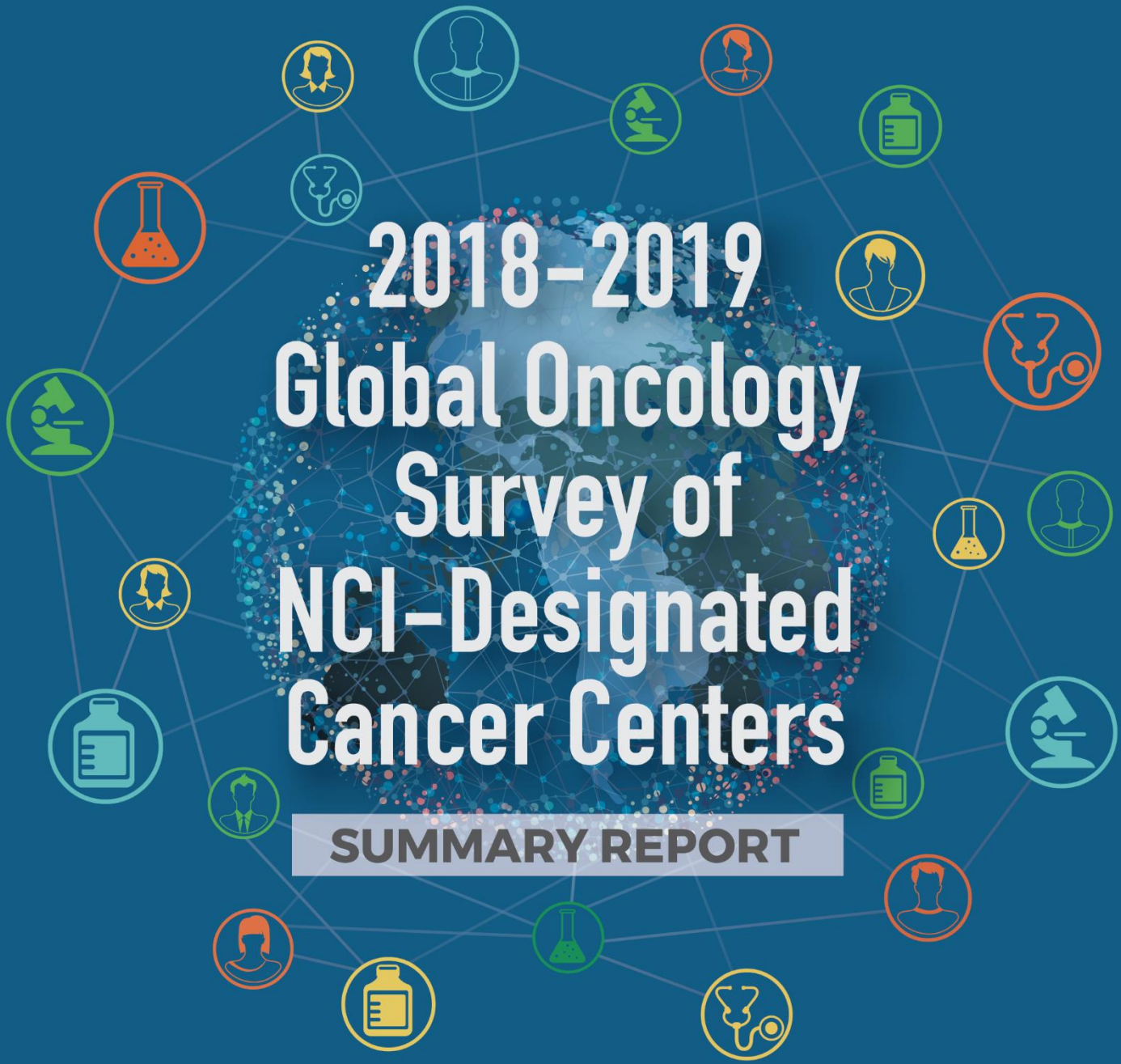
NIH NATIONAL CANCER INSTITUTE



2018–2019 Global Oncology Survey of NCI-Designated Cancer Centers

SUMMARY REPORT

In partnership with

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Acknowledgements

The National Cancer Institute Center for Global Health would like to extend a special acknowledgement to the American Society of Clinical Oncology for partnering on the 2018-2019 Global Oncology Survey, particularly in the development of the tool to survey the global oncology programs of NCI-Designated Cancer Centers. We would also like to thank the NCI Office of Cancer Centers, particularly Drs. Henry Ciolino and Hasnaa Shafik, for their support and guidance throughout the survey process. We extend a special thank you to the NCI-Designated Cancer Centers and the exemplary staff therein, for their time and effort to respond to the survey, and for their dedication to the field of global oncology.

