Report of Trans-NIH Research Conducted in Fiscal Year 2013

Report to Congress

National Institutes of Health
Department of Health and Human Services

February 2014

Report of Trans-NIH Research Conducted in Fiscal Year 2013
Report to Congress

I. Introduction

Section 402A(c)(2)(B) of the Public Health Service Act (PHS Act) (42 U.S.C. 282a(c)(2)(B)), added to the PHS Act in Section 103(a) of the National Institutes of Health (NIH) Reform Act of 2006, requires that the Secretary of Health and Human Services submit to Congress an annual report identifying the percentage of funds made available by each national research institute and national center with respect to conducting or supporting research that involves collaboration between the institute or center (IC) and one or more other national research institutes or national centers. This annual report provides the dollar amounts made available by each IC in FY 2013 for conducting or supporting research that involves collaboration between that IC and one or more other ICs. In addition, the U.S. House of Representatives Report 109-687 accompanying the NIH Reform Act of 2006 recognizes that there may be collaborative work between ICs that may not be fully demonstrated in budgetary data, such as planning meetings and conferences and exchanging day-to-day information between programs. Accordingly, this report references examples of activities that fall under these categories.

II. Overview of Collaborations within the NIH

The NIH is composed of 27 ICs, each having a distinct mission. Leaders across the NIH recognize that scientific progress often comes at the interface of traditional boundaries. Therefore, there is considerable trans-NIH collaborative activity across IC boundaries at every level of NIH operations. Trans-NIH collaborative activities can be found in all disease areas and across basic, translational, and clinical research. These collaborations can be formal or informal and can involve sharing materials, specimens, or scientific expertise. Collaborations take place at any or all stages of a research project or program, including: 1) development of a concept, initiative, or plan; 2) funding; 3) conduct of the research in intramural laboratories; 4) management and administration of the project; and 5) assessment of results. Although some collaborations are the product of highly visible joint activities, such as the NIH Common Fund programs and the NIH Blueprint for Neuroscience Research, the vast majority of collaborative activities takes place day-to-day in the office and in the laboratory. This report includes the activities of 24 of the 27 ICs. For reasons discussed below, the Clinical Center, the Center for Information Technology, and the Center for Scientific Review are not part of this report.

III. Scope of the Report

Inclusions:

For the purposes of this report, a trans-NIH research collaboration is defined as a formally documented, science-based effort that includes two or more ICs. Within this defined cohort, two types of extramural collaborations are included in the budget figures presented in this report: 1) grants and contracts that are cofunded by two or more ICs, and 2) grants and contracts funded in response to collaborative Funding Opportunity Announcements (FOAs) developed and announced by two or more ICs. FOAs of this type include Requests for Applications, Requests

for Proposals, and Program Announcements. A qualifying feature of these extramural collaborative FOAs is the formal participation by multiple ICs at the outset of the activity in developing and issuing the FOA.

The NIH intramural program is also highly collaborative. In addition to collaborating on research, NIH intramural programs also jointly fund specific shared resources (e.g., imaging technologies and instrumentation) to minimize duplicative equipment and to conserve costs. Eligible intramural collaborative research projects are included within the "Total Collaborative Activities" column in Table 1.

Exclusions:

Informal collaborations between ICs are excluded from this report, although they occur within all programs and at all levels. The report also excludes grants funded in response to "Parent Announcements." These general announcements of guidelines for grant mechanisms (e.g., R01 grants) do not address scientific areas and, therefore, are outside the scope of the collaborative FOAs included in this report. As the list of excluded announcements continues to be refined, some ICs may have an apparent decrease in their collaborative activities due to projects being excluded for FY 2013 that were included in the previous years' reports. As in the previous reports, grants that provide shared resources are excluded from this report unless they are cofunded or funded in response to collaborative program initiatives.

This report also excludes collaborative activities initiated and/or led through or funded by offices within the Office of the Director's (OD) Division of Program Coordination, Planning, and Strategic Initiatives (DPCPSI). This is consistent with this report's definition of a trans-NIH collaboration and with NIH's interpretation of the legislative language. Trans-NIH collaborations are central to the missions of all DPCPSI offices, and their efforts are critical to the synergy of inter-IC collaborations of all types. The six DPCPSI offices are as follows:

- The Office of Strategic Coordination (OSC) oversees collaborative efforts across the NIH to plan, implement, and manage the programs funded via the NIH Common Fund. These programs are not included because they are the subject of a separate report, the Common Fund Strategic Planning Report. All NIH ICs participate in these programs, and some ICs have contributed additional funds from their own appropriations. The IC funds are represented in this report, but the dollars appropriated to the Common Fund within the OD appropriation are not.

- The Office of Behavioral and Social Sciences Research (OBSSR) (a) leads the development of priorities for increasing the scope of and support for behavioral and social science research and training at the NIH; (b) coordinates research in the behavioral and social sciences across the 27 ICs; (c) develops and facilitates new initiatives in partnership with the ICs; (d) provides leadership in disseminating findings from behavioral and social sciences research and communicating the importance of such research in the acquisition, treatment, and prevention of disease and disability; and (e) advises key NIH officials on matters relating to behavioral and social science research.

