracts	***‡***	***1***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	75,000	‡	‡	‡	
	Total Count	***91***	***86***	***65***	***62***	***59***	
	Total Relevant Dollars	38,489,954	29,550,408	23,204,606	22,217,351	32,028,580	-1.19
Genomics	***Number of Grants***	***1,018***	***1,077***	***1,096***	***1,156***	***1,274***	
	Relevant Grant Dollars	341,321,721	389,134,110	405,076,761	491,680,665	519,129,670	
	Number of Contracts	***9***	***12***	***8***	***4***	***5***	
	Relevant Contract Dollars	55,539,001	83,510,228	81,580,679	83,218,582	1,644,854	
	Total Count	***1,027***	***1,089***	***1,104***	***1,160***	***1,279***	
	Total Relevant Dollars	396,860,722	472,644,337	486,657,439	574,899,247	520,774,524	7.69
Health Literacy	***Number of Grants***	***81***	***64***	***57***	***58***	***64***	
	Relevant Grant Dollars	18,398,631	15,279,155	14,215,534	15,380,028	27,404,885	
	Number of Contracts	***‡***	***‡***	***1***	***1***	***‡***	
	Relevant Contract Dollars	‡	‡	1,200,000	1,200,000	‡	
	Total Count	***81***	***64***	***58***	***59***	***64***	
	Total Relevant Dollars	18,398,631	15,279,155	15,415,534	16,580,028	27,404,885	14.19
Health Promotion	***Number of Grants***	***262***	***222***	***193***	***191***	***195***	
	Relevant Grant Dollars	92,700,255	69,278,601	64,108,503	62,959,503	74,943,015	
	Number of Contracts	***3***	***3***	***3***	***2***	***5***	
	Relevant Contract Dollars	1,673,149	2,081,656	582,324	790,283	301,128	
	Total Count	***265***	***225***	***196***	***193***	***200***	
	Total Relevant Dollars	94,373,404	71,360,257	64,690,827	63,749,786	75,244,143	-4.29
Health Care Delivery	***Number of Grants***	***322***	***293***	***303***	***305***	***361***	
	Relevant Grant Dollars	200,905,989	178,992,169	187,497,187	230,065,054	251,771,190	
	Number of Contracts	***5***	***17***	***20***	***28***	***14***	
	Relevant Contract Dollars	5,400,399	32,071,822	31,462,158	35,343,565	8,317,853	
	Total Count	***327***	***310***	***323***	***333***	***375***	
	Total Relevant Dollars	206,306,388	211,063,992	218,959,344	265,408,619	260,089,043	6.31
Helicobacter	***Number of Grants***	***24***	***19***	***14***	***11***	***11***	
	Relevant Grant Dollars	8,287,809	7,837,594	6,687,868	5,287,620	5,686,397	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***24***	***19***	***14***	***11***	***11***	
	Total Relevant Dollars	8,287,809	7,837,594	6,687,868	5,287,620	5,686,397	-8.37

continued

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Source: Research Analysis and Evaluation Branch.

Table 16 (cont'd). NCI Special Interest Category (SIC) Dollars for FY2015 – FY2019 – Annual Percent Change*

(This table reports funding for grants and contracts only; intramural projects are excluded.)

Special Interest Categories	Counts and Relevant Dollars†	2015	2016	2017	2018	2019	Average Percent Change/Year
Hematology	***Number of Grants***	***1,072***	***1,022***	***1,007***	***964***	***969***	
	Relevant Grant Dollars	443,608,933	449,886,880	458,813,154	481,919,759	471,321,194	
	Number of Contracts	***5***	***3***	***2***	***2***	***1***	
	Relevant Contract Dollars	3,259,086	2,262,571	1,547,327	19,191	54,994	
	Total Count	***1,077***	***1,025***	***1,009***	***966***	***970***	
	Total Relevant Dollars	446,868,019	452,149,451	460,360,481	481,938,950	471,376,188	1.37
Hematopoietic Stem Cell Research	***Number of Grants***	***256***	***245***	***236***	***204***	***196***	
	Relevant Grant Dollars	88,073,334	84,627,744	98,480,686	77,798,511	80,767,226	
	Number of Contracts	***‡***	***1***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	728,795	‡	‡	‡	
	Total Count	***256***	***246***	***236***	***204***	***196***	
	Total Relevant Dollars	88,073,334	85,356,538	98,480,686	77,798,511	80,767,226	-1.22
Hormone Replacement Therapy	***Number of Grants***	***6***	***11***	***12***	***15***	***13***	
	Relevant Grant Dollars	420,973	2,574,377	2,570,173	2,958,043	3,029,573	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***6***	***11***	***12***	***15***	***13***	
	Total Relevant Dollars	420,973	2,574,377	2,570,173	2,958,043	3,029,573	132.22
Hospice	***Number of Grants***	***21***	***23***	***24***	***23***	***28***	
	Relevant Grant Dollars	5,068,406	6,571,656	6,543,607	7,051,315	13,027,467	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***21***	***23***	***24***	***23***	***28***	
	Total Relevant Dollars	5,068,406	6,571,656	6,543,607	7,051,315	13,027,467	30.43
Human Genome	***Number of Grants***	***731***	***741***	***686***	***726***	***886***	
	Relevant Grant Dollars	270,053,324	291,591,849	277,508,890	294,842,598	328,436,799	
	Number of Contracts	***‡***	***6***	***6***	***3***	***4***	
	Relevant Contract Dollars	‡	20,797,623	1,278,048	4,896,980	640,754	
	Total Count	***731***	***747***	***692***	***729***	***890***	
	Total Relevant Dollars	270,053,324	312,389,472	278,786,937	299,739,578	329,077,553	5.56
Iatrogenesis	***Number of Grants***	***187***	***202***	***218***	***228***	***273***	
	Relevant Grant Dollars	65,666,762	73,902,588	83,792,361	92,238,911	110,764,086	
	Number of Contracts	***9***	***15***	***12***	***14***	***1***	
	Relevant Contract Dollars	7,954,033	10,094,584	8,942,518	4,245,161	951,548	
	Total Count	***196***	***217***	***230***	***242***	***274***	
	Total Relevant Dollars	73,620,795	83,997,172	92,734,879	96,484,072	111,715,633	11.08
Imaging	***Number of Grants***	***793***	***780***	***824***	***861***	***912***	
	Relevant Grant Dollars	328,599,329	333,313,090	389,735,661	419,041,652	425,798,706	
	Number of Contracts	***3***	***10***	***13***	***5***	***7***	
	Relevant Contract Dollars	22,477,850	31,629,404	37,758,418	31,825,401	5,313,249	
	Total Count	***796***	***790***	***837***	***866***	***919***	
	Total Relevant Dollars	351,077,179	364,942,494	427,494,079	450,867,052	431,111,955	5.54

continued

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Source: Research Analysis and Evaluation Branch.

Table 16 (cont'd). NCI Special Interest Category (SIC) Dollars for FY2015 – FY2019 – Annual Percent Change*

(This table reports funding for grants and contracts only; intramural projects are excluded.)

Special Interest Categories	Counts and Relevant Dollars†	2015	2016	2017	2018	2019	Average Percent Change/Year
Immunization	***Number of Grants***	***334***	***341***	***346***	***366***	***476***	
	Relevant Grant Dollars	102,651,388	108,683,779	124,310,103	145,386,052	202,878,668	
	Number of Contracts	***7***	***11***	***13***	***8***	***18***	
	Relevant Contract Dollars	28,016,244	40,549,330	43,053,952	39,543,607	6,065,548	
	Total Count	***341***	***352***	***359***	***374***	***494***	
	Total Relevant Dollars	130,667,632	149,233,109	167,364,055	184,929,659	208,944,216	12.46
Immunology	***Number of Grants***	***1,385***	***1,386***	***1,489***	***1,631***	***1,853***	
	Relevant Grant Dollars	473,974,158	515,430,748	640,826,692	698,892,998	793,159,253	
	Number of Contracts	***14***	***18***	***20***	***15***	***24***	
	Relevant Contract Dollars	66,471,724	86,509,909	98,113,523	91,031,557	8,326,879	
	Total Count	***1,399***	***1,404***	***1,509***	***1,646***	***1,877***	
	Total Relevant Dollars	540,445,882	601,940,657	738,940,215	789,924,555	801,486,132	10.62
Immunotherapy	***Number of Grants***	***536***	***612***	***716***	***842***	***1,011***	
	Relevant Grant Dollars	155,133,285	197,273,311	332,571,318	368,977,475	450,135,415	
	Number of Contracts	***3***	***7***	***6***	***6***	***18***	
	Relevant Contract Dollars	3,683,673	10,734,319	4,474,792	2,288,367	6,643,093	
	Total Count	***539***	***619***	***722***	***848***	***1,029***	
	Total Relevant Dollars	158,816,958	208,007,630	337,046,109	371,265,842	456,778,507	31.55
Inflammation	***Number of Grants***	***489***	***459***	***482***	***493***	***509***	
	Relevant Grant Dollars	112,167,081	112,244,989	116,025,025	120,560,329	128,327,461	
	Number of Contracts	***3***	***3***	***3***	***3***	***2***	
	Relevant Contract Dollars	14,497,899	18,472,380	20,833,026	19,519,964	134,109	
	Total Count	***492***	***462***	***485***	***496***	***511***	
	Total Relevant Dollars	126,664,980	130,717,368	136,858,051	140,080,293	128,461,570	0.49
Information Dissemination	***Number of Grants***	***536***	***515***	***518***	***514***	***523***	
	Relevant Grant Dollars	210,348,487	213,783,646	215,896,290	228,167,349	234,086,074	
	Number of Contracts	***10***	***18***	***25***	***16***	***2***	
	Relevant Contract Dollars	3,998,692	7,900,187	17,915,927	15,220,485	260,226	
	Total Count	***546***	***533***	***543***	***530***	***525***	
	Total Relevant Dollars	214,347,179	221,683,833	233,812,217	243,387,833	234,346,300	2.32
Metastasis	***Number of Grants***	***1,320***	***1,332***	***1,307***	***1,337***	***1,385***	
	Relevant Grant Dollars	358,876,606	380,888,828	398,062,542	422,657,303	439,046,764	
	Number of Contracts	***4***	***3***	***2***	***2***	***2***	
	Relevant Contract Dollars	1,108,062	2,899,297	2,999,993	112,339	299,537	
	Total Count	***1,324***	***1,335***	***1,309***	***1,339***	***1,387***	
	Total Relevant Dollars	359,984,668	383,788,124	401,062,535	422,769,641	439,346,301	5.11
Microbiome	***Number of Grants***	***54***	***78***	***104***	***135***	***153***	
	Relevant Grant Dollars	13,679,639	24,150,503	36,476,639	56,410,998	49,546,365	
	Number of Contracts	***‡***	***2***	***‡***	***2***	***‡***	
	Relevant Contract Dollars	‡	450,141	‡	130,750	‡	
	Total Count	***54***	***80***	***104***	***137***	***153***	
	Total Relevant Dollars	13,679,639	24,600,644	36,476,639	56,541,748	49,546,365	42.69

continued

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† Relevant Dollars = portion of the funded amount relevant to a specific site.

‡ Coding not required or requested.

Source: Research Analysis and Evaluation Branch.

Table 16 (cont'd). NCI Special Interest Category (SIC) Dollars for FY2015 – FY2019 – Annual Percent Change*

(This table reports funding for grants and contracts only; intramural projects are excluded.)

Special Interest Categories	Counts and Relevant Dollars†	2015	2016	2017	2018	2019	Average Percent Change/Year
Mind/Body Research	***Number of Grants***	***40***	***29***	***25***	***21***	***24***	
	Relevant Grant Dollars	10,026,196	9,007,115	7,780,748	6,812,260	7,568,135	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***40***	***29***	***25***	***21***	***24***	
	Total Relevant Dollars	10,026,196	9,007,115	7,780,748	6,812,260	7,568,135	-6.28
Molecular Disease	***Number of Grants***	***4,655***	***4,513***	***4,399***	***4,312***	***4,072***	
	Relevant Grant Dollars	1,782,526,277	1,882,712,427	1,931,925,940	2,053,008,956	1,925,663,390	
	Number of Contracts	***41***	***59***	***53***	***52***	***59***	
	Relevant Contract Dollars	79,018,098	153,297,602	136,964,093	175,671,451	50,132,155	
	Total Count	***4,696***	***4,572***	***4,452***	***4,364***	***4,131***	
	Total Relevant Dollars	1,861,544,375	2,036,010,029	2,068,890,033	2,228,680,407	1,975,795,545	1.84
Molecular Imaging	***Number of Grants***	***478***	***410***	***390***	***354***	***327***	
	Relevant Grant Dollars	156,307,861	141,492,077	143,199,846	133,169,439	126,093,554	
	Number of Contracts	***1***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	118,783	‡	‡	‡	‡	
	Total Count	***479***	***410***	***390***	***354***	***327***	
	Total Relevant Dollars	156,426,644	141,492,077	143,199,846	133,169,439	126,093,554	-5.16
Molecular Targeted Prevention	***Number of Grants***	***166***	***144***	***131***	***136***	***158***	
	Relevant Grant Dollars	46,590,174	43,516,697	40,249,335	46,200,693	52,588,843	
	Number of Contracts	***1***	***1***	***1***	***1***	***2***	
	Relevant Contract Dollars	790,790	547,510	509,347	526,781	299,499	
	Total Count	***167***	***145***	***132***	***137***	***160***	
	Total Relevant Dollars	47,380,964	44,064,207	40,758,682	46,727,473	52,888,342	3.33
Molecular Targeted Therapy	***Number of Grants***	***1,807***	***1,908***	***2,038***	***2,257***	***2,519***	
	Relevant Grant Dollars	581,779,389	656,567,963	742,802,310	865,086,938	943,018,481	
	Number of Contracts	***16***	***6***	***5***	***4***	***8***	
	Relevant Contract Dollars	53,873,784	90,988,532	92,251,110	128,114,856	3,150,081	
	Total Count	***1,823***	***1,914***	***2,043***	***2,261***	***2,527***	
	Total Relevant Dollars	635,653,173	747,556,494	835,053,420	993,201,794	946,168,562	10.88
Nanotechnology	***Number of Grants***	***378***	***376***	***417***	***443***	***449***	
	Relevant Grant Dollars	106,197,770	114,941,122	130,016,571	131,776,237	137,795,320	
	Number of Contracts	***9***	***5***	***5***	***4***	***3***	
	Relevant Contract Dollars	56,177,120	64,879,438	80,950,539	78,759,554	398,887	
	Total Count	***387***	***381***	***422***	***447***	***452***	
	Total Relevant Dollars	162,374,890	179,820,560	210,967,110	210,535,791	138,194,206	-1.62
Neurofibromatosis	***Number of Grants***	***13***	***19***	***17***	***18***	***20***	
	Relevant Grant Dollars	3,686,798	3,936,995	3,556,637	3,791,093	6,683,411	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***13***	***19***	***17***	***18***	***20***	
	Total Relevant Dollars	3,686,798	3,936,995	3,556,637	3,791,093	6,683,411	20.00

continued

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† Relevant Dollars = portion of the funded amount relevant to a specific site.