Abbreviations

ASCO	American Society of Clinical Oncology
CSO Code	Common Scientific Outline Code
FY2018	Fiscal Year 2018
LMICs	Low- and middle-income countries
NCI	National Cancer Institute
NCI/CGH	National Cancer Institute Center for Global Health
NDCC	NCI-Designated Cancer Center
NIH	National Institutes of Health

Contact Information

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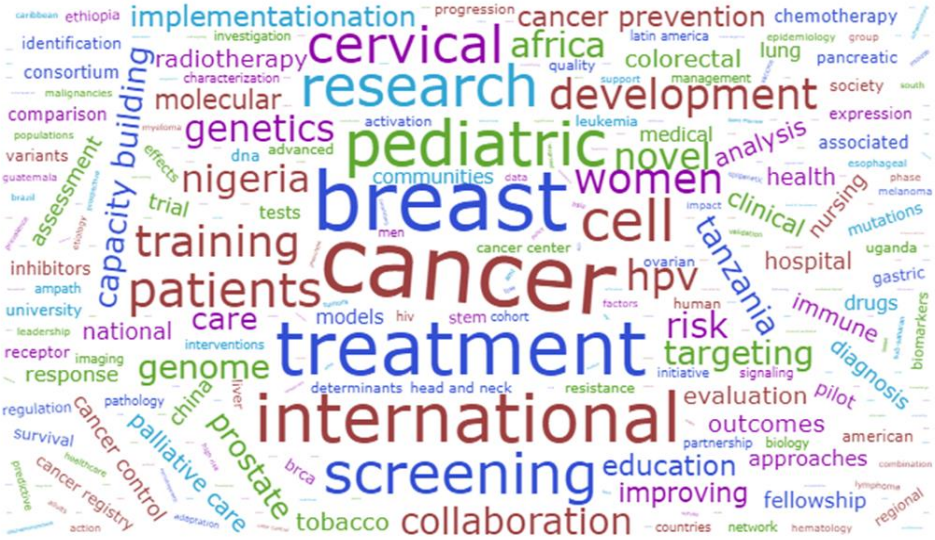

Word Cloud of Non-NIH-Funded Global Oncology Project Titles from the 2018-2019 Global Oncology Survey

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Letter from the Interim Director of the National Cancer Institute Center for Global Health

Dear Colleagues:

It is my great pleasure to share with you the ***2018-2019 Global Oncology Survey of NCI-Designated Cancer Centers Summary Report***. This report is a collaborative effort between the National Cancer Institute (NCI), the American Society of Clinical Oncology (ASCO), and the 70 NCI-Designated Cancer Centers across the US.

It has been a remarkable process to learn about the dedication of NCI-Designated Cancer Centers to the field of global oncology, as demonstrated by the diverse and rich programs and projects in this report. Most notably, while NCI is the largest funder of cancer research, the work described in this report is supported from sources outside of NCI, including from the NCI-Designated Cancer Centers themselves. We find it important to share not only the data on NCI-funded grants with international collaborators, but also the breadth of non-NIH-funded global oncology activities. By doing so, the report helps provide a more holistic view of Cancer Centers commitment to global oncology.

We are grateful to the NCI-Designated Cancer Centers for their willingness to share their non-NIH-funded portfolio of global oncology work happening at their Cancer Centers. The work described includes collaborators in 110 countries around the world. As you read through this report and the accompanying appendices, you will find investments in research and training that touch every point along the cancer control continuum. Substantive efforts are devoted toward the training and capacity building of both faculty and foreign collaborators.

This report is intended to facilitate both information sharing and collaboration. As stated in the section "Ways to Use this Report as an Information Gathering Tool," we encourage NCI-Designated Cancer Centers to reach out to NCI to connect with colleagues working on similar research topics and in similar global settings. We also hope that this report will serve as a catalyst for the global oncology community to discuss ways to prioritize and coordinate, where appropriate, in global oncology research and training. To that end, we encourage you and your colleagues to join the discussion at the 8th Global Cancer Research Symposium, April 17, 2020, in Washington, DC, the satellite meeting in advance of the 2020 Consortium of Universities for Global Health Conference (April 18-20, 2020). For more information, contact Kalina Duncan at kalina.duncan@nih.gov.

