NIH Institute/Center Research Collaborations in Fiscal Years 2019, 2020, and 2021

Report to the Director, National Institutes of Health

December 2022

I. Introduction

As amended by the 21st Century Cures Act (Public Law 114-255), section 402A(c)(2)(B) of the Public Health Service Act (42 U.S.C. 282a(c)(2)(B)) requires that not later than two years after the enactment of the 21st Century Cures Act, the head of each national research institute or national center submit to the NIH Director a report, to be included in the NIH Triennial Report, on the amount made available by the institute or center (IC) with respect to each applicable fiscal year for conducting or supporting research that involves collaboration between the IC and one or more other ICs.

This report – specifically, Tables 1-3 – provides the amounts made available by each IC in fiscal years (FY) 2019, 2020, and 2021 for conducting or supporting research that involved collaboration between that IC and one or more other ICs.

II. Overview of Collaborations within the NIH

Collaborative activity across IC boundaries occurs at every level of NIH operations, 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:

- development of a concept, initiative, or plan;
- funding;
- conduct of the research in intramural laboratories;
- management and administration of the project; and
- assessment of results.

Inter-IC collaborations represent unique opportunities to build on the scientific expertise, sophisticated technologies, infrastructure, and knowledge base of individual ICs and to apply this wealth of information to addressing a wide range of diseases and health conditions. These collaborations provide multi-disciplinary and multi-faceted approaches to critical scientific questions and lead to special initiatives and innovative programs for the discovery, development, and testing of strategies to diagnose, prevent, and treat a wide range of health conditions. Inter-IC collaborations also permit the leveraging of crucial resources to ensure precious research dollars are used effectively and efficiently in improving the public health of all Americans.

III. Scope of the Report

This report pertains to the research collaborations conducted or supported by 24 of the 27 NIH ICs. For reasons discussed below, the Clinical Center, the Center for Information Technology, and the Center for Scientific Review are not included in this report.

Inclusions:

For the purposes of this report, an inter-IC 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 co-funded 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 (i.e., formal participation by multiple ICs at the outset of an FOA's development and issuance). FOAs of this type include Requests for Applications, Requests for Proposals, and Program Announcements.

The NIH Intramural Research Program is also highly collaborative. In addition to collaborating on research, ICs' intramural programs jointly fund specific shared resources (e.g., imaging technologies and instrumentation) to minimize duplicative equipment and to conserve costs. Intramural projects that meet the definition of inter-IC research collaborations are included in this report.

Exclusions:

"Parent Announcements" – general announcements of guidelines for grant mechanisms (e.g., research project, or R01, grants) and do not address scientific areas – are excluded as collaborative FOAs. However, ICs that provide shared resources for grants funded under Parent Announcements (i.e., they are co-funded) are included in this report.

This report also excludes collaborative activities initiated and/or led or funded by entities within the Office of the Director (OD), such as the Division of Program Coordination, Planning, and Strategic Initiatives (DPCPSI). This is consistent with this report's definition of an inter-IC research collaboration and with NIH's interpretation of the legislative language.

The amounts of research collaborations presented in Tables 1-3 exclude collaborative efforts coordinated through the NIH Clinical Center because its budget is funded through contributions from the ICs' intramural budgets. However, it is important to note that the Clinical Center coordinates a broad range of NIH-wide activities to facilitate interaction and collaborations among clinical researchers and supports the rapid translation of scientific findings into new approaches for diagnosing, treating, and preventing disease.

The collaboration-related budget figures also exclude the following: (1) collaborative efforts coordinated through the Center for Information Technology, which provides the NIH community with a variety of information technology services to support mission-critical research and administration; (2) non-research collaborations that support NIH-wide research initiatives, such as the development and maintenance of biomedical data and information services provided 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) collaborations conducted or supported by individual ICs and other agencies within HHS (these types of activities are included in the Report on NIH Collaborations with Other HHS Agencies, available at https://report.nih.gov/crs/); (5) collaborative activities between individual

ICs and private sector partners; (6) certain awards made using reimbursable dollars; and (7) the Special Statutory Funding Program for Type 1 Diabetes Research and the Superfund Program.