‡ Coding not required or requested.

Source: Research Analysis and Evaluation Branch.

Table 16 (cont'd). NCI Special Interest Category (SIC) Dollars for FY2015 – FY2019 – Annual Percent Change*

(This table reports funding for grants and contracts only; intramural projects are excluded.)

Special Interest Categories	Counts and Relevant Dollars†	2015	2016	2017	2018	2019	Average Percent Change/Year
Non-Hematopoietic Stem Cell Research	***Number of Grants***	***234***	***190***	***179***	***143***	***132***	
	Relevant Grant Dollars	53,559,986	43,034,964	60,699,959	40,471,293	34,680,251	
	Number of Contracts	***‡***	***2***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	3,484,164	‡	‡	‡	
	Total Count	***234***	***192***	***179***	***143***	***132***	
	Total Relevant Dollars	53,559,986	46,519,128	60,699,959	40,471,293	34,680,251	-7.57
Nursing Research	***Number of Grants***	***32***	***28***	***27***	***27***	***28***	
	Relevant Grant Dollars	8,132,143	8,044,965	7,943,679	9,848,194	12,283,637	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***32***	***28***	***27***	***27***	***28***	
	Total Relevant Dollars	8,132,143	8,044,965	7,943,679	9,848,194	12,283,637	11.59
Nutrition	***Number of Grants***	***399***	***330***	***303***	***305***	***321***	
	Relevant Grant Dollars	117,756,071	102,564,615	90,773,169	101,297,729	100,499,788	
	Number of Contracts	***10***	***7***	***6***	***9***	***5***	
	Relevant Contract Dollars	4,220,813	3,452,083	3,005,520	3,462,874	1,880,590	
	Total Count	***409***	***337***	***309***	***314***	***326***	
	Total Relevant Dollars	121,976,884	106,016,699	93,778,689	104,760,603	102,380,378	-3.79
Nutrition Monitoring	***Number of Grants***	***24***	***19***	***19***	***21***	***24***	
	Relevant Grant Dollars	9,882,676	5,485,202	6,478,782	8,999,541	7,573,449	
	Number of Contracts	***1***	***1***	***2***	***1***	***1***	
	Relevant Contract Dollars	323,154	435,711	456,632	604,252	448,385	
	Total Count	***25***	***20***	***21***	***22***	***25***	
	Total Relevant Dollars	10,205,830	5,920,913	6,935,414	9,603,793	8,021,834	0.71
Obesity	***Number of Grants***	***231***	***202***	***200***	***194***	***196***	
	Relevant Grant Dollars	64,004,183	55,081,497	52,003,841	51,223,096	51,490,956	
	Number of Contracts	***3***	***1***	***1***	***2***	***1***	
	Relevant Contract Dollars	3,323,159	2,190,039	2,037,388	2,232,122	504,052	
	Total Count	***234***	***203***	***201***	***196***	***197***	
	Total Relevant Dollars	67,327,342	57,271,546	54,041,229	53,455,218	51,995,008	-6.09
Occupational Cancer	***Number of Grants***	***27***	***23***	***14***	***12***	***11***	
	Relevant Grant Dollars	6,560,117	5,893,989	3,931,219	3,482,526	3,068,747	
	Number of Contracts	***‡***	***‡***	***‡***	***1***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	87,500	‡	
	Total Count	***27***	***23***	***14***	***13***	***11***	
	Total Relevant Dollars	6,560,117	5,893,989	3,931,219	3,570,026	3,068,747	-16.67
Oncogenes	***Number of Grants***	***1,414***	***1,310***	***1,226***	***1,141***	***1,108***	
	Relevant Grant Dollars	402,124,198	403,153,878	378,546,779	359,141,456	357,538,899	
	Number of Contracts	***3***	***3***	***3***	***3***	***2***	
	Relevant Contract Dollars	1,510,068	1,968,626	1,711,492	1,213,234	155,151	
	Total Count	***1,417***	***1,313***	***1,229***	***1,144***	***1,110***	
	Total Relevant Dollars	403,634,266	405,122,504	380,258,271	360,354,689	357,694,050	-2.94

continued

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‡ Coding not required or requested.

Source: Research Analysis and Evaluation Branch.

Table 16 (cont'd). NCI Special Interest Category (SIC) Dollars for FY2015 – FY2019 – Annual Percent Change*

(This table reports funding for grants and contracts only; intramural projects are excluded.)

Special Interest Categories	Counts and Relevant Dollars†	2015	2016	2017	2018	2019	Average Percent Change/Year
Organ Transplant Research	***Number of Grants***	***111***	***110***	***104***	***103***	***103***	
	Relevant Grant Dollars	45,618,921	47,946,930	43,054,531	47,912,539	52,525,631	
	Number of Contracts	***‡***	***1***	***‡***	***‡***	***1***	
	Relevant Contract Dollars	‡	728,795	‡	‡	149,849	
	Total Count	***111***	***111***	***104***	***103***	***104***	
	Total Relevant Dollars	45,618,921	48,675,724	43,054,531	47,912,539	52,675,480	4.09
Osteoporosis	***Number of Grants***	***6***	***4***	***2***	***2***	***3***	
	Relevant Grant Dollars	1,557,646	768,584	144,894	558,679	678,519	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***6***	***4***	***2***	***2***	***3***	
	Total Relevant Dollars	1,557,646	768,584	144,894	558,679	678,519	43.80
Pain	***Number of Grants***	***60***	***54***	***53***	***58***	***76***	
	Relevant Grant Dollars	9,313,288	11,455,185	12,594,778	19,794,438	20,812,196	
	Number of Contracts	***‡***	***‡***	***1***	***‡***	***3***	
	Relevant Contract Dollars	‡	‡	99,932	‡	1,920,403	
	Total Count	***60***	***54***	***54***	***58***	***79***	
	Total Relevant Dollars	9,313,288	11,455,185	12,694,710	19,794,438	22,732,599	26.15
Palliative Care	***Number of Grants***	***51***	***49***	***50***	***54***	***73***	
	Relevant Grant Dollars	10,957,597	13,862,941	14,389,798	17,555,810	32,957,338	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***51***	***49***	***50***	***54***	***73***	
	Total Relevant Dollars	10,957,597	13,862,941	14,389,798	17,555,810	32,957,338	35.01
PAP Testing	***Number of Grants***	***23***	***21***	***22***	***18***	***18***	
	Relevant Grant Dollars	4,772,033	5,776,068	5,476,069	4,379,452	4,575,890	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***23***	***21***	***22***	***18***	***18***	
	Total Relevant Dollars	4,772,033	5,776,068	5,476,069	4,379,452	4,575,890	0.08
Pediatric Research	***Number of Grants***	***473***	***481***	***488***	***499***	***588***	
	Relevant Grant Dollars	216,588,476	220,383,334	227,499,715	280,431,656	347,361,731	
	Number of Contracts	***3***	***‡***	***2***	***4***	***2***	
	Relevant Contract Dollars	195,000	‡	589,442	4,514,316	2,296,499	
	Total Count	***476***	***481***	***490***	***503***	***590***	
	Total Relevant Dollars	216,783,476	220,383,334	228,089,157	284,945,972	349,658,230	13.19
Personalized Health Care	***Number of Grants***	***511***	***485***	***486***	***490***	***501***	
	Relevant Grant Dollars	153,442,074	144,856,624	170,929,897	170,539,038	174,575,204	
	Number of Contracts	***3***	***4***	***5***	***3***	***2***	
	Relevant Contract Dollars	25,437,656	49,185,985	44,910,814	63,079,767	398,964	
	Total Count	***514***	***489***	***491***	***493***	***503***	
	Total Relevant Dollars	178,879,730	194,042,608	215,840,711	233,618,805	174,974,168	0.71

continued

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† Relevant Dollars = portion of the funded amount relevant to a specific site.

‡ Coding not required or requested.

Source: Research Analysis and Evaluation Branch.

Table 16 (cont'd). NCI Special Interest Category (SIC) Dollars for FY2015 – FY2019 – Annual Percent Change*

(This table reports funding for grants and contracts only; intramural projects are excluded.)

Special Interest Categories	Counts and Relevant Dollars†	2015	2016	2017	2018	2019	Average Percent Change/Year
Pharmacogenetics	***Number of Grants***	***149***	***149***	***141***	***124***	***109***	
	Relevant Grant Dollars	37,555,190	41,108,745	35,728,605	33,417,628	29,010,516	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***149***	***149***	***141***	***124***	***109***	
	Total Relevant Dollars	37,555,190	41,108,745	35,728,605	33,417,628	29,010,516	-5.82
Prevention	***Number of Grants***	***839***	***770***	***733***	***778***	***877***	
	Relevant Grant Dollars	339,430,238	318,281,486	333,968,556	373,997,908	426,375,012	
	Number of Contracts	***33***	***29***	***29***	***29***	***33***	
	Relevant Contract Dollars	51,922,887	54,150,632	48,177,764	33,218,787	29,446,792	
	Total Count	***872***	***799***	***762***	***807***	***910***	
	Total Relevant Dollars	391,353,125	372,432,118	382,146,320	407,216,695	455,821,804	4.07
Proteomics	***Number of Grants***	***570***	***566***	***547***	***559***	***594***	
	Relevant Grant Dollars	134,218,056	140,643,812	140,517,434	158,420,435	161,344,098	
	Number of Contracts	***3***	***1***	***4***	***2***	***2***	
	Relevant Contract Dollars	53,481,462	62,182,698	81,234,900	78,521,602	111,702	
	Total Count	***573***	***567***	***551***	***561***	***596***	
	Total Relevant Dollars	187,699,518	202,826,510	221,752,334	236,942,036	161,455,800	-1.90
Radiation, Electromagnetic Fields	***Number of Grants***	***3***	***4***	***3***	***4***	***3***	
	Relevant Grant Dollars	1,015,296	1,291,914	811,428	989,649	692,156	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***3***	***4***	***3***	***4***	***3***	
	Total Relevant Dollars	1,015,296	1,291,914	811,428	989,649	692,156	-4.51
Radiation, Ionizing	***Number of Grants***	***69***	***58***	***58***	***55***	***56***	
	Relevant Grant Dollars	16,375,603	14,849,251	16,498,303	16,441,421	16,222,082	
	Number of Contracts	***1***	***1***	***2***	***2***	***2***	
	Relevant Contract Dollars	291,030	157,967	455,571	2,157,951	199,394	
	Total Count	***70***	***59***	***60***	***57***	***58***	
	Total Relevant Dollars	16,666,633	15,007,218	16,953,874	18,599,372	16,421,476	0.25
Radiation, Ionizing Diagnosis	***Number of Grants***	***235***	***218***	***203***	***199***	***208***	
	Relevant Grant Dollars	71,896,359	72,895,969	71,819,401	70,963,666	71,915,134	
	Number of Contracts	***1***	***1***	***2***	***‡***	***1***	
	Relevant Contract Dollars	750,000	149,751	343,950	‡	982,108	
	Total Count	***236***	***219***	***205***	***199***	***209***	
	Total Relevant Dollars	72,646,359	73,045,720	72,163,351	70,963,666	72,897,242	0.10
Radiation, Ionizing Radiotherapy	***Number of Grants***	***370***	***385***	***384***	***389***	***419***	
	Relevant Grant Dollars	113,662,465	120,584,371	122,782,173	133,404,212	146,440,571	
	Number of Contracts	***14***	***10***	***8***	***9***	***8***	
	Relevant Contract Dollars	5,521,043	8,940,664	6,518,356	3,495,309	4,058,840	
	Total Count	***384***	***395***	***392***	***398***	***427***	
	Total Relevant Dollars	119,183,508	129,525,035	129,300,529	136,899,521	150,499,411	6.08

continued

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‡ Coding not required or requested.

Source: Research Analysis and Evaluation Branch.

Table 16 (cont'd). NCI Special Interest Category (SIC) Dollars for FY2015 – FY2019 – Annual Percent Change*

(This table reports funding for grants and contracts only; intramural projects are excluded.)

Special Interest Categories	Counts and Relevant Dollars†	2015	2016	2017	2018	2019	Average Percent Change/Year
Radiation, Low-Level Ionizing	***Number of Grants***	***3***	***3***	***1***	***2***	***2***	
	Relevant Grant Dollars	489,579	523,999	25,740	298,779	431,578	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***3***	***3***	***1***	***2***	***2***	
	Total Relevant Dollars	489,579	523,999	25,740	298,779	431,578	254.29
Radiation, Magnetic Resonance Imaging	***Number of Grants***	***288***	***250***	***249***	***249***	***260***	
	Relevant Grant Dollars	91,673,750	78,728,770	86,855,863	85,378,228	87,648,412	
	Number of Contracts	***‡***	***1***	***1***	***1***	***‡***	
	Relevant Contract Dollars	‡	225,000	277,650	281,104	‡	
	Total Count	***288***	***251***	***250***	***250***	***260***	
	Total Relevant Dollars	91,673,750	78,953,770	87,133,513	85,659,332	87,648,412	-0.72
Radiation, Mammography	***Number of Grants***	***75***	***59***	***58***	***56***	***61***	
	Relevant Grant Dollars	20,990,452	14,435,131	15,339,130	14,531,883	15,006,659	
	Number of Contracts	***1***	***‡***	***‡***	***1***	***‡***	
	Relevant Contract Dollars	750,000	‡	‡	12,500	‡	
	Total Count	***76***	***59***	***58***	***57***	***61***	
	Total Relevant Dollars	21,740,452	14,435,131	15,339,130	14,544,383	15,006,659	-7.34
Radiation, Non-Ionizing	***Number of Grants***	***111***	***103***	***99***	***96***	***84***	
	Relevant Grant Dollars	25,836,973	23,741,839	25,569,233	26,339,672	24,358,812	
	Number of Contracts	***1***	***‡***	***2***	***‡***	***‡***	
	Relevant Contract Dollars	35,000	‡	1,791,728	‡	‡	
	Total Count	***112***	***103***	***101***	***96***	***84***	
	Total Relevant Dollars	25,871,973	23,741,839	27,360,961	26,339,672	24,358,812	-1.06
Radiation, Non-Ionizing Diagnosis	***Number of Grants***	***376***	***328***	***313***	***307***	***310***	
	Relevant Grant Dollars	134,607,297	120,965,607	124,041,475	112,998,401	117,939,604	
	Number of Contracts	***‡***	***2***	***4***	***1***	***2***	
	Relevant Contract Dollars	‡	1,724,725	1,949,613	281,104	1,132,090	
	Total Count	***376***	***330***	***317***	***308***	***312***	
	Total Relevant Dollars	134,607,297	122,690,332	125,991,087	113,279,505	119,071,694	-2.78
Radiation, Non-Ionizing Radiotherapy	***Number of Grants***	***156***	***149***	***146***	***156***	***163***	
	Relevant Grant Dollars	53,934,953	52,954,709	53,900,397	59,155,854	63,806,196	
	Number of Contracts	***2***	***‡***	***3***	***2***	***10***	
	Relevant Contract Dollars	1,798,842	‡	4,206,536	321,677	6,071,668	
	Total Count	***158***	***149***	***149***	***158***	***173***	
	Total Relevant Dollars	55,733,795	52,954,709	58,106,933	59,477,531	69,877,865	6.15
Radiation, UV	***Number of Grants***	***80***	***69***	***68***	***63***	***57***	
	Relevant Grant Dollars	18,726,175	15,072,662	16,146,542	16,770,517	16,613,599	
	Number of Contracts	***1***	***‡***	***1***	***‡***	***‡***	
	Relevant Contract Dollars	35,000	‡	1,494,124	‡	‡	
	Total Count	***81***	***69***	***69***	***63***	***57***	
	Total Relevant Dollars	18,761,175	15,072,662	17,640,666	16,770,517	16,613,599	-2.12

continued

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‡ Coding not required or requested.