Best Regards,

Robert T. Croyle, PhD
Director, Division of Cancer Control and Population Sciences
Interim Director, Center for Global Health
National Cancer Institute

Glossary of Terms

Overall Definitions

Global Oncology: For the purpose of this report, global oncology is the broad category for international cancer research and training activities conducted by an NCI-Designated Cancer Center. There is currently no formal definition in the literature that is available.

Global Oncology Program: Global oncology activities that happen at NDCCs, such as research, training, and faculty engagement, led under a formal or designated program.

Global Oncology Project: A specific global oncology activity led by an NDCC with an international collaborator. An NDCC could have global oncology projects without a formal global oncology program.

Collaborator: For the purposes of this report, analyses that present information on project collaborator countries include countries listed in the "collaborator" field (all data were included) and "geographic focus areas" (specific countries listed were included) field of the survey.

HIC: high-income country

LMIC: low- and middle-income country

Program and Project Focus Area Definitions

Capacity Building/Training: activities to strengthen capacity in a technical, human resource, or other relevant skill area

Clinical Care/Cancer Care Delivery: providing clinical care to patients outside the U.S.

Clinical Trials: involving clinical and population science research

Collaboration/Partnership: building or strengthening collaborations or partnerships with specific countries, individuals, or institutions to support global oncology

Education: providing academic global oncology education (to U.S. or foreign students)

Implementation: implementing, or evaluating the implementation, of a global oncology initiative (e.g., a vaccine program, drug access program, screening initiative, etc.)

LMIC Activity: working with or in low- and middle-income countries

Network or Working Group: involving a cancer network or working group

Registries: involving an aspect of a cancer registry/surveillance

Pathology: involving an aspect of cancer pathology

Screening: involving an aspect of cancer screening

Training: see Capacity Building/Training above

Project Funding Source Definitions

Governmental: U.S. governmental funding, non-NIH

Industry: private sector or private sector foundation funding (e.g., Bristol-Myers Squibb Foundation)

Institutional: internal funding from within the Cancer Center (e.g., administrative funding support)

International: funding from an organization outside of the U.S. (includes non-profit, donor funding, governmental, industry, etc.)

Investigator Funds: funding from investigator's internal budget (considered a subset of Institutional funds)

Mixed Funding Sources: funding from more than one of the sources listed here

Non-Profit: funding from an organization registered as a 501c3 in the U.S.

Not Provided: Funding source not provided

Previously NIH-funded: previously NIH-funded, and could now be funded by institutional or other funds, or could be unfunded

Private Contract: supported by an unspecified private contract

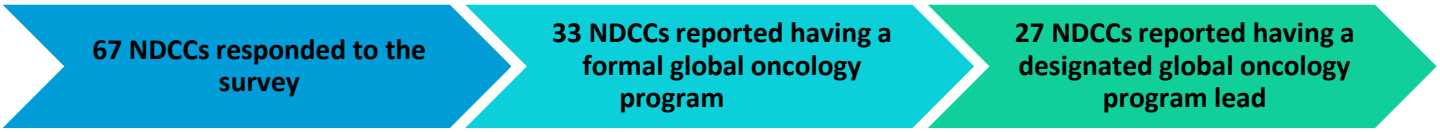
Unfunded: activity is either unfunded, or seeking funding (e.g., partnership discussions)

Executive Summary

NIH funds approximately 800 research programs with international collaborators annually. These data are available to the general public through NIH RePORTER, and can be analyzed to identify research gaps and potential collaborations, and conduct environmental scans on the types of cancer research being done with international collaborators. NCI-Designated Cancer Centers also engage in research with international collaborators that is not funded by the NIH. Until now, no systematic collection of the non-NIH-funded research with international collaborators has been conducted.

The 2018-2019 Global Oncology Survey of NCI-Designated Cancer Centers (NDCCs) was designed collaboratively by NCI/CGH and the ASCO Academic Global Oncology Task Force. The survey had three key objectives: (1) describe the non-NIH-funded global oncology activities led by NDCCs in a centralized resource; (2) identify areas where NDCCs are working to promote research partnerships and coordination, as well as potential areas for increased collaboration; (3) use the results to convene and coordinate NDCCs around global oncology opportunities and activities.

Global Oncology Programs at NDCCs



As shown in the figure above, a total of 67 out of 70 NDCCs responded to the survey, with 33 NDCCs (47%) reporting having a formal global oncology program, and 27 of these reported having a designated program leader.