- The Office of Research Infrastructure Programs (ORIP) is composed of the Division of Comparative Medicine, Division of Construction and Instruments, Science Education Partnership Awards, and the Office of Science Education. The ORIP (a) provides support for resource activities and research to identify, develop, characterize, and improve animal models and biological materials for the study of human disease; (b) assists institutions in complying with the regulations and policies related to care and use of laboratory animals and supports the purchase of equipment for animal resources, transgenic animal resources, and similar activities; (c) provides high-quality, disease-free animal models and biological materials and specialized animal research facilities for biomedical investigators; (d) supports the development and access to a wide range of research models; (e) supports research activities at National Primate Research Centers and other resources; (f) supports training and career development for veterinarians; (g) provides repositories for the storage and distribution of genetically altered animal models; (h) supports the breeding of and accessibility to research animals for biomedical research; (i) supports grants for the acquisition of state-of-the-art instrumentation; (j) supports grants to expand, remodel, renovate, or alter existing research facilities or to construct new research facilities, including to improve laboratory animal facilities; and (k) collaborates in science education activities at the NIH.

- The Office of Research on Women's Health (ORWH) (a) advises the NIH Director and staff on matters relating to research on women's health; (b) serves as the focal point at the NIH for women's health research and the study of sex/gender factors; (c) promotes, stimulates, and supports efforts to improve the health of women through biomedical and behavioral research on the roles of sex and gender in health and disease; (d) ensures that women are appropriately represented in clinical studies supported by the NIH; and (e) develops opportunities for the recruitment, retention, re-entry, and advancement of women in biomedical careers and advancement of careers for men and women in women's health research.

- The Office of Disease Prevention (ODP) includes the Office of Dietary Supplements. The ODP (a) provides overall coordination and guidance to the ICs concerning disease prevention and health promotion initiatives, policies, and activities; (b) collaborates in the formulation of research initiatives and policies that promote public health; and (c) stimulates, coordinates, and supports research on dietary supplements. The ODP also works collaboratively with the ICs to implement the NIH-FDA Tobacco Regulatory Science Program, which addresses priority areas of the Family Smoking Prevention and Tobacco Control Act, including the manufacture, distribution, and marketing of tobacco products.

- The Office of AIDS Research (OAR) serves as a unique model of trans-NIH planning and management, overseeing all NIH AIDS-related research. The OAR (a) coordinates the scientific, budgetary, legislative, and policy elements of the AIDS research portfolio; (b) develops an annual Presidential by-pass budget for AIDS research; (c) through its annual comprehensive trans-NIH planning, budgeting, and portfolio analysis processes, identifies the highest priority areas of scientific opportunity and public health challenges that require focused attention; tracks and monitors AIDS research expenditures; minimizes duplication; ensures that AIDS research dollars are invested effectively and efficiently and aligned with the highest priority AIDS research objectives; and informs the public, the scientific

community, Congress, and the AIDS-affected communities about the NIH research agenda; (d) manages and facilitates multi-Institute and trans-Institute activities to address research needs; (e) fosters research and collaborations by designating funds and supplements to jump-start or pilot program areas; (f) sponsors reviews or evaluations of research program areas; (g) convenes the Office of AIDS Research Advisory Council and its associated working groups; and (h) facilitates international AIDS research and training.

The budget numbers exclude collaborative efforts coordinated through the NIH Clinical Center because the Clinical Center budget is funded through a mandatory contribution from the ICs as a standard percentage of the intramural IC budgets. However, it is important to note that the Clinical Center coordinates a range of trans-NIH activities, including the highly successful Bench-to-Bedside awards program. This program was supported by three Offices within the NIH OD, in addition to voluntary contributions from eight ICs in FY 2013. The Bench-to-Bedside awards program was created to speed translation of promising laboratory discoveries into new medical treatments by encouraging collaborations among basic scientists and clinical investigators. Since the Bench-to-Bedside program began over 14 years ago, 209 collaborative projects have received funding, representing partnerships among multiple ICs and extramural NIH grantees. Additionally, the Clinical Center is "opening its doors" to the extramural community through an extramural grant mechanism that partners an extramural investigator (PI) with an investigator in the NIH intramural program (co-PI) who must use the Clinical Center and its resources for at least a portion of its activities with the goal of conducting collaborative research projects aligned with the NIH mission and its efforts to enhance the translation of basic biological discoveries into clinical applications that improve health. The new grant program, *Opportunities for Collaborative Research at the Clinical Center (U01),* had its first cycle in FY 2013 and will accept its second cycle of applications through March 20, 2014.