Source: Research Analysis and Evaluation Branch.

Table 16 (cont'd). NCI Special Interest Category (SIC) Dollars for FY2015 – FY2019 – Annual Percent Change*

(This table reports funding for grants and contracts only; intramural projects are excluded.)

Special Interest Categories	Counts and Relevant Dollars†	2015	2016	2017	2018	2019	Average Percent Change/Year
Rare Diseases	***Number of Grants***	***53***	***51***	***43***	***38***	***54***	
	Relevant Grant Dollars	14,081,488	13,348,150	10,726,359	10,401,147	38,288,227	
	Number of Contracts	***‡***	***‡***	***1***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	49,950	‡	‡	
	Total Count	***53***	***51***	***44***	***38***	***54***	
	Total Relevant Dollars	14,081,488	13,348,150	10,776,309	10,401,147	38,288,227	60.04
Rehabilitation	***Number of Grants***	***140***	***134***	***129***	***139***	***152***	
	Relevant Grant Dollars	51,747,174	54,957,761	56,664,104	55,517,413	61,304,559	
	Number of Contracts	***1***	***3***	***‡***	***1***	***‡***	
	Relevant Contract Dollars	149,925	1,694,020	‡	1,499,993	‡	
	Total Count	***141***	***137***	***129***	***140***	***152***	
	Total Relevant Dollars	51,897,099	56,651,781	56,664,104	57,017,406	61,304,559	4.33
Rural Populations	***Number of Grants***	***88***	***80***	***84***	***90***	***120***	
	Relevant Grant Dollars	45,918,623	39,972,778	47,225,578	58,851,993	98,480,127	
	Number of Contracts	***‡***	***‡***	***‡***	***1***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	56,000	‡	
	Total Count	***88***	***80***	***84***	***91***	***120***	
	Total Relevant Dollars	45,918,623	39,972,778	47,225,578	58,907,993	98,480,127	24.28
Sexually Transmitted Diseases	***Number of Grants***	***52***	***38***	***37***	***35***	***39***	
	Relevant Grant Dollars	12,192,170	11,054,662	11,261,006	10,790,237	10,654,262	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***52***	***38***	***37***	***35***	***39***	
	Total Relevant Dollars	12,192,170	11,054,662	11,261,006	10,790,237	10,654,262	-3.22
Sleep Disorders	***Number of Grants***	***45***	***51***	***48***	***60***	***70***	
	Relevant Grant Dollars	7,520,997	9,575,112	10,817,251	18,354,414	16,970,680	
	Number of Contracts	***1***	***‡***	***‡***	***‡***	***1***	
	Relevant Contract Dollars	35,000	‡	‡	‡	678,153	
	Total Count	***46***	***51***	***48***	***60***	***71***	
	Total Relevant Dollars	7,555,997	9,575,112	10,817,251	18,354,414	17,648,833	26.38
Small Molecules	***Number of Grants***	***544***	***542***	***556***	***592***	***646***	
	Relevant Grant Dollars	112,555,106	116,837,379	128,242,096	139,220,927	166,827,632	
	Number of Contracts	***2***	***4***	***5***	***3***	***6***	
	Relevant Contract Dollars	846,672	2,932,872	3,629,428	3,818,665	2,109,100	
	Total Count	***546***	***546***	***561***	***595***	***652***	
	Total Relevant Dollars	113,401,778	119,770,251	131,871,523	143,039,592	168,936,732	10.57
Smoking	***Number of Grants***	***248***	***237***	***241***	***223***	***239***	
	Relevant Grant Dollars	79,736,310	85,531,663	90,945,385	89,089,847	99,065,410	
	Number of Contracts	***5***	***6***	***6***	***5***	***3***	
	Relevant Contract Dollars	1,960,000	5,099,990	2,086,550	14,152,035	31,499,932	
	Total Count	***253***	***243***	***247***	***228***	***242***	
	Total Relevant Dollars	81,696,310	90,631,653	93,031,935	103,241,882	130,565,342	12.76

continued

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† Relevant Dollars = portion of the funded amount relevant to a specific site.

‡ Coding not required or requested.

Source: Research Analysis and Evaluation Branch.

Table 16 (cont'd). NCI Special Interest Category (SIC) Dollars for FY2015 – FY2019 – Annual Percent Change*

(This table reports funding for grants and contractsonly;intramural projects are excluded.)

Special Interest Categories	Counts and Relevant Dollars†	2015	2016	2017	2018	2019	Average Percent Change/Year
Smoking Behavior	***Number of Grants***	***190***	***183***	***181***	***166***	***169***	
	Relevant Grant Dollars	63,391,848	65,022,529	68,496,317	63,263,716	68,754,459	
	Number of Contracts	***3***	***4***	***5***	***4***	***2***	
	Relevant Contract Dollars	1,285,000	4,424,240	2,070,000	1,268,250	30,989,737	
	Total Count	***193***	***187***	***186***	***170***	***171***	
	Total Relevant Dollars	64,676,848	69,446,769	70,566,317	64,531,966	99,744,196	13.75
Smoking Cessation	***Number of Grants***	***68***	***97***	***101***	***109***	***133***	
	Relevant Grant Dollars	21,477,518	34,877,760	38,247,479	38,423,410	50,868,931	
	Number of Contracts	***‡***	***2***	***1***	***1***	***1***	
	Relevant Contract Dollars	‡	3,139,341	6,250,268	12,883,785	29,089,986	
	Total Count	***68***	***99***	***102***	***110***	***134***	
	Total Relevant Dollars	21,477,518	38,017,101	44,497,747	51,307,195	79,958,917	41.30
Smoking, Passive	***Number of Grants***	***16***	***14***	***15***	***16***	***12***	
	Relevant Grant Dollars	4,153,475	3,389,404	5,075,259	5,088,594	3,165,300	
	Number of Contracts	***1***	***2***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	420,000	456,715	‡	‡	‡	
	Total Count	***16***	***16***	***15***	***16***	***12***	
	Total Relevant Dollars	4,573,475	3,846,118	5,075,259	5,088,594	3,165,300	-5.37
Smokeless Tobacco	***Number of Grants***	***12***	***15***	***15***	***15***	***13***	
	Relevant Grant Dollars	1,961,730	1,686,491	1,827,449	1,882,785	1,609,491	
	Number of Contracts	***1***	***1***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	420,000	440,965	‡	‡	‡	
	Total Count	***13***	***16***	***15***	***15***	***13***	
	Total Relevant Dollars	2,381,730	2,127,455	1,827,449	1,882,785	1,609,491	-9.07
Structural Biology	***Number of Grants***	***770***	***682***	***619***	***580***	***573***	
	Relevant Grant Dollars	180,943,953	165,245,966	160,205,655	160,511,867	170,136,965	
	Number of Contracts	***2***	***2***	***1***	***1***	***‡***	
	Relevant Contract Dollars	52,481,360	62,705,109	79,804,870	78,321,602	‡	
	Total Count	***772***	***684***	***620***	***581***	***573***	
	Total Relevant Dollars	233,425,313	227,951,075	240,010,526	238,833,468	170,136,965	-6.57
Surgery	***Number of Grants***	***169***	***169***	***186***	***195***	***215***	
	Relevant Grant Dollars	47,266,013	50,662,032	58,892,413	61,508,704	66,631,920	
	Number of Contracts	***2***	***‡***	***2***	***2***	***1***	
	Relevant Contract Dollars	1,094,494	‡	1,172,218	14,539	1,137,419	
	Total Count	***171***	***169***	***188***	***197***	***216***	
	Total Relevant Dollars	48,360,507	50,662,032	60,064,630	61,523,242	67,769,339	8.97
Taxol	***Number of Grants***	***108***	***100***	***112***	***121***	***123***	
	Relevant Grant Dollars	14,735,085	15,870,045	21,162,390	23,999,046	24,567,763	
	Number of Contracts	***‡***	***1***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	496,154	‡	‡	‡	
	Total Count	***108***	***101***	***112***	***121***	***123***	
	Total Relevant Dollars	14,735,085	16,366,199	21,162,390	23,999,046	24,567,763	14.04

continued

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† Relevant Dollars = portion of the funded amount relevant to a specific site.

‡ Coding not required or requested.

Source: Research Analysis and Evaluation Branch.

Table 16 (cont'd). NCI Special Interest Category (SIC) Dollars for FY2015 – FY2019 – Annual Percent Change*

(This table reports funding for grants and contractsonly;intramural projects are excluded.)

Special Interest Categories	Counts and Relevant Dollars†	2015	2016	2017	2018	2019	Average Percent Change/Year
Telehealth	***Number of Grants***	***211***	***219***	***242***	***273***	***312***	
	Relevant Grant Dollars	64,342,929	68,485,679	79,769,242	110,288,390	118,727,319	
	Number of Contracts	***6***	***10***	***8***	***8***	***6***	
	Relevant Contract Dollars	6,161,456	3,584,009	4,389,571	6,077,680	680,057	
	Total Count	***217***	***229***	***250***	***281***	***318***	
	Total Relevant Dollars	70,504,385	72,069,688	84,158,813	116,366,070	119,407,376	14.97
Therapy	***Number of Grants***	***3,347***	***3,425***	***3,625***	***3,830***	***4,112***	
	Relevant Grant Dollars	1,430,619,450	1,527,523,958	1,754,215,108	1,919,432,271	2,021,576,346	
	Number of Contracts	***81***	***78***	***64***	***68***	***88***	
	Relevant Contract Dollars	137,502,906	179,514,139	157,222,822	187,721,808	162,718,386	
	Total Count	***3,428***	***3,503***	***3,689***	***3,898***	***4,200***	
	Total Relevant Dollars	1,568,122,356	1,707,038,097	1,911,437,931	2,107,154,079	2,184,294,732	8.68
Tropical Diseases	***Number of Grants***	***12***	***11***	***8***	***8***	***8***	
	Relevant Grant Dollars	3,731,760	3,628,078	3,155,736	1,846,880	1,282,015	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***12***	***11***	***8***	***8***	***8***	
	Total Relevant Dollars	3,731,760	3,628,078	3,155,736	1,846,880	1,282,015	-21.96
Tumor Markers	***Number of Grants***	***163***	***107***	***81***	***55***	***50***	
	Relevant Grant Dollars	49,088,453	35,214,792	28,002,108	14,174,253	10,847,303	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***163***	***107***	***81***	***55***	***50***	
	Total Relevant Dollars	49,088,453	35,214,792	28,002,108	14,174,253	10,847,303	-30.39
Underserved and Disparities	***Number of Grants***	***494***	***472***	***484***	***540***	***639***	
	Relevant Grant Dollars	230,676,876	228,862,603	247,578,399	324,687,212	412,442,362	
	Number of Contracts	***4***	***7***	***9***	***4***	***2***	
	Relevant Contract Dollars	5,952,032	1,906,103	5,404,861	3,581,740	522,094	
	Total Count	***498***	***479***	***493***	***544***	***641***	
	Total Relevant Dollars	236,628,908	230,768,706	252,983,260	328,268,952	412,964,456	15.68
Vaccine Development	***Number of Grants***	***95***	***84***	***76***	***84***	***86***	
	Relevant Grant Dollars	17,882,191	18,841,587	18,665,405	20,212,226	23,709,448	
	Number of Contracts	***1***	***2***	***1***	***1***	***3***	
	Relevant Contract Dollars	318,481	2,719,056	589,266	230,734	27,903	
	Total Count	***96***	***86***	***77***	***85***	***89***	
	Total Relevant Dollars	18,200,672	21,560,643	19,254,670	20,442,960	23,737,350	7.51
Vaccine Production	***Number of Grants***	***1***	***1***	***1***	***2***	***3***	
	Relevant Grant Dollars	41,056	40,677	40,677	119,047	407,323	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***1***	***1***	***1***	***2***	***3***	
	Total Relevant Dollars	41,056	40,677	40,677	119,047	407,323	108.48

continued

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‡ Coding not required or requested.

Source: Research Analysis and Evaluation Branch.

Table 16 (cont'd). NCI Special Interest Category (SIC) Dollars for FY2015 – FY2019 – Annual Percent Change*

(This table reports funding for grants and contracts only; intramural projects are excluded.)