- Top program focus areas based on program descriptions (programs could be coded to more than one focus area) included research (24 programs); capacity building and training; and low- and middle-income country (LMIC) activity (15 programs each).
- Thirteen institutions with a global oncology program reported having 1-10 faculty participating in the global oncology program; 19 institutions with a global oncology program reported having 11 or more faculty participating in the global oncology program.
- The majority of NDCCs with global oncology programs (22 of 33 NDCCs) reported receiving both external funding support and internal administrative funding for global oncology activities.
- Twenty-seven of 33 NDCCs reported providing some level of global oncology training to their trainees.

Global Oncology Projects at NDCCs

As shown in the figure above, a total of 61 NDCCs (87%) reported one or more non-NIH-funded global oncology projects, with a total of 613 non-NIH-funded projects reported overall.

- Approximately 77% of projects were coded to research, and approximately 32% of projects were coded to capacity building or training (projects could be coded to more than one focus area).
- An estimated one-third of NDCC global oncology projects were coded to Common Scientific Outline (CSO) codes for biology; early detection, diagnosis and prognosis; or treatment.
- The top three cancer sites studied were reported to be non-site specific, stomach, and cervical cancer.
- Non-NIH-funded NDCC global oncology projects included collaborators from 110 countries, and 17 of the top 30 collaborator countries were LMICs.
- The most frequently reported source of project funding was institutional funding (within the NDCC), followed by funding obtained from non-profit organizations.

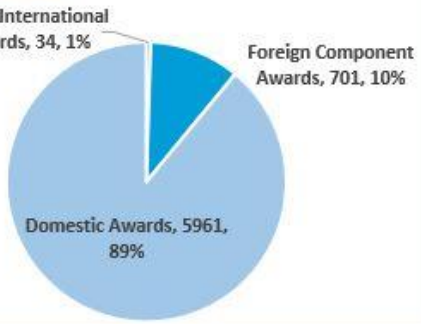
The results and conclusions of this survey demonstrate a robust level of global oncology activities occurring at NDCCs and led by NDCCs with international collaborators.

Background

NCI-Funded International Research Portfolio

The National Cancer Institute's (NCI) extramural research portfolio includes domestic projects and projects with an international principal investigator or international collaborator. In fiscal year 2018 (FY2018), international projects with one or more foreign collaborators or principal investigators made up approximately 11.0% (735 projects) of the overall NCI FY2018 extramural portfolio (approximately 6,695 base projects). The majority of the FY2018 grants with foreign collaborators were led by NDCCs or affiliated institutions (approximately 560 projects). Additionally, there were 34 direct international awards to foreign institutions (Fig. 1).

Figure 1. NCI FY2018 International Research Portfolio (Extramural Grants)



This figure shows the number of base projects* in the NCI Extramural Portfolio, broken down by type of award.

***What is a base project?** A base project is a parent grant. Counting base projects prevents double-counting grants by excluding any supplements, sub-projects, or continuing, non-competitively renewed grants related to the parent grant.

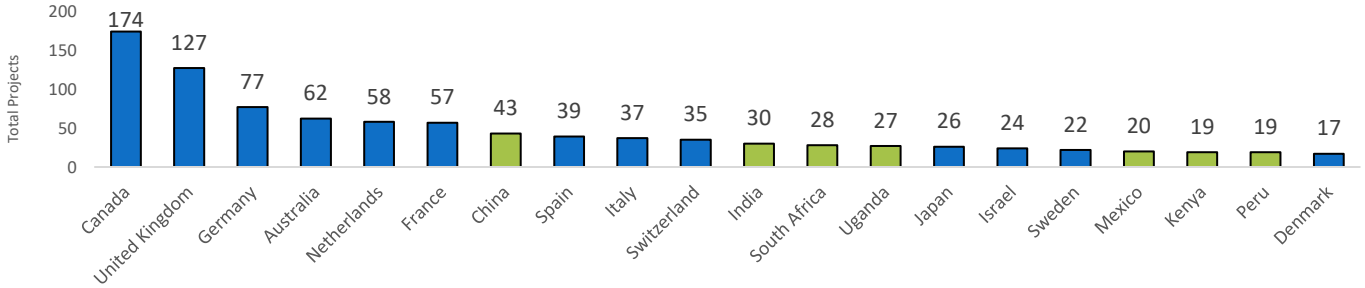
Direct International Awards

There were 34 projects awarded directly to foreign institutions in 14 countries. Five of the fourteen countries (six awards) were LMICs: Nigeria (2), India (1), Peru (1), South Africa (1), and Zambia (1). The remaining countries with direct awards included: Canada (11), France (4), Argentina (3), Australia (3), Sweden (2), Switzerland (2), Germany (1), Netherlands (1), and United Kingdom (1).