IV. Percentage of Funds Made Available in Fiscal Years 2019, 2020, and 2021 by Each Research Institute or Center for Collaborative Research

Table 1 presents the amount of FY 2019 funds made available by each research IC for collaborative research. Tables 2 and 3 present the corresponding information for FY 2020 and FY 2021. The IC amounts presented in these tables represent the sum of collaborative activities in three areas: extramural grants, extramural contracts, and intramural research projects. As with extramural projects, reporting on intramural projects is limited to formal collaborations between two or more ICs. The total annual budget for an intramural research collaboration is credited wholly to the lead IC because the NIH Intramural Database does not partition effort or budget by individual ICs.

V. Summary

Inter-IC collaborations provide crucial support for (1) projects and programs in a wide range of biomedical, behavioral, and social science research; (2) clinical trials evaluating strategies to prevent and treat diseases; (3) observational cohort studies involving individuals from diverse populations; and (4) training programs designed to mentor the next generation of basic and clinical biomedical researchers. Tables 1-3 illustrate that a substantial percentage of the ICs' budgets supports collaborative research. However, as several categories are excluded from this report, these budget figures represent only a portion of the overall NIH-wide collaborative efforts.

Table 1: IC Collaborative Activity Financial Summary – FY 2019

Dollars in Thousands

Funding IC	Total IC Actual Obligations*	Total Collaborative Activities**	Percent for Collaborative Activities
FIC	$ 77,894	$ 54,078	69%
NCATS	$ 847,430	$ 118,843	14%
NCCIH	$ 145,933	$ 31,129	21%
NCI	$ 5,993,600	$ 974,573	16%
NEI	$ 793,767	$ 86,970	11%
NHGRI	$ 575,361	$ 204,615	36%
NHLBI	$ 3,482,237	$ 303,283	9%
NIA	$ 3,080,043	$ 608,618	20%
NIAAA	$ 525,282	$ 109,910	21%
NIAID	$ 5,567,138	$ 886,879	16%
NIAMS	$ 602,907	$ 76,952	13%
NIBIB	$ 388,079	$ 115,069	30%
NICHD	$ 1,508,603	$ 318,434	21%
NIDA	$ 1,621,334	$ 298,465	18%
NIDCD	$ 472,988	$ 54,064	11%
NIDCR	$ 460,613	$ 79,632	17%
NIDDK	$ 2,099,265	$ 251,892	12%
NIEHS	$ 850,793	$ 109,101	13%
NIGMS	$ 2,821,806	$ 131,833	5%
NIMH	$ 1,869,653	$ 515,919	28%
NIMHD	$ 313,195	$ 96,601	31%
NINDS	$ 2,413,897	$ 814,177	34%
NINR	$ 163,165	$ 43,077	26%
NLM***	$ 441,645	$ 25,634	6%
TOTAL**	**$ 37,116,628**	**$ 6,309,751**	**17%**

*Data were extracted from https://officeofbudget.od.nih.gov/pdfs/FY22/spending-hist/Actual%20Obligations%20By%20IC%20FY%202000%20-%20FY%202021%20(V).pdf. Total obligation for NIDDK includes mandatory Type 1 Diabetes funding. Total obligation for NIEHS includes the Superfund Program.

**Data were extracted from the NIH's Electronic Research Administration (eRA) Manual Categorization System, after extramural research grants and contracts data and intramural research project data had been finalized by ICs.

***The majority of NLM's annual budget supports a range of biomedical information services that fall outside the definition of inter-IC research collaboration used in this report.

****Numbers may not add up due to rounding. Sum of "Total IC Actual Obligations" does not represent total NIH obligations.

A list of IC acronyms can be found at http://grants.nih.gov/grants/acronym_list.htm.