Special Interest Categories	Counts and Relevant Dollars†	2015	2016	2017	2018	2019	Average Percent Change/Year
Vaccine Research	***Number of Grants***	***109***	***102***	***103***	***106***	***112***	
	Relevant Grant Dollars	22,248,751	23,660,428	27,073,893	28,024,644	29,756,398	
	Number of Contracts	***6***	***10***	***10***	***7***	***12***	
	Relevant Contract Dollars	24,951,052	34,643,738	39,618,958	37,638,643	4,840,694	
	Total Count	***115***	***112***	***113***	***113***	***124***	
	Total Relevant Dollars	47,199,803	58,304,167	66,692,851	65,663,287	34,597,091	-2.74
Vaccine Testing	***Number of Grants***	***60***	***54***	***48***	***42***	***47***	
	Relevant Grant Dollars	14,360,299	14,750,690	13,896,826	11,061,812	11,899,523	
	Number of Contracts	***1***	***1***	***2***	***2***	***‡***	
	Relevant Contract Dollars	2,746,712	3,186,536	2,305,882	1,674,230	‡	
	Total Count	***61***	***55***	***50***	***44***	***47***	
	Total Relevant Dollars	17,107,011	17,937,226	16,202,707	12,736,042	11,899,523	-8.19
Virus Cancer Research	***Number of Grants***	***352***	***314***	***300***	***285***	***308***	
	Relevant Grant Dollars	121,319,532	130,243,171	133,714,813	131,441,807	130,328,650	
	Number of Contracts	***2***	***4***	***2***	***3***	***2***	
	Relevant Contract Dollars	21,920,290	30,559,118	34,560,327	33,092,240	928,436	
	Total Count	***354***	***318***	***302***	***288***	***310***	
	Total Relevant Dollars	143,239,822	160,802,289	168,275,141	164,534,046	131,257,086	-1.38
Virus—Epstein-Barr	***Number of Grants***	***57***	***49***	***49***	***48***	***51***	
	Relevant Grant Dollars	16,834,173	18,001,207	18,317,870	18,236,645	18,415,472	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***57***	***49***	***49***	***48***	***51***	
	Total Relevant Dollars	16,834,173	18,001,207	18,317,870	18,236,645	18,415,472	2.31
Virus—Hepatitis B	***Number of Grants***	***26***	***18***	***13***	***19***	***17***	
	Relevant Grant Dollars	3,855,582	2,835,408	1,682,116	2,974,267	2,605,999	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***26***	***18***	***13***	***19***	***17***	
	Total Relevant Dollars	3,855,582	2,835,408	1,682,116	2,974,267	2,605,999	-0.67
Virus—Hepatitis C	***Number of Grants***	***30***	***22***	***16***	***23***	***19***	
	Relevant Grant Dollars	6,172,959	4,925,341	3,352,826	4,349,788	2,845,741	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***1***	
	Relevant Contract Dollars	‡	‡	‡	‡	510,195	
	Total Count	***30***	***22***	***16***	***23***	***20***	
	Total Relevant Dollars	6,172,959	4,925,341	3,352,826	4,349,788	3,355,936	-11.31
Virus—Herpes	***Number of Grants***	***124***	***110***	***107***	***101***	***107***	
	Relevant Grant Dollars	41,959,685	44,516,965	47,186,600	41,145,977	39,272,062	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***124***	***110***	***107***	***101***	***107***	
	Total Relevant Dollars	41,959,685	44,516,965	47,186,600	41,145,977	39,272,062	-1.32

continued

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† Relevant Dollars = portion of the funded amount relevant to a specific site.

‡ Coding not required or requested.

Source: Research Analysis and Evaluation Branch.

Table 16 (cont'd). NCI Special Interest Category (SIC) Dollars for FY2015 – FY2019 – Annual Percent Change*

(This table reports funding for grants and contracts only; intramural projects are excluded.)

Special Interest Categories	Counts and Relevant Dollars†	2015	2016	2017	2018	2019	Average Percent Change/Year
Virus—HHV8	***Number of Grants***	***54***	***51***	***53***	***51***	***51***	
	Relevant Grant Dollars	19,794,001	25,216,563	27,737,808	23,175,112	19,425,311	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***54***	***51***	***53***	***51***	***51***	
	Total Relevant Dollars	19,794,001	25,216,563	27,737,808	23,175,112	19,425,311	1.19
Virus—HTLV-I	***Number of Grants***	***13***	***14***	***11***	***10***	***7***	
	Relevant Grant Dollars	3,629,925	4,142,547	3,899,447	3,980,369	1,535,971	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***13***	***14***	***11***	***10***	***7***	
	Total Relevant Dollars	3,629,925	4,142,547	3,899,447	3,980,369	1,535,971	-12.77
Virus—Papilloma	***Number of Grants***	***145***	***141***	***149***	***142***	***156***	
	Relevant Grant Dollars	43,027,935	48,797,503	52,490,929	54,043,721	55,609,372	
	Number of Contracts	***1***	***3***	***1***	***1***	***1***	
	Relevant Contract Dollars	1,327,705	5,686,039	2,638,379	1,697,599	418,241	
	Total Count	***146***	***144***	***150***	***143***	***157***	
	Total Relevant Dollars	44,355,640	54,483,542	55,129,308	55,741,320	56,027,613	6.41
Virus—Papova	***Number of Grants***	***164***	***154***	***161***	***151***	***166***	
	Relevant Grant Dollars	49,604,921	52,682,779	56,177,300	56,892,866	59,441,700	
	Number of Contracts	***1***	***3***	***1***	***1***	***1***	
	Relevant Contract Dollars	1,327,705	5,686,039	2,638,379	1,697,599	418,241	
	Total Count	***165***	***157***	***162***	***152***	***167***	
	Total Relevant Dollars	50,932,626	58,368,818	58,815,679	58,590,465	59,859,941	4.29
Virus—SV40	***Number of Grants***	***2***	***1***	***2***	***2***	***2***	
	Relevant Grant Dollars	361,950	155,700	720,567	720,567	711,858	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***2***	***2***	***2***	***2***	***2***	
	Total Relevant Dollars	361,950	155,700	720,567	720,567	711,858	76.15
Vitamin A	***Number of Grants***	***15***	***13***	***9***	***9***	***12***	
	Relevant Grant Dollars	2,458,147	2,452,760	2,771,355	2,199,510	2,362,430	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***15***	***13***	***9***	***9***	***12***	
	Total Relevant Dollars	2,458,147	2,452,760	2,771,355	2,199,510	2,362,430	-0.11
Vitamin C	***Number of Grants***	***6***	***6***	***4***	***4***	***4***	
	Relevant Grant Dollars	1,569,644	1,443,333	1,262,997	3,288,782	3,034,224	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***6***	***6***	***4***	***4***	***4***	
	Total Relevant Dollars	1,569,644	1,443,333	1,262,997	3,288,782	3,034,224	33.03

continued

* Some categories are not mutually exclusive, resulting in overlap in reported funding. As a result, dollar totals may exceed 100 percent of the extramural budget.

† Relevant Dollars = portion of the funded amount relevant to a specific site.

‡ Coding not required or requested.

Source: Research Analysis and Evaluation Branch.

Table 16 (cont'd). NCI Special Interest Category (SIC) Dollars for FY2015 – FY2019 – Annual Percent Change*

(This table reports funding for grants and contracts only; intramural projects are excluded.)

Special Interest Categories	Counts and Relevant Dollars†	2015	2016	2017	2018	2019	Average Percent Change/Year
Vitamin D	***Number of Grants***	***55***	***32***	***35***	***38***	***34***	
	Relevant Grant Dollars	16,217,405	10,749,178	12,254,831	13,343,235	11,208,500	
	Number of Contracts	***‡***	***‡***	***‡***	***‡***	***‡***	
	Relevant Contract Dollars	‡	‡	‡	‡	‡	
	Total Count	***55***	***32***	***35***	***38***	***34***	
	Total Relevant Dollars	16,217,405	10,749,178	12,254,831	13,343,235	11,208,500	-6.71

* Some categories are not mutually exclusive, resulting in overlap in reported funding. As a result, dollar totals may exceed 100 percent of the extramural budget.
† Relevant Dollars = portion of the funded amount relevant to a specific site.
‡ Coding not required or requested.
Source: Research Analysis and Evaluation Branch.

Table 17. NCI Funding of Foreign Research Grants in FY2019

(This table reports extramural grants only; intramural grants and contracts are excluded.)

Country/Cancer Site													
Argentina	**F31**	**F32**	**R01**	**R03**	**R21**	**R33**	**R43**	**U01**	**U10**	**U24**	**UH3**	**UM1**	**Totals**
Grants #			***1***										***1***
Funding $			***336,858***										***336,858***
Cervix			336,858										336,858
Australia	**F31**	**F32**	**R01**	**R03**	**R21**	**R33**	**R43**	**U01**	**U10**	**U24**	**UH3**	**UM1**	**Totals**
Grants #					**1**			**2**					**3**
Funding $					**121,217**			**2,372,771**					**2,493,988**
Childhood Leukemia								387,584					387,584
Colon, Rectum								1,985,187					1,985,187
Neuroblastoma					121,217								121,217
Canada	**F31**	**F32**	**R01**	**R03**	**R21**	**R33**	**R43**	**U01**	**U10**	**U24**	**UH3**	**UM1**	**Totals**
Grants #			***5***		***1***	***1***			***1***	***1***		***1***	***10***
Funding $			***1,092,801***		***102,056***	***305,702***			***1,820,004***	***386,440***		***970,202***	***4,677,205***
Breast						152,851			455,001				607,852
Cervix			400,503										400,503
Childhood Leukemia			161,242										161,242
Gastrointestinal Tract									455,001				455,001
Leukemia			263,479										263,479
Lung									455,001				455,001
Melanoma			1										1
Non-Hodgkin Lymphoma			1										1
Not Site Specific*					102,056					386,440		970,202	1,458,698
Pancreas			1										1
Prostate			267,573			152,851							420,424
Sarcoma, Bone			1										1
Urinary System									455,001				455,001
Eritrea	**F31**	**F32**	**R01**	**R03**	**R21**	**R33**	**R43**	**U01**	**U10**	**U24**	**UH3**	**UM1**	**Totals**
Grants #							***1***						***1***
Funding $							***225,000***						***225,000***
Not Site Specific*							225,000						225,000
France	**F31**	**F32**	**R01**	**R03**	**R21**	**R33**	**R43**	**U01**	**U10**	**U24**	**UH3**	**UM1**	**Totals**
Grants #								**1**			**2**		**3**
Funding $								**793,966**			**1,805,698**		**2,599,664**
Cervix											1,805,698		1,805,698
Not Site Specific*								793,966					793,966
Germany	**F31**	**F32**	**R01**	**R03**	**R21**	**R33**	**R43**	**U01**	**U10**	**U24**	**UH3**	**UM1**	**Totals**
Grants #										***1***			***1***
Funding $										***399,909***			***399,909***
Not Site Specific*										399,909			399,909
Korea, Rep. of	**F31**	**F32**	**R01**	**R03**	**R21**	**R33**	**R43**	**U01**	**U10**	**U24**	**UH3**	**UM1**	**Totals**
Grants #				***1***									***1***
Funding $				***54,000***									***54,000***
Head and Neck				27,000									27,000
Lung				27,000									27,000
Netherlands	**F31**	**F32**	**R01**	**R03**	**R21**	**R33**	**R43**	**U01**	**U10**	**U24**	**UH3**	**UM1**	**Totals**
Grants #			***1***										***1***
Funding $			***197,457***										***197,457***
Breast			197,457										197,457

continued

*Not Site Specific = research that lacks a focus on a particular type of cancer/cancer site (e.g., basic research on the role of a protein in cellular DNA damage in fruit flies and has no cancer site focus; however, it is relevant to cancer research).
Source: Research Analysis and Evaluation Branch.

Table 17 (cont'd). NCI Funding of Foreign Research Grants in FY2019

(This table reports extramural grants only; intramural grants and contracts are excluded.)

Country/Cancer Site													
South Africa	**F31**	**F32**	**R01**	**R03**	**R21**	**R33**	**R43**	**U01**	**U10**	**U24**	**UH3**	**UM1**	**Totals**
Grants #			***1***										***1***
Funding $			***77,740***										***77,740***
Breast			77,740										77,740
Sweden	**F31**	**F32**	**R01**	**R03**	**R21**	**R33**	**R43**	**U01**	**U10**	**U24**	**UH3**	**UM1**	**Totals**
Grants #	***1***	***1***	***1***										***3***
Funding $	***24,816***	***52,896***	***396,825***										***474,537***
Breast			134,921										134,921
Lung	12,408												12,408
Melanoma	12,408												12,408
Non-Hodgkin Lymphoma			130,952										130,952
Not Site Specific*		52,896											52,896
Sarcoma, Bone			130,952										130,952
United Kingdom	**F31**	**F32**	**R01**	**R03**	**R21**	**R33**	**R43**	**U01**	**U10**	**U24**	**UH3**	**UM1**	**Totals**
Grants #		***1***								***1***			***2***
Funding $		***52,896***								***260,844***			***313,740***
Breast		52,896											52,896
Thyroid										260,844			260,844
Total Grants	***1***	***2***	***9***	***1***	***2***	***1***	***1***	***3***	***1***	***3***	***2***	***1***	***27***
Total $ Per Grant Type	***24,816***	***105,792***	***2,101,681***	***54,000***	***223,273***	***305,702***	***225,000***	***3,166,737***	***1,820,004***	***1,047,193***	***1,805,698***	***970,202***	***11,850,098***

*Not Site Specific = research that lacks a focus on a particular type of cancer/cancer site (e.g., basic research on the role of a protein in cellular DNA damage in fruit flies and has no cancer site focus; however, it is relevant to cancer research).
Source: Research Analysis and Evaluation Branch.

Table 18. Foreign Components of U.S. Domestic Research Grants and Contracts in FY2019

(This table reports extramural grants and contracts only; intramural projects are excluded.)

Country	Funding Mechanism																				Subtotal
	DP1	R00	R01	R03	R13	R21	R33	R35	R37	R42	R43	R44	U01	U24	UG1	UG3	UH2	UH3	UM1	N01	N02	
Antarctica			1																			1
Australia			9			1				1			4									15
Austria	1		1									1										3
Bahamas													1									1
Belarus																					1	1
Belgium			1						1													2
Botswana			1															1				2
Brazil			1															1				2
Canada			38		1	2	1	1	2		1		6	1	2				1			56
Chile					1																	1
China		1	13		1								4					1			1	21
Costa Rica																				1		1
Cyprus						1																1
Denmark			5			1								1								7
Egypt			1																			1
El Salvador			1																			1
Finland			2																			2
France			6			2			2				1									11
Germany		1	12	1		2		1	1	1			6									25
Ghana			1										1									2
Greece			1																			1
Hong Kong			2																			2
Hungary						1																1
India			3			2								1				4			1	11
Ireland			5		1																	6
Israel			9										2									11
Italy			6			2							2									10
Jamaica					1																	1
Japan			5										1									6
Kenya			1									1						1	1			4
Korea, Rep. of			1			1							2									4
Lebanon			1																			1
Malawi						1												1				2
Mexico			2																			2
Netherlands			7			2							5									14
New Zealand			2																			2
Nigeria			1			1							1					1				4
Norway			3																			3

continued

Source: Research Analysis and Evaluation Branch.