Foreign Component Awards

There were approximately 701 base projects (defined as a unique grant, excluding supplements or subprojects also awarded in the same fiscal year) funded by NCI in FY2018 with a foreign collaborator, as identified in NIH's Foreign Award and Component Tracking System (FACTS) (Fig. 2). Foreign collaborators came from 103 countries. Sixty-six of the countries are LMICs, accounting for approximately 29% of base projects.

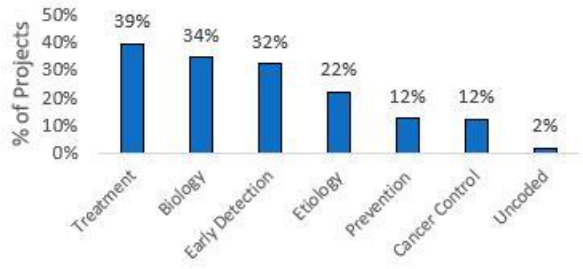
Figure 2. FY2018 NCI Foreign Component Awards (N=701) by Top 20 Collaborator Countries (LMICs shown in green)



Common Scientific Outline (CSO) Codes

NCI-funded FY2018 extramural international awards were most frequently coded to treatment; biology; and early detection, diagnosis, and prognosis CSO codes (Fig. 3).

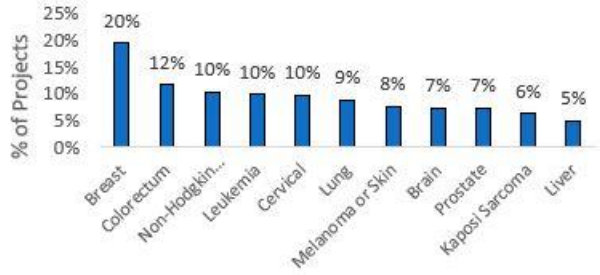
Figure 3. FY2018 NCI Extramural International Awards by CSO Codes



Cancer Sites

NCI-funded FY2018 extramural international awards were most frequently coded to breast and colorectum cancer sites (Fig. 4).

Figure 4. FY2018 NCI Extramural International Awards by Cancer Site



Introduction to the 2018-2019 Global Oncology Survey

In addition to its support of cancer research in the U.S., NCI conducts global cancer research to advance knowledge of cancer, to drive cancer breakthroughs through international collaborations, to improve health outcomes in the United States by learning from the scientific experiences of international partners, and to leverage data and unique experiences across communities and countries. Within NCI, the NCI Center for Global Health (NCI/CGH) aims to create sustainable international partnerships, to support programs that address global gaps in research and scientific training, and to disseminate information and best practices that drive improvements in cancer research and cancer control. A key part of NCI/CGH's mission is to support the NDCCs in their global oncology activities, and one way this is done is by gathering and making available information about these activities for knowledge-sharing and collaboration purposes.

While NIH has a public database (NIH RePORTER) for all NCI- and NIH-funded research with international collaborators, as described above, there is no central database for the non-NIH-funded global oncology activities of NDCCs or academic Cancer Centers generally. To complement the NIH-funded global cancer research data, and to provide a more holistic view of the ways that NDCCs support global oncology activities, NCI/CGH periodically conducts a survey of all NDCCs to map non-NIH-funded cancer research and training projects with international collaborators. This survey currently focuses on NDCCs only, in line with NCI's and NCI/CGH's mission to provide support to the NDCCs to advance cancer research.

Past surveys were conducted in 2012 and 2014 via telephone interviews and email correspondence, and data were used to generate summary reports for use by NCI and the NDCCs. NCI/CGH utilized data from past surveys to inform funding opportunities (e.g., additional supplemental funding was issued in fiscal years 2014 and 2015 to NDCCs to conduct global cancer research projects [see PAR 15-155]) and to make relevant connections between NDCCs and regional policy implementers in low- and middle-income countries (LMICs). For example, NCI utilized the 2014 data, which showed several NDCCs conducting research in Kenya, to link U.S.-based researchers with the Kenyan Ministry of Health in response to a request for national cancer control planning technical assistance. This led to a multi-stakeholder meeting and subsequent collaboration on cancer research and control efforts.