Other trans-NIH activities are coordinated through centers of excellence established within the Clinical Center to better integrate a number of scientific areas or services within the NIH community. The Center for Neuroscience and Regenerative Medicine (CNRM) focuses on the discovery of methods to better intervene and prevent the long-term consequences of traumatic brain injury. The CNRM is a collaboration between the NIH and the Uniformed Services University of the Health Sciences. The goal is discovering new diagnostic tools (especially using imaging at the NIH) and treatment paradigms for both military and civilian brain trauma victims. The Clinical Center's Center for Interventional Oncology focuses on expanding ways to use advanced imaging technologies for diagnosing and treating localized cancers in ways that are precisely targeted and minimally or non-invasive. Magnetic resonance imaging, positron emission tomography, computed tomography, and combinations of these approaches guide the devices for diagnosis and treatment. The Center for Infectious Disease Imaging is a collaborative program that seeks to use advanced anatomic, functional, and molecular imaging methods to identify and assess the manifestations and progression of infectious disease. The Imaging Sciences Training Program provides trainees with a background in state-of-the-art methodology in imaging technology while working collaboratively in a variety of research disciplines between the Clinical Center and various ICs. In addition, the Clinical Center coordinates the development and maintenance of the Biomedical Translational Research Information System (BTRIS), a repository of clinical research data from the Clinical Center's electronic health record systems and from five other ICs. BTRIS serves as a trans-NIH resource that supports intramural access to data for answering research questions.

This report also excludes the following: 1) collaborative efforts coordinated through the Center for Information Technology, whose mission is to provide, coordinate, and manage information technology and to advance computational science; 2) IC mandatory contributions to the development and maintenance of shared databases developed by the National Library of Medicine; 3) the Center for Scientific Review, which has a wholly collaborative mission as the portal for NIH grant applications and their review for scientific merit; 4) activities involving NIH collaboration with other agencies within HHS (these types of activities are included in the Report on NIH Collaborations with Other HHS Agencies); 5) collaborations between individual ICs and private sector partners; and 6) the National Children's Study, the Special Statutory Funding Program for Type 1 Diabetes Research, and the Superfund Program, which are collaborative efforts by design but not included in Table 1.

IV. Percentage of Funds Made Available in Fiscal Year 2013 by Each National Research Institute or Center for Conducting Trans-NIH Research

Table 1 presents the percentage of FY 2013 funds made available by each research IC for conducting trans-NIH research. The IC dollar amounts presented in this table represent the sum of collaborative activities in three areas: extramural grants, extramural contracts, and intramural research projects. Intramural collaborations are identified through the NIH Intramural Database (http://intramural.nih.gov/index.tml). As with extramural projects, reporting on intramural projects is limited to formal collaborations between two or more ICs. In each case, the total FY 2013 budget for a collaborative intramural research project is credited wholly to the lead IC because the database does not identify effort or budget from individual ICs.

Examples of collaborative activities across ICs that are not fully demonstrated in budgetary data include committees, working groups, and task forces; conferences, workshops, and meetings; and educational campaigns and clearinghouses. The list, available at http://dpcpsi.nih.gov/collaboration, illustrates the range of collaborative extramural and intramural activities but is not intended to be exhaustive.

V. Conclusion

The NIH has a strong commitment to collaborative research among the ICs, as evidenced by joint efforts at all levels. Although many inter-IC collaborative activities are typically not as visible as Common Fund and other high-profile trans-NIH collaborations, Table 1 illustrates that a substantial percentage of the ICs' budgets supports collaborative activities. Because many categories of collaborations are excluded from this report, the obligations presented in Table 1 represent significant underestimates of the actual level of trans-NIH collaborative commitments.

Table 1: IC Collaborative Activity Financial Summary – FY 2013

(000)

Funding IC	Total IC Actual Obligations	Total Collaborative Activities	Percent for Collaborative Activities
FIC	$ 65,627	$ 51,701	78.8%
NCATS	$ 542,598	$ 24,002	4.4%
NCCAM	$ 119,654	$ 36,117	30.2%
NCI	$ 4,668,671	$ 803,070	17.2%
NEI	$ 647,220	$ 54,068	8.4%
NHGRI	$ 469,514	$ 128,872	27.4%
NHLBI	$ 2,877,719	$ 302,617	10.5%
NIA	$ 1,032,195	$ 127,869	12.4%
NIAAA	$ 426,674	$ 80,042	18.8%
NIAID	$ 4,162,837	$ 637,100	15.3%
NIAMS	$ 497,867	$ 58,126	11.7%
NIBIB	$ 317,423	$ 90,574	28.5%
NICHD	$ 1,220,618	$ 266,753	21.9%
NIDA	$ 985,013	$ 199,997	20.3%
NIDCD	$ 387,064	$ 40,626	10.5%
NIDCR	$ 378,650	$ 68,686	18.1%
NIDDK	$ 1,670,467	$ 244,361	14.6%
NIEHS	$ 626,546	$ 80,051	12.8%
NIGMS	$ 2,292,891	$ 233,506	10.2%
NIMH	$ 1,373,495	$ 299,624	21.8%
NIMHD	$ 259,730	$ 17,309	6.7%
NINDS	$ 1,512,543	$ 226,987	15.0%
NINR	$ 135,610	$ 21,096	15.6%
NLM	$ 316,888	$ 18,957	6.0%
NIH	**$ 26,987,514**	**$ 4,112,114***	**15.2%**

*Numbers may not add due to rounding.

An acronym list of NIH ICs can be found at http://grants.nih.gov/grants/acronym_list.htm.