Table 18 (cont'd). Foreign Components of U.S. Domestic Research Grants and Contracts in FY2019

(This table reports extramural grants and contracts only; intramural projects are excluded.)

Country	Funding Mechanism																					Subtotal
	DP1	R00	R01	R03	R13	R21	R33	R35	R37	R42	R43	R44	U01	U24	UG1	UG3	UH2	UH3	UM1	N01	N02	
Peru			2																			2
Philippines																		1				1
Poland			1																			1
Portugal			1		2																	3
Russia			2			7																9
Senegal													1									1
Singapore			2					1					1									4
South Africa			1										1					1	1			4
Spain			10																			10
Swaziland			1																			1
Sweden			2																			2
Switzerland			2		1								2			1						6
Taiwan			3															1				4
Tanzania U Rep			1			1																2
Turkey			1																			1
Uganda			4			1												3				8
Ukraine														1								1
United Kingdom	1		11		1	1		1	3				4	1			1					24
Zambia			1															1				2
Zimbabwe																			1			1
Totals	**2**	**2**	**187**	**1**	**9**	**29**	**1**	**4**	**9**	**2**	**1**	**2**	**45**	**5**	**2**	**1**	**1**	**17**	**4**	**1**	**3**	**328***

* Because many grants have multiple foreign contributors, the total count (328) is greater than the total number of grants and contracts (238).

Source: Research Analysis and Evaluation Branch.

Appendix A: Activities of the National Cancer Advisory Board (NCAB)

Originally established as the National Advisory Cancer Council in 1937, the NCAB consists of 18 members who are appointed by the U.S. President and 12 nonvoting *ex officio* members. The NCAB advises, assists, consults with, and makes recommendations to the Secretary, HHS, and to the NCI Director with respect to the activities carried out by and through the Institute and on policies pertaining to these activities. The NCAB is authorized to recommend support for grants and cooperative agreements following technical and scientific peer review. The DEA Director serves as the Executive Secretary of the NCAB. In fulfilling its role as the locus for second-level review of all peer-reviewed applications, the Board reviewed a total of 15,199 applications in FY2019 requesting $5,184,757,992 in direct costs with appropriated funds. Additionally, the Board reviewed three FDA applications in FY2019.

The Board heard presentations, discussed, and provided advice on a variety of topics and NCI activities in FY2019, such as:

- NCI Director's Report
- President's Cancer Panel Report
- Legislative Report
- Genetic Susceptibility to Prostate Cancer in Men of African Ancestry
- FDA Center for Tobacco Products—Update on Comprehensive Plan for Tobacco and Nicotine Regulation
- *Ad Hoc* Subcommittee on Global Cancer Research Report
- Physical Sciences–Oncology Network (PS-ON) Program Update
- Annual Delegations of Authority
- Triennial Review of Inclusion of Women and Minorities in Clinical Research
- NCAB Working Group Report on the NCI Small Business Innovation Research (SBIR) Program
- Research Project Grant (RPG) Pool
- NCAB *Ad Hoc* Working Group on Strategic Approaches and Opportunities in Population Science, Epidemiology, and Disparities Report
- NCAB *Ad Hoc* Working Group on Data Science Report
- *Ad Hoc* Subcommittee on Population Science, Epidemiology, and Disparities Report
- Planning and Budget Subcommittee Report
- Childhood Cancer Data Initiative (CCDI) Scientific Session Report

As part of its mandate for oversight of NCI activities, the NCAB receives regular updates from the NCI Director, the NCI Office of Legislation and Congressional Activities, and the President's Cancer Panel.

Another major role of the Board is to monitor the overall advisory and oversight activities of the NCI as a whole. In that regard, it annually reviews the site visit outcomes of intramural review and the extramural RFA and RFP concepts acted on by the BSA. The NCAB also participates in the framing of the annual NCI Bypass Budget and considers the impact of actualized priorities as expressed by the allocation of the annual operating budget.

The full text of recent NCAB meeting summaries is available on the NCI website at http://deainfo.nci.nih.gov/advisory/ncab/ncabmeetings.htm.

Appendix B: Activities of the Board of Scientific Advisors (BSA)

The BSA provides scientific advice on a wide variety of matters concerning scientific program policy, progress, the future direction of NCI's extramural research programs, and concept review of extramural program initiatives.

In addition to approving a number of extramural program initiatives (see below), the BSA also heard presentations on the following in FY2019:

- NCI Director's Report
- President's Cancer Panel Report
- Legislative Report
- Recognition of Retiring Members
- Genetic Susceptibility to Prostate Cancer in Men of African Ancestry
- FDA's Center for Tobacco Products: An Update on FDA's Comprehensive Plan for Tobacco and Nicotine Regulation
- Physical Sciences – Oncology Network (PS-ON) Program Update
- Triennial Review of Inclusion of Women and Minorities in Clinical Research
- Research Project Grant (RPG) Pool
- Childhood Cancer Data Initiative (CCDI) Scientific Session Report

RFA Concepts Approved

Division of Cancer Biology

- Cellular Cancer Biology Imaging Research Resource Program

Division of Cancer Control and Population Sciences

- Optimizing Management and Outcomes for Cancer Survivors Transitioning to Follow-up Care
- Research on Pediatric, Adolescent, and Young Adult Survivorship Through the Childhood Cancer Survivorship, Treatment, Access and Research (STAR) Act

Division of Cancer Treatment and Diagnosis

- Molecular and Biological Effects of High Linear Energy Transfer Radiation Exposure

Office of the Director

- Advancing Cancer Immunotherapy by Mitigating Immune-Related Adverse Events
- Mechanisms of Cancer Drug Resistance Competing Revisions

RFA/Cooperative Agreements Approved

Division of Cancer Control and Population Sciences

- Patient Engagement for Priority Cancer Sequencing (PE4PC-Seq)

Office of the Director

- Informatics Technology for Cancer Research
- Next Gen Technology for Next Gen Cancer Models
- U.S. and Low- and Middle-Income Country (LMIC) HIV Malignancy Research Networks

RFA/Cooperative Agreement Re-Issuances Approved

Division of Cancer Control and Population Sciences

- Cancer Intervention and Surveillance Modeling Network (CISNET)

Division of Cancer Prevention

- Chronic Pancreatitis, Diabetes, and Pancreatic Cancer Consortium

Division of Cancer Treatment and Diagnosis

- Pediatric Brain Tumor Consortium
- Biospecimen Banks to Support NCI National Clinical Trials Network (NCTN), NCI Community Oncology Research Program (NCORP), and CTEP-Supported Early Trials/Studies

Office of the Director

- AIDS Malignancy Consortium (AMC)

RFA/Administrative Supplement Approved

Office of the Director

- Activities to Promote Human Immune-Representing Oncology Models Initiative

RFP Concepts Approved

Division of Cancer Treatment and Diagnosis

- Clinical Trials Information and Management Contract

Office of the Director

- Small Business Innovation Research (SBIR) Contract Topics

RFP Re-Issuance Approved

Division of Cancer Treatment and Diagnosis

- Cancer Trials Support Unit

Appendix C: Activities of the Frederick National Laboratory Advisory Committee to the NCI (FNLAC)

Originally established as the NCI-Frederick Advisory Committee in 2011, the FNLAC consists of up to 16 members, including the Chair, appointed by the Director of NCI; nonvoting representatives from the National Cancer Advisory Board, the NCI Board of Scientific Advisors, and the NCI Board of Scientific Counselors (Basic Sciences and Clinical Sciences and Epidemiology); and nonvoting *ex officio* members including NCI Deputy Directors, selected NCI Division Directors, and the Associate Director of the Frederick National Laboratory for Cancer Research (FNLCR). The National Cancer Institute Facility in Frederick, Maryland, was established in 1972 as a Government-owned Contractor-operated (GOCO) facility. In 1975, the facility was designated as a Federally Funded Research and Development Center (FFRDC) to provide a unique national resource within the biomedical research community for the development of new technologies and the translation of basic science discoveries into novel agents for the prevention, diagnosis, and treatment of cancer and AIDS. The FNLAC reviews the state of research (extramural and intramural) at FNLCR and makes recommendations for the best use of its capabilities and infrastructure. Specifically, the committee reviews major new projects proposed to be performed at FNLCR and advises the Director, NCI, and Associate Director, FNLCR, about the intrinsic merit of the projects and about whether they should be performed at the FNLCR. In addition, the Committee periodically reviews the existing portfolio of projects at FNLCR, evaluates their productivity, helps determine which of these projects should be transitioned to more conventional mechanisms of support, (i.e., grants, contracts, cooperative agreements), and which should be considered for termination.

The Committee heard presentations, discussed, and provided advice on a variety of topics and NCI activities in FY2019, such as:

- NCI Director's Report
- FNLCR Current Work and Future Directions
- FNLCR Future Perspective
- Spectrum of Science Conducted at the FNLCR
- NCI Mouse Repository: Utilization and Future Directions
- Biopharmaceutical Development Program (BDP) and Cell Therapy Facility Development
- Accelerating Therapeutics for Opportunities in Medicine (ATOM): Computationally Driven Drug Discovery
- RAS Working Group Update
- National Cryo-EM Facility (NCEF) Update
- NCI/Department of Energy (DOE) Collaborations Working Group Update
- Cancer Models and Therapeutics Development Working Group Update
- Progress in Targeting KRAS: Update from the FNLCR RAS Initiative

Another major role of the committee is to monitor and evaluate contractor-initiated research within the span of a contract period. The Committee considers proposed research and provides advice as to whether the FNLCR is the best mechanism for carrying out these projects that it deems to be of merit and to be consistent with the mission of the National Cancer Institute and FNLCR.

The full text of recent FNLAC meeting summaries is available on the NCI website at **https://deainfo.nci.nih.gov/advisory/fac/fac.htm**.

Appendix D: List of Chartered Boards, Councils, and Committees

President's Cancer Panel

Current Chair

John P. Williams, M.D., F.A.C.S.* ..... George Mason University

Past Chair

Barbara K. Rimer, Dr.P.H., M.P.H. ..... The University of North Carolina at Chapel Hill

Members

Robert A. Ingram* ..... Hatteras Venture Partners
Edith P. Mitchell, M.D., M.A.C.P., F.C.P.P.* .....Thomas Jefferson University

Current Executive Secretary

Maureen R. Johnson, Ph.D. ..... National Cancer Institute, NIH

Past Executive Secretary

Abby B. Sandler, Ph.D. ..... National Cancer Institute, NIH

National Cancer Advisory Board

Current Chair

Elizabeth M. Jaffee, M.D. .....Johns Hopkins University

Members

Peter C. Adamson, M.D. ..... Children's Hospital of Philadelphia
Francis Ali-Osman, D.Sc. .....Duke University Medical Center
Deborah Watkins Bruner, RN, Ph.D., F.A.A.N. .....Emory University
Yuan Chang, M.D. ..... University of Pittsburgh Cancer Institute
David C. Christiani, M.D., M.P.H. ..... Harvard Medical School
Judy E. Garber, M.D., M.P.H. ..... Harvard Medical School
Lawrence O. Gostin, J.D. .....Georgetown University
Scott W. Hiebert, Ph.D. ..... Vanderbilt University
Beth Y. Karlan, M.D. ..... University of California, Los Angeles
Timothy J. Ley, M.D. .....Washington University School of Medicine in St. Louis
Electra D. Paskett, Ph.D. .....The Ohio State University
Nancy J. Raab-Traub, Ph.D. ..... The University of North Carolina at Chapel Hill
Mack Roach III, M.D., F.A.C.R. .....University of California, San Francisco
Charles L. Sawyers, M.D. .....Weill Cornell Medical College
Margaret R. Spitz, M.D. .....Baylor College of Medicine
Max S. Wicha, M.D. ..... University of Michigan

* Pending appointment

Ex Officio Members of the National Cancer Advisory Board

The Honorable R. Alexander Acosta, J.D. ..... U.S. Department of Labor
The Honorable Alex M. Azar II ..... U.S. Department of Health and Human Services
Linda S. Birnbaum, Ph.D., D.A.B.T., A.T.S. ..... National Institute of Environmental Health Sciences, NIH
Ann Marie Buerkle, J.D. ..... U.S. Consumer Product Safety Commission
Francis S. Collins, M.D., Ph.D. ..... National Institutes of Health
Scott Gottlieb, M.D. ..... U.S. Food and Drug Administration
John Howard, M.D., M.P.H., J.D., LL.M. ..... National Institute for Occupational Safety and Health
The Honorable James Mattis, M.A. ..... U.S. Department of Defense
The Honorable Rick Perry ..... U.S. Department of Energy
Norman E. Sharpless, M.D. ..... U.S. Food and Drug Administration
The Honorable David J. Shulkin, M.D. ..... U.S. Department of Veterans Affairs
Andrew Wheeler, J.D. ..... U.S. Environmental Protection Agency

Alternates to *Ex Officio* Members of the National Cancer Advisory Board

Robert T. Anderson, Ph.D. ..... U.S. Department of Energy
Michael A. Babich, Ph.D. ..... U.S. Consumer Product Safety Commission
Vincent J. Cogliano, Ph.D. ..... U.S. Environmental Protection Agency
Michael Kelley, M.D., F.A.C.P. ..... U.S. Department of Veterans Affairs
Aubrey Miller, M.D. ..... National Institute of Environmental Health Sciences, NIH
Richard Pazdur, M.D., F.A.C.P. ..... U.S. Food and Drug Administration
Craig D. Shriver, M.D., F.A.C.S., COL., M.C. ..... U.S. Department of Defense
Kerry Souza, Sc.D., M.P.H. ..... National Institute for Occupational Safety and Health
Lawrence A. Tabak, D.D.S., Ph.D. ..... National Institutes of Health
Richard J. Thomas, M.D., M.P.H. ..... U.S. Department of Labor

Executive Secretary

Paulette S. Gray, Ph.D. ..... National Cancer Institute, NIH

NCI Board of Scientific Advisors

Chair

Dafna Bar-Sagi, Ph.D. ..... NYU Grossman School of Medicine

Members

Kenneth C. Anderson, M.D., Ph.D. ..... Dana–Farber Cancer Institute
Michael John Becich, M.D., Ph.D. ..... University of Pittsburgh
Mary C. Beckerle, Ph.D. ..... The University of Utah
Melissa L. Bondy, Ph.D. ..... Baylor College of Medicine
Otis W. Brawley, M.D. ..... Johns Hopkins University
Graham A. Colditz, M.D., Dr.P.H. ..... Washington University in St. Louis
Christopher M. Counter, Ph.D. ..... Duke University
Carol E. Ferrans, Ph.D., R.N. ..... University of Illinois at Chicago
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Total Number of Reviewers: 110*

* Approximately 23 reviewers served more than once.