Table 2: IC Collaborative Activity Financial Summary – FY 2020

Dollars in Thousands

Funding IC	Total IC Actual Obligations*	Total Collaborative Activities**	Percent for Collaborative Activities
FIC	$ 80,811	$ 56,301	70%
NCATS	$ 832,856	$ 111,189	13%
NCCIH	$ 151,871	$ 34,930	23%
NCI	$ 6,418,988	$ 1,104,209	17%
NEI	$ 823,310	$ 90,471	11%
NHGRI	$ 604,083	$ 202,324	33%
NHLBI	$ 3,624,863	$ 348,373	10%
NIA	$ 3,545,814	$ 884,714	25%
NIAAA	$ 546,691	$ 116,874	21%
NIAID	$ 5,880,084	$ 992,858	17%
NIAMS	$ 624,832	$ 77,857	12%
NIBIB	$ 404,616	$ 167,726	41%
NICHD	$ 1,556,841	$ 335,200	22%
NIDA	$ 1,457,683	$ 313,851	22%
NIDCD	$ 490,687	$ 59,844	12%
NIDCR	$ 477,644	$ 92,875	19%
NIDDK	$ 2,220,977	$ 238,241	11%
NIEHS	$ 883,452	$ 125,750	14%
NIGMS	$ 2,937,142	$ 155,207	5%
NIMH	$ 2,044,852	$ 551,157	27%
NIMHD	$ 335,799	$ 113,050	34%
NINDS	$ 2,443,099	$ 809,821	33%
NINR	$ 172,342	$ 50,489	29%
NLM***	$ 456,584	$ 27,177	6%
TOTAL**	**$ 39,015,921**	**$ 7,060,488**	**18%**

*Data were extracted from https://officeofbudget.od.nih.gov/pdfs/FY22/spending-hist/Actual%20Obligations%20By%20IC%20FY%202000%20-%20FY%202021%20(V).pdf. Total obligation for NIDDK includes mandatory Type 1 Diabetes funding. Total obligation for NIEHS includes the Superfund Program.

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Table 3: IC Collaborative Activity Financial Summary – FY 2021

Dollars in Thousands

Funding IC	Total IC Actual Obligations*	Total Collaborative Activities**	Percent for Collaborative Activities
FIC	$ 83,752	$ 58,553	70%
NCATS	$ 852,792	$ 125,530	15%
NCCIH	$ 153,601	$ 39,995	26%
NCI	$ 6,558,695	$ 763,162	12%
NEI	$ 832,967	$ 94,661	11%
NHGRI	$ 614,131	$ 205,667	33%
NHLBI	$ 3,653,569	$ 369,728	10%
NIA	$ 3,888,190	$ 1,115,995	29%
NIAAA	$ 553,201	$ 106,978	19%
NIAID	$ 6,049,416	$ 1,071,846	18%
NIAMS	$ 632,353	$ 85,763	14%
NIBIB	$ 409,461	$ 147,234	36%
NICHD	$ 1,588,125	$ 347,873	22%
NIDA	$ 1,475,805	$ 340,983	23%
NIDCD	$ 496,574	$ 63,276	13%
NIDCR	$ 483,360	$ 91,654	19%
NIDDK	$ 2,229,147	$ 259,530	12%
NIEHS	$ 893,521	$ 128,580	14%
NIGMS	$ 2,986,188	$ 194,592	7%
NIMH	$ 2,100,178	$ 614,214	29%
NIMHD	$ 389,453	$ 130,384	33%
NINDS	$ 2,490,566	$ 831,928	33%
NINR	$ 174,407	$ 57,110	33%
NLM***	$ 460,083	$ 41,810	9%
TOTAL**	**$ 40,049,535**	**$ 7,287,047**	**18%**

*Data were extracted from https://officeofbudget.od.nih.gov/pdfs/FY22/spending-hist/Actual%20Obligations%20By%20IC%20FY%202000%20-%20FY%202021%20(V).pdf. Total obligation for NIDDK includes mandatory Type 1 Diabetes funding. Total obligation for NIEHS includes the Superfund Program.

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