For the 2018-2019 survey, in addition to collecting information about global cancer research and training projects with international collaborators, NCI/CGH collaborated with the American Society of Clinical Oncology (ASCO) to develop a new survey module focused on global oncology programs and training opportunities occurring at NDCCs. Questionnaire design for this module was led by members of ASCO's Academic Global Oncology Task Force, an ASCO Board-appointed body of ASCO members with expertise in global oncology asked to recommend ways that ASCO can support global oncology as an academic discipline. To inform their deliberations, the task force members aimed to gather data on the

current state of global oncology research and training at NDCCs. This new module is the first time the NDCCs have been asked using a standardized method about the existence and offerings of their global oncology programs.

The 2018-2019 survey had **three key objectives**:

1. Describe the non-NIH-funded global oncology activities led by NDCCs in a centralized resource;

2. Identify areas where NDCCs are working in order to promote research partnerships and coordination, as well as potential areas for increased collaboration;

3. Use the results to convene and coordinate NDCCs around global oncology opportunities and activities.

Methodology

Survey Tools

The 2018-2019 Global Oncology Survey of NCI-Designated Cancer Centers (NDCCs) was designed collaboratively by NCI/CGH and the ASCO Academic Global Oncology Task Force. Questions on the survey were divided into two parts:

1) NCI-Designated Cancer Center Program-level survey, consisting of 23 questions: focused on global oncology programs at the NDCCs, including level of faculty engagement in global oncology, sources of funding for global oncology activities, level of trainee involvement and career interest in the field of global oncology;
2) NCI-Designated Cancer Center Project-level survey, consisting of 27 questions: focused on non-NIH-funded global oncology projects led by the NDCCs with an international collaborator.

The NDCCs were given two options for submitting their responses to the global oncology survey: via an online Google Forms survey, or via an Excel spreadsheet that mirrored the fields in the online survey. Twenty-eight NDCCs used the online survey submission form, 25 used the Excel spreadsheet, and six NDCCs used both methods to submit data. Other methods of data submission included PDF (1) and email (7). The survey tools are available in Appendices III and IV.

Data Collection

The survey was sent out via email in a staggered approach to allow time for NCI/CGH staff to answer respondents' questions. For each NDCC, the survey was sent to the NDCC Director, Administrator, and any relevant global oncology contact persons identified. Contact information for NDCCs was collected from the NCI Office of Cancer Centers, ASCO, and from NCI/CGH staff, and was used to identify relevant persons at NDCCs able to respond to questions about their NDCC's global oncology activities. The survey was piloted to seven NDCCs in early 2018, and minor adjustments were subsequently made to clarify intent of the survey questions. The revised survey was sent out to 23 NDCCs in March 2018, and to the remaining 40 NDCCs in May 2018. Periodic reminders were sent out via email. Twenty-five NDCCs (36%) held one-on-one calls with NCI/CGH staff. The initial period for data submission was closed on October 25, 2018 (see 'Survey Review and Comment Period' below for more information).

Data Cleaning and Analysis

NCI/CGH staff cleaned the data and applied standardized codes to the open text responses to capture common thematic areas. Additional examples of data cleaning and standardization included standardizing focus area information, geolocation information, institution names, collaborator organization names, and cancer site names. Codes for project type, Common Scientific Outline (CSO) codes, cancer site, and project funding source were reviewed by three data analysts and coded to capture common thematic areas that appeared across the dataset. Data were analyzed in Excel and SAS analytics software.

Survey Review and Comment Period

In March 2019, a draft version of the report was circulated to all 70 NDCCs for review and comment. 41 NDCCs responded to the request for comment; four NDCCs submitted new projects for the first time (did not previously submit projects in the original survey submission); 11 NDCCs submitted additional projects or updates to project information; and three NDCCs changed their global oncology program status from *no* to *yes*. Additionally, five NDCCs submitted changes to their Cancer Center name, four NDCCs submitted contact information or text edits to the report, and 16 NDCCs responded to the request for comment with no changes.

Survey Response Rate

As of the survey close date on October 25, 2018, 65 of 70 NDCCs (93% response rate) had responded. After the Spring 2019 report review period, 67 NDCCs (96% response rate) had responded. This response rate was higher than past years and may be attributable to the use of a standardized online form for data collection and the periodic follow-up correspondence, in addition to the likely increase in global oncology activities led by NDCCs. All data presented in this report are based on the 67 responding institutions.