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Total number of Reviewers: 120*

*Approximately 20 reviewers served more than once.

3. Consultants Serving on Special Emphasis Panels (SEPs) in FY2019

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Tseng, Hsian-Rong, Ph.D. ..... University of California, Los Angeles
Tsodikov, Alexander, Ph.D. ..... University of Michigan at Ann Arbor
Tsourkas, Andrew, Ph.D. ..... University of Pennsylvania
Tucker, Erik I., Ph.D. ..... Aronora, Inc.
Tumiel-Berhalter, Laurene M., Ph.D. ..... The State University of New York, Buffalo
Turchi, John J., Ph.D. ..... Indiana University–Purdue University at Indianapolis
Turnbaugh, Peter J., Ph.D. ..... University of California, San Francisco
Turner, Monique M., Ph.D. ..... Michigan State University
Turner, Stephen W., Ph.D. ..... Pacific Biosciences of California, Inc.
Tworowska, Izabela, Ph.D. ..... RadioMedix, Inc.
Tyler, Jessica K., Ph.D. ..... Weill Medical College of Cornell University

U

Ufnar, Jennifer A., Ph.D. ..... Vanderbilt University
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Unguez, Graciela A., Ph.D. ..... New Mexico State University, Las Cruces
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Urba, Walter J., M.D., Ph.D. ..... Providence Portland Medical Center

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Vadaparampil, Susan T., Ph.D., M.P.H. ..... Moffitt Cancer Center
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Vadlamudi, Ratna K., Ph.D. ..... The University of Texas Health Science Center
Valerie, Kristoffer C., Ph.D. ..... Virginia Commonwealth University

Van Allen, Eliezer M., M.D. ..... Dana–Farber Cancer Institute
Van Breemen, Richard B., Ph.D. ..... Oregon State University
Van Den Berg, Carla L., M.D. ..... The University of Texas at Austin
Vanderford, Nathan L., Ph.D. ..... University of Kentucky
Van Deursen, Jan M., Ph.D. ..... Mayo Clinic, Rochester
Vannatta, Kathryn, Ph.D. ..... Research Institute at Nationwide Children's Hospital
Vannier, David M., Ph.D. ..... Fred Hutchinson Cancer Research Center
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Van Tine, Brian A., M.D., Ph.D. ..... Washington University School of Medicine in St. Louis
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Veach, Darren R., Ph.D. ..... Memorial Sloan Kettering Cancer Center
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Viator, John A., Ph.D. ..... Duquesne University
Vibhakar, Rajeev, M.D., Ph.D., M.P.H. ..... University of Colorado Denver
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Vilar-Sanchez, Eduardo, M.D., Ph.D. ..... The University of Texas MD Anderson Cancer Center
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Voss, John C., Ph.D. ..... University of California, Davis

W

Wade, James L., M.D. ..... Decatur Memorial Hospital
Wagman, Lawrence D., M.D. ..... City of Hope Medical Center
Wagner, Kay-Uwe, Ph.D. ..... Wayne State University
Wainwright, Derek A., Ph.D. ..... Northwestern University
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Wallace, Kendall B., Ph.D. ..... University of Minnesota
Waller, Edmund K., M.D., Ph.D. ..... Emory University
Walsh, Christine S., M.D. ..... Cedars-Sinai Medical Center
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Wang, Chi, Ph.D. ..... University of Kentucky
Wang, Denong, Ph.D. ..... SRI International
Wang, Edwin, Ph.D. ..... University of Calgary
Wang, Ge, Ph.D. ..... Rensselaer Polytechnic Institute
Wang, Hongkun, Ph.D. ..... Georgetown University
Wang, Jean Y.J., Ph.D. ..... University of California, San Diego
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Wang, Jing Hong, M.D., Ph.D. ..... University of Colorado Denver
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Wang, Li Lily, Ph.D. ..... Cleveland Clinic Lerner College of Medicine of Case Western Reserve University
Wang, Lisa L., M.D. ..... Baylor College of Medicine

Wang, Lizhong, M.D., Ph.D. ..... The University of Alabama at Birmingham
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Wang, Weiqun G., Ph.D. .....Kansas State University
Wang, Xiao-Fan, Ph.D. ..... Duke University
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Weiner, Roy S., M.D. ..... Tulane University of Louisiana
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Weiss, Heidi L., Ph.D. ..... University of Kentucky
Weiss, William A., M.D., Ph.D. ..... University of California, San Francisco
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Welm, Bryan E., Ph.D. ..... The University of Utah
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Zavros, Yana, Ph.D. ..... University of Cincinnati
Zeh, Herbert J., M.D. ..... University of Pittsburgh
Zehnder, James L., M.D. ..... Stanford University

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Zeleznik-Le, Nancy J., Ph.D. .....Loyola University Chicago
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Zhang, Jinsong, Ph.D. .....Saint Louis University
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Zhang, Wei, Ph.D. ..... Wake Forest University Health Sciences
Zhang, Wei, Ph.D. ..... Northwestern University
Zhang, Weizhou, Ph.D. ..... University of Florida
Zhang, Yuesheng, M.D., Ph.D. .....Roswell Park Cancer Institute
Zhao, Binsheng, D.Sc. .....Columbia University Health Sciences
Zhao, Hua, Ph.D. ..... Virginia Commonwealth University
Zhao, Rui, Ph.D. .....University of Colorado Denver
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Zheng, Zhiyuan, Ph.D. ..... American Cancer Society, Inc.
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Total number of Reviewers: 2,031*

* Approximately 726 reviewers served more than once.

Appendix F: NCI Grant Mechanisms and Descriptions

Below is a brief description of different NIH funding mechanisms. Additional information on grants, contracts, and extramural policy notices may be found by viewing the NCI DEA Web page on Grants Guidelines and Descriptions at https://deainfo.nci.nih.gov/flash/awards.htm.

C Series: Research Construction Programs	
C06	**Research Facilities Construction Grants** To provide matching Federal funds, up to 75 percent, for construction or major remodeling to create new research facilities, which in addition to basic research laboratories may include, under certain circumstances, animal facilities and/or limited clinical facilities where they are an integral part of an overall research effort.
D Series: Institutional Training and Director Program Projects	
D43	**International Training Grants in Epidemiology** To improve and expand epidemiologic research and the utilization of epidemiology in clinical trials and prevention research in foreign countries through support of training programs for foreign health professionals, technicians, and other health care workers.
DP1	**NIH Director's Pioneer Award (NDPA)** To support individuals who have the potential to make extraordinary contributions to medical research. The NIH Director's Pioneer Award is not renewable.
DP2	**NIH Director's New Innovator Awards** To support highly innovative research projects by new investigators in all areas of biomedical and behavioral research.
F Series: Fellowship Programs	
F30	**Ruth L. Kirschstein National Research Service Award (NRSA) for Individual Predoctoral M.D./Ph.D. Degree Fellows** To provide predoctoral individuals with supervised research training in specified health and health-related areas leading toward a research degree (e.g., Ph.D.).
F31	**Ruth L. Kirschstein National Research Service Award for Predoctoral Individuals** To provide predoctoral research training to individuals to broaden their scientific background and extend their potential for research in specified health-related areas.
F32	**Ruth L. Kirschstein National Research Service Award for Individual Postdoctoral Fellows** To provide postdoctoral research training to individuals to broaden their scientific background and extend their potential for research in specified health-related areas.

F33	**Ruth L. Kirschstein National Research Service Award for Senior Fellows** To provide opportunities for experienced scientists to make major changes in the direction of research careers, broaden scientific backgrounds, acquire new research capabilities, enlarge command of an allied research field, or take time from regular professional responsibilities to increase capabilities to engage in health-related research.
F99/ K00	**The NCI Predoctoral to Postdoctoral Fellow Transition Award** To encourage and retain outstanding graduate students who have demonstrated potential and interest in pursuing careers as independent cancer researchers.
K Series: Career Development Programs	
K01	**The Howard Temin Award (no longer supported through use of the K01 by the NCI; see the K99/R00)** A previously used NCI-specific variant of the NIH Mentored Research Scientist Development Award that was designed to provide research scientists with an additional period of sponsored research experience as a way to gain expertise in a research area new to the applicant or in an area that would demonstrably enhance the applicant's scientific career.
K01	**Mentored Career Development Award for Underrepresented Minorities** To support scientists committed to research who are in need of both advanced research training and additional experience.
K05	**Established Investigator Award in Cancer Prevention, Control, Behavioral, and Population Research** To support scientists qualified to pursue independent research that would extend the research program of the sponsoring institution, or to direct an essential part of this program.
K07	**Cancer Prevention, Control, Behavioral, and Population Sciences Career Development Award** To support the postdoctoral career development of investigators who are committed to academic research careers in cancer prevention, control, behavioral, epidemiological, and/or the population sciences. It supports up to 5 years of combined didactic and supervised (i.e., mentored) research experiences to acquire the methodological and theoretical research skills needed to become an independent scientist. The very broad nature of the prevention, control, and population sciences makes it applicable to those individuals doctorally trained in the basic sciences, medicine, behavioral sciences, and/or public health. The K07 award has been expanded from a scope limited to "preventive oncology" to include the entire spectrum of fields that are of vital importance to cancer prevention and control such as nutrition, epidemiology, and behavioral sciences.
K08	**Mentored Clinical Scientists Development Award** To provide the opportunity for promising medical scientists with demonstrated aptitude to develop into independent investigators, or for faculty members to pursue research in categorical areas applicable to the awarding unit, and to aid in filling the academic faculty gap in specific shortage areas within U.S. health professions institutions.

K08	**Mentored Clinical Scientists Development Award—Minorities in Clinical Oncology** A specialized type of Mentored Clinical Scientist Developmental Award (K08) that supports the development of outstanding clinical research scientists, with this type being reserved for qualified individuals from underrepresented minority groups. Both types of K08 awards support periods of specialized study for clinically trained professionals who are committed to careers in research and who have the potential to develop into independent investigators. The K08 awards for Minorities in Clinical Oncology are distinct and important because they provide opportunities for promising medical scientists with demonstrated aptitudes who belong to underrepresented minority groups to develop into independent investigators, or for faculty members who belong to underrepresented minority groups to pursue research aspects of categorical areas applicable to the awarding unit(s), and aid in filling the academic faculty gaps in these shortage areas within U.S. health professions institutions.
K12	**Institutional Clinical Oncology Research Career Development Award** To support a newly trained clinician appointed by an institution for development of independent research skills and experience in a fundamental science within the framework of an interdisciplinary research and development program.
K18	**The Career Enhancement Award** Provides either full-time or part-time support for experienced scientists who would like to broaden their scientific capabilities or to make changes in their research careers by acquiring new research skills or knowledge. Career enhancement experiences supported by this award should usually last no more than 1 year.
K22	**The NCI Transition Career Development Award for Underrepresented Minorities** To provide support to outstanding newly trained basic or clinical investigators to develop their independent research skills through a two-phase program: an initial period involving an intramural appointment at the NIH and a final period of support at an extramural institution. The award is intended to facilitate the establishment of a record of independent research by the investigator to sustain or promote a successful research career.
K22	**The NCI Scholars Program** To provide an opportunity for outstanding new investigators to begin their independent research careers, first within the special environment of the NCI and then at an institution of their choice. Specifically, this program provides necessary resources to initiate an independent research program of 3 to 4 years at the NCI, followed by an extramural funding mechanism (K22) to support their research program for 2 years at the extramural institution to which they are recruited.
K23	**Mentored Patient-Oriented Research Career Development Award** To provide support for the career development of investigators who have made a commitment to focus their research endeavors on patient-oriented research. This mechanism provides support for a 3-year minimum up to a 5-year period of supervised study and research for clinically trained professionals who have the potential to develop into productive clinical investigators.

K23	**Mentored Patient-Oriented Research Career Development Award for Underrepresented Minorities** To support the career development of investigators who have made a commitment to focus their research on patient-oriented research. This mechanism provides support for a period of supervised study and research for clinically trained professionals who have the potential to develop into productive clinical investigators in patient-oriented research.
K24	**Mid-Career Investigator Award in Patient-Oriented Research** To provide support for clinicians to allow them protected time to devote to patient-oriented research and to act as mentors for beginning clinical investigators. The target candidates are outstanding clinical scientists engaged in patient-oriented research who are within 15 years of their specialty training, who can demonstrate the need for a period of intensive research focus as a means of enhancing their clinical research careers, and who are committed to mentoring the next generation of clinical investigators in patient-oriented research.
K25	**Mentored Quantitative Research Career Development Award** This award allows an independent scientist in a highly technical field of research to identify an appropriate mentor with extensive experience in cancer research and to receive the necessary training and career development required to become involved in multidisciplinary cancer research.
K99/ R00	**NIH Pathway to Independence (PI) Award** The Pathway to Independence Award, which is part of the NIH Roadmap Initiative but is known as the Howard Temin Award within the NCI, will provide up to 5 years of support consisting of two phases. The initial phase will provide 1 to 2 years of mentored support for highly promising postdoctoral research scientists. This phase will be followed by up to 3 years of independent support contingent on securing an independent research position. Award recipients will be expected to compete successfully for independent R01 support from the NIH during the career transition award period. The PI Award is limited to postdoctoral trainees within 5 years of completion of their training who propose research relevant to the mission of one or more of the participating NIH Institutes and Centers.
L Series: Loan Repayment Program	
L30	**Loan Repayment Program for Clinical Researchers** To provide for the repayment of the educational loan debt of qualified health professionals involved in clinical research. Qualified health professionals who contractually agree to conduct qualified clinical research are eligible to apply for this program.
L32	**Loan Repayment Program for Clinical Researchers From Disadvantaged Backgrounds** To provide for the repayment of the educational loan debt of qualified health professionals from disadvantaged backgrounds involved in clinical research. Qualified health professionals from disadvantaged backgrounds who contractually agree to conduct qualified clinical research are eligible to apply for this program.

