Report of Trans-National Institutes of Health Research Conducted in Fiscal Year 2011

Report to Congress

National Institutes of Health

Department of Health and Human Services

February 2012

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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 an annual report to Congress 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 and one or more other national research institutes or national centers (ICs). This fifth annual report provides the dollar amounts made available by each IC for conducting or supporting research that involves collaboration between that IC and one or more other ICs. This amount is expressed as the funds made available by each IC in FY 2011 for conducting or supporting trans-NIH research. In addition, the U.S. House of Representatives Report 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, conferences, and day-to-day information exchange between programs. Accordingly, this report references examples of activities that fall under these categories.

II. Overview of Collaborations within NIH

The NIH is composed of 27 ICs, each having a distinct mission. However, 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; 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 take 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 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 (RFAs), Requests for Proposals (RFPs), and Program Announcements (PAs). 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. Intramural collaborative research projects also 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. Also excluded are grants funded in response to "Parent Announcements." These general announcements of guidelines for grant mechanisms (e.g., R01) 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 2011 that were included in the previous years' reports. As in the previous reports, grants that provide shared resources have also been excluded from this report unless they are cofunded or funded in response to collaborative program initiatives.

Also excluded from this report are collaborative activities initiated and/or led through or funded by offices within the 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 five DPCPSI offices are as follows:

- Office of Strategic Coordination, which 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 Office of the Director (OD) appropriation are not.

- Office of Behavioral and Social Sciences Research, which (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.

- Office of Research on Women's Health , which (a) advises the NIH Director and staff on matters relating to research on women's health; (b) serves as the focal point for women's health research and the study of sex/gender factors at NIH; (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 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.

- Office of Disease Prevention (ODP), which includes the Office of Dietary Supplements, Office of Medical Applications of Research, and Office of Rare Diseases Research. 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 and on rare diseases.

- Office of AIDS Research (OAR), which has unique authorities to plan, coordinate, evaluate, and submit budget estimates for the NIH AIDS research program. OAR (a) coordinates the scientific, budgetary, legislative, and policy elements of the NIH AIDS research portfolio and sets the trans-NIH scientific priorities; (b) has established comprehensive trans-NIH planning, budgeting, and portfolio analysis processes to identify the highest priority areas of scientific opportunity, enhance collaboration, minimize duplication, and ensure that precious research dollars are invested effectively and efficiently; (c) prepares a Presidential by-pass budget; (d) identifies emerging scientific opportunities and public health challenges that require focused attention and manages and facilitates multi-Institute and trans-Institute activities to address those needs; (e) fosters research by designating funds and supplements to jump-start or pilot program areas; (f) sponsors reviews or evaluations of research program areas; (g) supports a number of initiatives to enhance dissemination of research findings to researchers, physicians, institutions, communities, constituency groups, and patients; 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 is supported through a number of Offices within the Office of the Director, NIH, in addition to voluntary contributions from 16 ICs. 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 13 years ago, 192 collaborative projects have received funding, representing partnerships among multiple ICs and extramural NIH grantees.

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 focuses on the discovery of methods to better intervene and prevent the long-term consequences resulting from traumatic brain injury. 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 noninvasive. 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.

Additional exclusions from this report include: (a) collaborative efforts coordinated through the Center for Information Technology, whose mission is to provide, coordinate, and manage information technology and to advance computational science; (b) IC mandatory contributions to the development and maintenance of shared databases developed by the National Library of Medicine; (c) the Center for Scientific Review, which has a wholly collaborative mission as the portal for NIH grant applications and their review for scientific merit; (d) activities involving NIH collaboration with other agencies within the Department of Health and Human Services (HHS; these types of activities are included in the Report on NIH Collaborations with Other HHS Agencies); (e) collaborations between individual ICs and private sector partners; and (f) collaborations that are not supported through the ICs' budgets. The latter category includes a number of major NIH efforts, such as the National Children's Study, the Special Statutory Funding Program for Type 1 Diabetes Research, and the Superfund program. These are collaborative efforts by design, jointly planned and managed by multiple ICs. However, as with activities supported through the Common Fund, the fact that they are not supported through the IC budgets precludes their inclusion in the totals and percentages that are presented in Table 1.

IV. Percentage of Funds made Available in Fiscal Year 2011 by each National Research Institute or Center for Conducting Trans-NIH Research

Table 1 presents the percentage of FY 2011 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. Section III of this report describes the categories of extramural grants and contracts that are included.

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 2011 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. It is important to note that, because of their missions, three of the ICs listed in Table 1 have no intramural research program to report.

Examples of collaborative activities across ICs that are not fully demonstrated in budgetary data are available at http://dpcpsi.nih.gov/collaboration/index.aspx. The activities are grouped within the following categories: (a) committees, working groups, and task forces; (b) conferences, workshops, and meetings; and (c) educational campaigns and clearinghouses. The list is intended to illustrate the range of collaborative activities, both extramural and intramural, and is not meant to be exhaustive.

V. Conclusion

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 2011

($000)

Funding IC	Total IC Actual Obligations Adjusted	Total Collaborative Activities	Percent for Collaborative Activities
FIC	$ 69,412	$ 61,279	88.3%
NCCAM	126,617	44,040	34.8%
NCI	4,944,968	786,598	15.9%
NCRR	1,257,641	529,488	42.1%
NEI	691,229	73,430	10.6%
NHGRI	497,495	119,212	24.0%
NHLBI	3,045,038	347,175	11.4%
NIA	1,091,928	163,431	15.0%
NIAAA	451,679	78,346	17.3%
NIAID	4,405,266	748,271	17.0%
NIAMS	526,923	82,783	15.7%
NIBIB	312,306	110,104	35.3%
NICHD	1,294,938	374,568	28.9%
NIDA	1,042,858	218,051	20.9%
NIDCD	409,971	46,391	11.3%
NIDCR	401,192	74,315	18.5%
NIDDK	1,768,350	358,325	20.3%
NIEHS	663,728	93,817	14.1%
NIGMS	2,033,510	258,300	12.7%
NIMH	1,453,969	353,515	24.3%
NIMHD	209,200	28,952	13.8%
NINDS	1,601,563	271,216	16.9%
NINR	143,715	31,154	21.7%
NLM	336,660	14,955	4.4%
NIH	**28,780,157**	**5,267,716**	**18.3%**

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