Scope and Limitations

Data Completeness and Accuracy

Data presented in this report are based on responses from the 67 NDCCs that responded to the survey prior to October 25, 2018, and/or submitted additional information during the Spring 2019 report review period. There are several factors which may impact the data accuracy and completeness of this report. Among them:

- Data for the survey were self-reported by each NDCC, and completeness of data was at the discretion of responding institutions. For example, in the projects portion of the survey, some NDCCs did not report all data fields, such as project titles or international collaborators.
- Data may vary depending on who within the institution supplied or collected the information (see Annex I for breakdown of respondent designations).
- Several NDCCs reported that these data were not held centrally in the NDCC and were difficult to amalgamate.
- NDCCs varied in the types of projects they reported. For example, some NDCCs reported unfunded work, or work in progress, while other NDCCs may have had unfunded projects, but may not have reported on them in this survey. Some NDCCs may have reported broad global oncology initiatives that could have encompassed many smaller activities, while other NDCCs may have reported projects at a more granular level. Some NDCCs reported NIH-funded global oncology projects, and these were not included in the report.
- For NDCCs affiliated with an academic institution, some of the global oncology activities reported may be happening at the academic institution and not at the NDCC.

For these reasons, it is very likely that the total number of non-NIH-funded projects reported by NDCCs is underreported, and that more global oncology activities exist at NDCCs.

Definitions of Global Oncology

The term global oncology was not systematically defined in the survey, as a current widely accepted definition of global oncology does not exist. The term global oncology program was also not defined. NDCCs could self-identify and define their programs to inform a baseline measurement of the number of NDCCs reporting having a global oncology program. A resulting limitation of that approach, however, is that in the global oncology program survey module, NDCCs may have had different understandings of the definition of "global oncology program," which may have affected the response rate. For instance, if a responding institution defined "program" as a formal Research Program, this may affect the response. The survey asked, "Do you have a global oncology program at your center?"; if respondents marked "no," then the program portion of the survey was terminated. Some NDCCs who responded "no" to the global oncology program question may have faculty and trainee engagement in global oncology activities (the subject of subsequent questions in the program survey), and these activities are not reflected in this report.

Deduplication of Projects

NDCCs were asked to indicate whether recorded projects received funding from NIH. All projects that marked "no NIH funding" were included in this analysis, but projects were not further deduplicated against NIH data to confirm this selection was accurate. Projects were not deduplicated across NDCCs, and therefore it is possible that multiple NDCCs working on the same or similar project reported these projects individually. As a result, these projects may have been counted more than once in the analysis. A subset of projects (61 projects – one from each NDCC, or 10%) were scanned by reviewers for duplicates within the NIH-funded portfolio, revealing minimal overlap. Of the 61 projects reviewed, two (3.3%) had received funding from NIH, 55 (89.7%) had never received funding from NIH, and four (6.5%) projects could not be determined with the data available.

Survey Results

This section provides analysis of the survey results synthesized into several major thematic areas. For a more detailed breakdown of survey results by NDCC, refer to Annex II. Where possible, the self-reported results of the 2018-2019 Global Oncology Survey are compared to the official NCI-funded international research grant data from FY2018 to examine overall trends in global cancer research.

Survey Results At-A-Glance

A total of 67 out of 70 NDCCs responded to the survey, with 33 NDCCs (47%) reporting having a formal global oncology program, and 27 of these reporting having a designated program lead. Top program focus areas based on program descriptions (programs could be coded to more than one focus area) included research (24 programs); capacity building and training (15 programs); and LMIC activity (15 programs). Thirteen institutions with a global oncology program reported having 1-10 faculty engaged in global oncology. Nineteen institutions with a global oncology program reported having 11 or more faculty engaged in global oncology. The majority of NDCCs with global oncology programs (22 of 33 NDCCs) reported receiving both external funding support and internal administrative funding for global oncology activities. Twenty-seven of 33 NDCCs reported providing some level of global oncology training to their trainees.

A total of 61 NDCCs (87%) reported one or more non-NIH-funded global oncology projects, with a total of 613 non-NIH-funded projects being reported overall. Approximately 77% of projects were coded to research, and approximately 32% of projects were coded to capacity building or training. An estimated one-third of NDCC global oncology projects were coded to Common Scientific Outline (CSO) codes for biology; early detection, diagnosis and prognosis; or treatment. The top three cancer sites studied were reported to be non-site specific, stomach, and cervical cancer. Non-NIH-funded NDCC global oncology projects included collaborators from 110 countries, and 17 of the top 30 collaborator countries are LMICs. Nearly 60% of projects included collaborators from LMICs. The most frequently reported source of project funding was institutional funding (within the NDCC), followed by funding obtained from non-profit organizations.