L40	**Loan Repayment Program for Pediatric Research** To provide for the repayment of the educational loan debt of qualified health professionals involved in research directly related to diseases, disorders, and other conditions in children. Qualified health professionals who contractually agree to conduct qualified pediatric research are eligible to apply for this program.
L50	**Loan Repayment Program for Contraception and Infertility Research** To provide for the repayment of the educational loan debt of qualified health professionals (including graduate students) who contractually agree to commit to conduct qualified contraception and/or infertility research.
L60	**Loan Repayment Program for Health Disparities Research** To provide for the repayment of the educational loan debt of qualified health professionals involved in minority health and health disparities research, for the purposes of improving minority health and reducing health disparities. Qualified health professionals who contractually agree to conduct qualified minority health disparities research or other health disparities research are eligible to apply for this program.
P Series: Research Program Projects and Centers	
P01	**Research Program Projects** To support multidisciplinary or multifaceted research programs that have a focused theme. Each component project should be directly related to and contribute to the common theme.
P20	**Exploratory Grants** To support planning for new programs, expansion or modification of existing resources, and feasibility studies to explore various approaches to the development of interdisciplinary programs that offer potential solutions to problems of special significance to the mission of the NIH. These exploratory studies may lead to specialized or comprehensive centers.
P30	**Center Core Grants** To support shared use of resources and facilities for categorical research by investigators from different disciplines who provide a multidisciplinary approach to a joint research effort, or by investigators from the same discipline who focus on a common research problem. The core grant is integrated with the Center's component projects or Program Projects, though funded independently from them. By providing more accessible resources, this support is expected to ensure greater productivity than that provided through the separate projects and Program Projects.
P41	**Biotechnology Resource Grants** To support biotechnology resources available to all qualified investigators without regard to the scientific disciplines or disease orientations of their research activities or specifically directed to a categorical program area.

P50	**Specialized Center Grants** To support any part of the full range of research and development from very basic to clinical; may involve ancillary supportive activities such as protracted patient care necessary to the primary research or R&D effort. This spectrum of activities comprises a multidisciplinary attack on a specific disease or biomedical problem area. These grants differ from Program Project grants in that they are usually developed in response to an announcement of the programmatic needs of an Institute or Division, and subsequently receive continuous attention from its staff. Centers also may serve as regional or national resources for special research purposes.
R Series: Research Projects	
R01	**Research Project** Grants are awarded to institutions to allow a Principal Investigator to pursue a scientific focus or objective in his or her area of interest and competence. Institutional sponsorship assures the NIH that the institution will provide facilities necessary to conduct the research and will be accountable for the grant funds. Applications are accepted for health-related research and development in all areas within the scope of the NIH's mission.
R03	**Small Research Grants** Small grants provide research support, specifically limited in time and amount, for activities such as pilot projects, testing of new techniques, or feasibility studies of innovative, high-risk research, which would provide a basis for more extended research.
R13	**Conferences** The NIH provides funding for conferences to coordinate, exchange, and disseminate information related to its program interests. Generally, such awards are limited to participation with other organizations in supporting conferences rather than provision of sole support. Costs eligible for support include salaries, consultant services, equipment rental, travel, supplies, conference services, and publications. Prospective applicants are encouraged to inquire in advance concerning possible interest on the part of an awarding Institute/Center (IC), and to obtain more information on application procedures and costs.
R15	**The NIH Academic Research Enhancement Awards (AREA)** To enhance the research environment of educational institutions that have not been traditional recipients of NIH research funds, this award provides limited funds to those institutions' faculty members to develop new research projects or expand ongoing research activities in health sciences and to encourage students to participate in the research activity. As funds are anticipated to continue to be available each year, the NIH is now inviting applications for AREA grants through a standing, ongoing Program Announcement.
R21	**Exploratory/Developmental Grants** To encourage the development of new research activities in categorical program areas. (Support generally is restricted in the level of support and duration.)
R24	**Resource-Related Research Projects** To support research projects that will enhance the capability of resources to serve biomedical research.

R25E	**Cancer Education Grant Program (CEGP)** A flexible, curriculum-driven program aimed at developing and sustaining innovative educational approaches that ultimately will have an impact on reducing cancer incidence, mortality, and morbidity, as well as on improving the quality of life of cancer patients. The CEGP accepts investigator-initiated grant applications that pursue a wide spectrum of objectives ranging from short courses to the development of new curricula in academic institutions; to national forums and seminar series; to hands-on workshop experiences for the continuing education of health care professionals, biomedical researchers, and the lay community; to structured short-term research experiences designed to motivate high school, college, medical, dental, and other health professional students to pursue careers in cancer research. Education grants can focus on education activities before, during, and after the completion of a doctoral-level degree, as long as they address a need that is not fulfilled adequately by any other grant mechanism available at the NIH and are dedicated to areas of particular concern to the National Cancer Program.
R25T	**Cancer Education and Career Development Program** To support the development and implementation of curriculum-dependent, team-oriented programs to train predoctoral and postdoctoral candidates in cancer research team settings that are highly interdisciplinary and collaborative. This specialized program is particularly applicable to the behavioral, prevention, control, nutrition, and population sciences but should also be considered by other areas of research (e.g., imaging, pathology) that will require sustained leadership, dedicated faculty time, specialized curriculum development and implementation, interdisciplinary research environments, and more than one mentor per program participant to achieve their education and research career development objectives.
R33	**Exploratory/Developmental Grants, Phase II** To provide a second phase for support of innovative exploratory and developmental research activities initiated under the R21 mechanism. Although only R21 awardees are generally eligible to apply for R33 support, specific program initiatives may establish eligibility criteria under which applications could be accepted from applicants who demonstrate program competency equivalent to that expected under R33.
R35	**Outstanding Investigator Award (OIA)** To provide long-term support to experienced investigators with outstanding records of cancer research productivity who propose to conduct exceptional research. The OIA is intended to allow investigators the opportunity to take greater risks, be more adventurous in their lines of inquiry, or take the time to develop new techniques. The OIA would allow an Institution to submit an application nominating an established Program Director/Principal Investigator (PD/PI) for a 7-year grant.

R37	**Method to Extend Research in Time (MERIT) Award** To provide longer term grant support to Early Stage Investigators (ESIs). By providing such an opportunity for longer term support to ESIs, the NCI intends to give them flexibility and opportunity for creativity and innovation, and additional time to successfully launch their careers and to become more established before having to submit renewal applications. The objective of the NCI's ESI MERIT Award is to allow eligible investigators the opportunity to obtain up to 7 years of support in two segments, with the first being an initial 5-year award and the second being based on an opportunity for an extension of up to 2 additional years, based on an expedited NCI review of the accomplishments during the initial funding segment. Investigators may not apply for an ESI MERIT award. ESIs who have submitted a single-Principal Investigator (PI) R01 application that received a score within the NCI payline are eligible for consideration for the award. NCI program staff members will identify eligible candidate applications for the ESI MERIT Award and submit them to the members of the National Cancer Advisory Board (NCAB) for consideration. If recommended by the NCAB and approved by NCI leadership, the ESI R01 will be converted to an ESI MERIT (R37) for the initial 5-year funding segment.
R38	**Stimulating Access to Research in Residency (StARR)** To recruit and retain outstanding, postdoctoral-level health professionals who have demonstrated potential and interest in pursuing careers as clinician-investigators. To address the growing need for this critical component of the research workforce, this funding opportunity seeks applications from institutional programs that can provide outstanding mentored research opportunities for Resident-Investigators and foster their ability to transition to individual career development research awards. The program will support institutions to provide support for up to 2 years of research conducted by Resident-Investigators in structured programs for clinician-investigators with defined program milestones.
R50	**Research Specialist Award** To encourage the development of stable research career opportunities for exceptional scientists who want to pursue research within the context of an existing cancer research program, but not serve as independent investigators. These scientists, such as researchers within a research program, core facility managers, and data scientists, are vital to sustaining the biomedical research enterprise. The award is intended to provide desirable salaries and sufficient autonomy so that individuals are not solely dependent on grants held by Principal Investigators for career continuity.
R55	**James A. Shannon Director's Award** To provide a limited award to investigators to further develop, test, and refine research techniques; perform secondary analysis of available data sets; test the feasibility of innovative and creative approaches; and conduct other discrete projects that can demonstrate their research capabilities and lend additional weight to their already meritorious applications. Essentially replaced in FY2005 by the R56 award.

R56	**High-Priority, Short-Term Project Award** Begun in FY2005, this grant provides funds for 1- or 2-year high-priority new or competing renewal R01 applications that fall just outside the limits of funding of the participating NIH Institutes and Centers (ICs); recipients of R56 awards will be selected by IC staff from R01 applications that fall at or near the payline margins.
RL1	**Linked Research Project Grant** To support a discrete, specified, circumscribed project that is administratively linked to another project or projects, and to be performed by the named investigator(s) in an area representing his or her specific interest and competencies. An RL1 award may only be disaggregated from U54 applications, and organizations may not apply for an RL1, Linked Research Project Grant. The RL1 activity code is used in lieu of the R01 for those programs that offer linked awards.

Small Business Innovation Research (SBIR) (R43/44) and Small Business Technology Transfer (STTR) (R41/42) Programs

The NIH welcomes grant applications from small businesses in any biomedical or behavioral research area as described in the solicitations below. Support under the SBIR program is normally provided for 6 months/$100,000 for Phase I and 2 years/$500,000 for Phase II. Applicants may propose longer periods of time and greater amounts of funds necessary for completion of the project.

R41	**STTR Grants, Phase I** To support cooperative research and development (R&D) projects between small business concerns and research institutions, limited in time and amount, to establish the technical merit and feasibility of ideas that have potential for commercialization.
R42	**STTR Grants, Phase II** To support in-depth development of cooperative R&D projects between small business concerns and research institutions, limited in time and amount, whose feasibility has been established in Phase I and that have potential for commercial products or services.
R43	**SBIR Grants, Phase I** To support projects, limited in time and amount, to establish the technical merit and feasibility of R&D ideas that may ultimately lead to commercial products or services.
R44	**SBIR Grants, Phase II** To support in-depth development of R&D ideas whose feasibility has been established in Phase I and that are likely to result in commercial products or services.
S Series: Research-Related Programs	
SC1	**Research Enhancement Award** Individual investigator-initiated research projects aimed at developing researchers at minority-serving institutions (MSIs) to a stage where they can transition successfully to other extramural support (R01 or equivalent).
SC2	Pilot Research Project Individual investigator-initiated pilot research projects for faculty at MSIs to generate preliminary data for a more ambitious research project.
Si2/ R00	**Lasker Clinical Research Scholar Program** This program will support the research activities during the early stage careers of independent clinical researchers.
S06	**Minority Biomedical Research Support (MBRS)** To strengthen the biomedical research and research training capability of ethnic minority institutions and thus establish a more favorable milieu for increasing the involvement of minority faculty and students in biomedical research.

S07	**Biomedical Research Support Grants (NCRR BRSG)** As an example of this funding mechanism, the NIH issued a Request for Applications (RFA) in FY2004 to provide short-term interim support for institutional activities that will strengthen oversight of human subjects research at institutions that receive significant NIH support for clinical research. Although there is considerable flexibility in the types of activities that could be supported under the BRSG program, that RFA emphasized the importance of efforts to enhance the protection of research subjects by means that would be sustained by the recipient institution after the award period ends. Awardees also are required to collaborate with other institutions conducting human subjects research and are not currently funded under this program, and to share educational resources, computer technologies, best practices, etc. Although all NIH components supporting clinical research (including the NCI) are providing support for this program, it is administered by the National Center for Research Resources (NCRR).
S10	**Biomedical Research Support Shared Instrumentation Grants (NCRR SIG)** The National Center for Research Resources (NCRR) initiated its competitive Shared Instrumentation Grant (SIG) Program in FY1982. Shared Instrumentation Grants provide support for expensive state-of-the-art instruments utilized in both basic and clinical research. This program is designed to meet the special problems of acquisition and updating of expensive shared-use instruments that are not generally available through other NIH funding mechanisms, such as the regular research project, program project, or center grant programs. Applications for funds to design or to advance the design of new instruments are not accepted. The objective of the program is to make available to institutions with a high concentration of NIHsupported biomedical investigators expensive research instruments that can only be justified on a shared-use basis and for which meritorious research projects are described.
S21	**Research and Institutional Resources Health Disparities Endowment Grants—Capacity Building** To strengthen the research and training infrastructure of the institution, while addressing current and emerging needs in minority health and other health disparities research.
T Series: Training Programs	
T15	**Continuing Education Training Grants** To assist professional schools and other public and nonprofit institutions in the establishment, expansion, or improvement of programs of continuing professional education, especially for programs of extensive continuation, extension, or refresher education dealing with new developments in the science and technology of the profession.
T32	**NIH National Research Service Award—Institutional Research Training Grants** To enable institutions to make National Research Service Awards to individuals selected by them for predoctoral and postdoctoral research training in specified shortage areas.
T34	**Undergraduate NRSA Institutional Research Training Grants** To enhance the undergraduate research training of individuals from groups underrepresented in biomedical, behavioral, clinical, and social sciences through Institutional National Research Service Award Training Grants in preparation for research doctorate degree programs.

U Series: Cooperative Agreements	
U01	**Research Projects—Cooperative Agreements** To support a discrete, specified, circumscribed project to be performed by the named investigators in an area representing their specific interests and competencies.
U10	**Cooperative Clinical Research—Cooperative Agreements** To support clinical evaluation of various methods of therapy and/or prevention in specific disease areas. These represent cooperative programs between participating institutions and Principal Investigators and are usually conducted under established protocols.
U13	**Conference—Cooperative Agreements** To coordinate, exchange, and disseminate information related to its program interests, an NIH Institute or Center can use this type of award to provide funding and direction for appropriate scientific conferences. These cooperative agreements allow the NCI to partner with one or more outside organizations to support international, national, or regional meetings, conferences, and workshops that are of value in promoting the goals of the National Cancer Program.
U19	**Research Program—Cooperative Agreements** To support a research program of multiple projects directed toward a specific major objective, basic theme, or program goal, requiring a broadly based, multidisciplinary, and often long-term approach.
U2C	**Resource-Related Research Multi-Component Projects and Centers Cooperative Agreements** To support multi-component research resource projects and centers that will enhance the capability of resources to serve biomedical research. Substantial Federal programmatic staff involvement is intended to assist investigators during performance of the research activities, as defined in the terms and conditions of the award.
U24	**Resource-Related Research Projects—Cooperative Agreements** To support research projects contributing to improvement of the capability of resources to serve biomedical research.
U42	**Animal (Mammalian and Nonmammalian) Model, and Animal and Biological Materials Resource Cooperative Agreements** To develop and support animal (mammalian and nonmammalian) models or animal or biological materials resources available to all qualified investigators without regard to the scientific disciplines or disease orientations of their research activities or specifically directed to a categorical program. Nonmammalian resources include nonmammalian vertebrates, invertebrates, cell systems, and nonbiological systems.
U43	**Small Business Innovation Research (SBIR) Cooperative Agreements—Phase I** To support projects, limited in time and amount, to establish the technical merit and feasibility of R&D ideas that may ultimately lead to commercial products or services.

U44	**Small Business Innovation Research (SBIR) Cooperative Agreements—Phase II** To support in-depth development of R&D ideas whose feasibility has been established in Phase I and that are likely to result in commercial products or services.
U54	**Specialized Center—Cooperative Agreements** To support any part of the full range of research and development from very basic to clinical; may involve ancillary supportive activities such as protracted patient care necessary to the primary research or R&D effort. The spectrum of activities comprises a multidisciplinary attack on a specific disease entity or biomedical problem area. These differ from program projects in that they are usually developed in response to an announcement of the programmatic needs of an Institute or Division and subsequently receive continual attention from its staff. Centers also may serve as regional or national resources for special research purposes, with assistance from staff of the funding component in identifying appropriate priority needs.
U56	**Exploratory Grants—Cooperative Agreements** To support planning for new programs, expansion, or modification of existing resources, and feasibility studies to explore various approaches to the development of interdisciplinary programs that offer potential solutions to problems of special significance to the mission of the NIH. These exploratory studies may lead to specialized or comprehensive centers. Substantial Federal programmatic staff involvement is intended to assist investigators during performance of the research activities, as defined in the terms and conditions of award.
UE5	**Research Education Cooperative Agreements Program** The NIH Research Education Cooperative Agreements Program (UE5) supports research education activities in the mission areas of the NIH. The overarching goal of the NCI's UE5 program is to support educational activities that complement and/or enhance the training of a workforce to meet the nation's biomedical, behavioral, and clinical cancer research needs.
UG1	**Clinical Research Cooperative Agreements — Single Project** To support single project applications conducting clinical evaluation of various methods of therapy and/or prevention (in specific disease areas). Substantial Federal programmatic staff involvement is intended to assist investigators during performance of the research activities, as defined in the terms and conditions of the award. NOTE: The UG1 is the single-component companion to the U10, which is used for multi-project applications only.
UG3	**Phase 1 Exploratory/Developmental Cooperative Agreement** As part of a bi-phasic approach to funding exploratory and/or developmental research, the UG3 provides support for the first phase of the award. This activity code is used in lieu of the UH2 activity code when larger budgets and/or project periods are required to establish feasibility for the project.

UH2/ UH3	**Exploratory/Developmental Cooperative Agreement Phase I/II** To support the development of new research activities in categorical program areas. (Support generally is restricted in level of support and in time.) The UH3 provides a second phase for the support for innovative exploratory and development research activities initiated under the UH2 mechanism. Although only UH2 awardees are generally eligible to apply for UH3 support, specific program initiatives may establish eligibility criteria under which applications could be accepted from applicants demonstrating progress equivalent to that expected under the UH2.
UM1	**Research Project With Complex Structure Cooperative Agreement** To support cooperative agreements involving large-scale research activities with complicated structures that cannot be appropriately categorized into an available single-component activity code (e.g., clinical networks, research programs, or consortia). The components represent a variety of supporting functions and are not independent of each component. Substantial Federal programmatic staff involvement is intended to assist investigators during performance of the research activities, as defined in the terms and conditions of the award. The performance period may extend up to 7 years but only through the established deviation request process. ICs desiring to use this activity code for programs greater than 5 years must receive OPERA prior approval through the deviation request process.

Appendix G: Glossary of Acronyms

ABTC	Adult Brain Tumor Consortium
AHRQ	Agency for Healthcare Research and Quality
AIDS	Acquired Immune Deficiency Syndrome
AISB	Applied Information Systems Branch
AMC	AIDS Malignancy Clinical Trials Consortium
ARA	Awaiting Receipt of Application
AREA	Academic Research Enhancement Award
BRSG	Biomedical Research Support Grant
BSA	Board of Scientific Advisors
BSC	Board of Scientific Counsellors
CAM	Complementary and Alternative Medicine
CATS	Concept to Award Tracking System
CBIIT	NCI Center for Biomedical Informatics and Information Technology
CCCT	Coordinating Center for Clinical Trials
CCG	Center for Cancer Genomics
CCR	Center for Cancer Research
CCSG	Cancer Center Support Grant
CCT	Center for Cancer Training
CD	Career Development
CDC	Centers for Disease Control and Prevention
CEGP	Cancer Education Grant Program
CGCHR	Center for Global Cancer Health Research
CGH	Center for Global Health
CHTN	Collaborative Human Tissue Network
CISNET	Cancer Intervention and Surveillance Modelling Network
CIT	Center for Information Technology
CMO	Committee Management Office
COI	Conflict of Interest
CPACHE	Comprehensive Partnerships to Advance Cancer Health Equity
CRCHD	Center to Reduce Cancer Health Disparities
CRP	Collaborative Research Partnership
CSO	Common Scientific Outline
CSCPDPC	Consortium of the Study of Chronic Pancreatitis, Diabetes, and Pancreatic Cancer
CSR	Center for Scientific Review
CSSI	Center for Strategic Scientific Initiatives
CTAC	Clinical Trials and Translational Research Advisory Committee
DCB	Division of Cancer Biology
DCCPS	Division of Cancer Control and Population Sciences
DCEG	Division of Cancer Epidemiology and Genetics
DCLG	Director's Consumer Liaison Group (now NCRA)
DCP	Division of Cancer Prevention
DCTD	Division of Cancer Treatment and Diagnosis
DEA	Division of Extramural Activities
DEAS	Division of Extramural Activities Support
DEAIS	DEA Information System
DFO	Designated Federal Officer
DHHS	U.S. Department of Health and Human Services (now HHS)
DPIC	Detection of Pathogen-Induced Cancer
DRR	Division of Receipt and Referral
EDRN	Early Detection Research Network
EEC	Electronic Early Concurrence
EPMC	Extramural Program Management Committee
eRA	Electronic Research Administration
ESA	Extramural Support Assistant
ESATTS	Extramural Officer Science Administrator Training – Tracking System
ETCTN	Experimental Therapeutics Clinical Trials Network
eTUG	NIH eRA Technical Users Group
FACA	Federal Advisory Committee Act
FDA	Food and Drug Administration
FFRDC	Federally Funded Research and Development Center
FIC	Fogarty International Center
FLARE	Fiscal Linked Analysis of Research Emphasis

FNLAC	Frederick National Laboratory Advisory Committee
FNLCR	Frederick National Laboratory for Cancer Research
FOA	Funding Opportunity Announcements
FOIA	Freedom of Information Act
FY	Fiscal Year
HHS	Department of Health and Human Services (replaces DHHS)
IC	Institute/Center
ICRP	International Cancer Research Partnership
IDeA	Institutional Development Award
IMAT	Innovative Molecular Analysis Technologies
IMPAC	Information for Management, Planning, Analysis, and Coordination
IRG	Initial Review Group
IRM	Information Resources Management
IT	Information Technology
LOI	Letter of Intent
LRP	Loan Repayment Program
MBRS	Minority Biomedical Research Support
MERIT	Method to Extend Research in Time
MSI	Minority-Serving Institution
NCAB	National Cancer Advisory Board
NCCCP	NCI Community Cancer Centers Program
NCI	National Cancer Institute
NCORP	NCI Community Oncology Research Program
NCRA	NCI Council of Research Advocates (replaces DCLG)
NCRR	National Center for Research Resources
NCTN	National Clinical Trials Network
NDPA	NIH Director Pioneer Award
NED	NIH Electronic Directory
NExT	NCI Experimental Therapeutics
NFRP	NCI Funded Research Portfolio
NGRAD	NCI Grant-Related Directory
NHLBI	National Heart, Lung, and Blood Institute
NIAAA	National Institute on Alcohol Abuse and Alcoholism
NIAID	National Institute of Allergy and Infectious Diseases
NIEHS	National Institute of Environmental Health Sciences
NIH	National Institutes of Health
NLM	National Library of Medicine
NRSA	National Research Service Award
OBBR	Office of Biorepositories and Biospecimen Research
OBF	Office of Budget and Finance
OCG	Office of Cancer Genomics
OD	Office of the Director
OEA	Office of Extramural Applications
OER	Office of Extramural Research
OFACP	Office of Federal Advisory Committee Policy
OHAM	Office of HIV and AIDS Malignancies
OIA	Outstanding Investigator Award
OPERA	Office of Policy for Extramural Research Administration
ORRPC	Office of Referral, Review, and Program Coordination
OSP	Office of Scientific Programs
PA	Program Announcement
PAR	Reviewed Program Announcement
PCP	President's Cancer Panel
PCRB	Program Coordination and Referral Branch
PD	Pharmacodynamics
PHS	Public Health Service (HHS)
PI	Principal Investigator
PO	Program Official
POA&M	Plan of Actions and Milestones
PQ	Provocative Questions
PRESTO	Program Review and Extramural Staff Training Office
RAEB	Research Analysis and Evaluation Branch
R&D	Research and Development
RFA	Request for Applications
RFP	Request for Proposals
RIO	Research Integrity Officer
RM	Road Map
RO	Referral Officer
RPG	Research Project Grant
RPRB	Research Programs Review Branch
RTCRB	Research Technology and Contract Review Branch

RTRB	Resources and Training Review Branch
SA	Staff Assistant
SA&A	Security Assessment and Authorization
SBIR	Small Business Innovation Research
SBIRDC	SBIR Development Center
SEER	Surveillance, Epidemiology, and End Results
SEP	Special Emphasis Panel
SGE	Special Government Employee
SIC	Special Interest Category
SIG	Shared Instrumentation Grant
SMW	Science Management Workspace
SPL	Scientific Program Leader
SPORE	Specialized Program of Research Excellence
SPRS	Secure Payee Reimbursement System
SRB	Special Review Branch
SREA	Scientific Review and Evaluation Activities
SRLB	Special Review and Logistics Branch
SRO	Scientific Review Officer (formerly Scientific Review Administrator)
STTR	Small Business Technology Transfer Research
T&E	Training and Education
TMEN	Tumor Microenvironment Network

Appendix H: Cancer Information Sources on the Internet

NCI Website

The National Cancer Institute maintains a number of websites containing information about the Institute and its programs. All NCI websites, including those designed to provide cancer-related information to the general public and physicians, can be reached from the NCI home page at https://www.cancer.gov/.

DEA Websites

The following websites are maintained by the DEA to provide detailed information to researchers and the public about NCI funding opportunities and Advisory Boards and groups. Links to the individual DEA Web pages via the DEA home page are listed below.

Funding Opportunities/Policies

https://deainfo.nci.nih.gov/funding.htm
Comprehensive information about external funding opportunities for cancer research; lists of active PAs and RFAs; recently cleared concepts; grant policies and guidelines; downloadable application forms.

https://deais.nci.nih.gov/foastatus/?nt=P
Active PAs, with links to detailed descriptions.

https://deais.nci.nih.gov/foastatus/?
Active RFAs, with links to detailed descriptions.

https://deainfo.nci.nih.gov/grantspolicies/index.htm
Links to full-text NCI and NIH policies related to grants and grant review (e.g., Guidelines on the Inclusion of Women and Minorities as Subjects in Clinical Research and Instructions to Reviewers for Evaluating Research Involving Human Subjects in Grant and Cooperative Agreement Applications).

https://grants.nih.gov/policy/early-investigators/index.htm
New and Early Stage Investigator Policies.

https://www.cancer.gov/grants-training/training
The Center for Cancer Training (CCT).

https://www.cancer.gov/about-nci/organization/oga
Office of Grants Administration (OGA) manages all NCI business-related activities associated with negotiation, award, and administration of NCI grants and cooperative agreements.

Advisory Boards and Groups

https://deainfo.nci.nih.gov/advisory/index.htm
Links to the home page of each NCI Advisory Board, Committee, Group, etc.

https://deainfo.nci.nih.gov/advisory/pcp/index.htm
President's Cancer Panel Charter; meeting agendas, meeting minutes, annual reports.

https://deainfo.nci.nih.gov/advisory/ncab/ncab.htm
National Cancer Advisory Board Charter; members of subcommittees, meeting agendas.

https://deainfo.nci.nih.gov/advisory/ncab/ncab-meetings.htm
NCAB meeting information (agenda, minutes, and presentations).

https://deainfo.nci.nih.gov/advisory/bsa/bsa.htm
Board of Scientific Advisors Charter; members of subcommittees, meeting agendas.

https://deainfo.nci.nih.gov/advisory/bsa/bsameetings.htm
BSA meeting information (agenda, minutes, and presentations).

https://deainfo.nci.nih.gov/advisory/fac/fac.htm
NCI Frederick National Laboratory Advisory Committee Charter, functional statement, members, meeting information, and subcommittees.

https://deainfo.nci.nih.gov/advisory/bsc/bs/bs.htm
Board of Scientific Counsellors (Basic Sciences) Charter; functional statement, and members.

https://deainfo.nci.nih.gov/advisory/bsc/cse/cse.htm
Board of Scientific Counsellors (Clinical Sciences and Epidemiology) Charter, functional statement, and members.

https://deainfo.nci.nih.gov/advisory/ctac/ctac.htm
Clinical Trials and Translational Research Advisory Committee Charter, members, minutes, and agendas.

https://deainfo.nci.nih.gov/advisory/ncra/ncra.htm
NCI Council of Research Advocates (NCRA) Charter, functional statement, members, and meeting information.

https://deainfo.nci.nih.gov/advisory/irg/irg.htm
NCI Initial Review Group (IRG) Charter, functional statement, and members.

https://deainfo.nci.nih.gov/advisory/sep/sep.htm
Special Emphasis Panel Charter, functional statement, and rosters of most recent review meetings.

https://gsspubssl.nci.nih.gov/presentations
NCI Advisory Board Presentations since 2011.

Other NIH Websites

https://www.nih.gov
NIH Home page

https://grants.nih.gov/grants/how-to-apply-application-guide.html
Grants & Funding – Applying electronically

https://grants.nih.gov/policy/index.htm
Grants & Funding – Grants policies and guidance

https://grants.nih.gov/funding/index.htm
Grants & Funding – Funding opportunities and notices

https://researchtraining.nih.gov/
Extramural training mechanisms

https://projectreporter.nih.gov/reporter.cfm
Research Portfolio Online Reporting Tools

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