NCI-Designated Cancer Center Responses

A total of 47% of NDCCs (33) reported having a formal global oncology program (as defined by the respondent) at their institution, and 87% of NDCCs (61) reported one or more non-NIH-funded global oncology projects at their NDCC (Fig. 5).

Figure 5. Summary of NDCC survey responses

Response	NDCC has a formal global oncology program?	NDCC has non-NIH-funded global oncology projects?
Yes	**33 (47%)**	**61 (87%)**
No	34 (49%)	6 (9%)
No response as of April 25, 2019	3 (4%)	3 (4%)

The individual survey responses for each of the 70 NDCCs are listed in the table below (Fig. 6). Institutions shaded in light blue reported having a global oncology program.

Figure 6. NDCC survey responses in detail

Name of NDCC	Do they have a global oncology program?	Non-NIH-funded Cancer Center projects?	Name of NDCC	Do they have a global oncology program?	Non-NIH-funded Cancer Center projects?
Abramson Cancer Center	yes	yes	OHSU Knight Cancer Institute	no	yes
Albert Einstein Cancer Center	no	yes	O'Neal Comprehensive Cancer Center at UAB	yes	yes
Alvin J. Siteman Cancer Center	yes	yes	Purdue University Center for Cancer Research	no	yes
Arizona Cancer Center	no	no	Robert H. Lurie Comprehensive Cancer Center	yes	no
Barbara Ann Karmanos Cancer Center	no	yes	Roswell Park Cancer Institute	yes	yes
Case Western Reserve University	no	yes	Rutgers Cancer Institute of New Jersey	yes	yes
Chao Family Comprehensive Cancer Center	no	no	Salk Institute Cancer Center	-	-
City of Hope Comprehensive Cancer Center	yes	yes	Sanford Burnham Prebys Medical Discovery Institute	no	yes
Cold Spring Harbor Laboratory	no	yes	Sidney Kimmel Cancer Center at Thomas Jefferson University	no	yes
Dan L. Duncan Comprehensive Cancer Center	yes	yes	Sidney Kimmel Comprehensive Cancer Center	no	yes
Dana-Farber/Harvard Cancer Institute	yes	yes	St. Jude Children's Research Hospital	yes	yes
Dartmouth-Hitchock Norris Cotton Comp. Cancer Center	yes	yes	Stanford Cancer Institute	yes	yes
David H. Koch Institute for Integrative Cancer Research	no	yes	Stephenson Cancer Center	yes	yes
Duke Cancer Institute	yes	yes	The Jackson Laboratory Cancer Center	-	-
Fox Chase Cancer Center	yes	yes	The Ohio State University Comprehensive Cancer Center - The James	no	yes
Fred and Pamela Buffett Cancer Center	yes	yes	The University of Virgina Cancer Center	no	yes
Fred Hutchinson/UW Cancer Consortium	yes	yes	The Wistar Institute Cancer Center	no	yes
Georgetown Lombardi Comprehensive Cancer Center	no	yes	Tisch Cancer Institute	no	yes
H. Lee Moffitt Cancer Center	yes	yes	UC Davis Comprehensive Cancer Center	no	yes
Harold C. Simmons Comprehensive Cancer Center	-	-	UCSF Hellen Diller Family Comprehensive Cancer Center	yes	yes
Herbert Irving Comprehensive Cancer Center	no	yes	UNC Lineberger Comprehensive Cancer Center	yes	no
Holden Comprehensive Cancer Center	yes	yes	University of Chicago Comprehensive Cancer Center	no	yes
Hollings Cancer Center	no	no	University of Colorado Comprehensive Cancer Center	no	yes
Huntsman Cancer Institute	yes	yes	University of Hawaii Cancer Center	no	yes
Indiana University Melvin & Bren Simon Cancer Center	yes	yes	University of Kansas Cancer Center	no	yes
Jonsson Comprehensive Cancer Center	no	yes	University of Maryland Greenbaum Comprehensive Cancer Center	yes	yes
Laura and Isaac Perlmutter Cancer Center at NYU Langone	yes	yes	University of Michigan Comprehensive Cancer Center	yes	yes
Markey Cancer Center	no	yes	University of Wisconsin Carbone Cancer Center	no	yes
Masonic Cancer Center	no	yes	UNM Cancer Research & Treatment Center	no	yes
Massey Cancer Center	no	no	UPMC Hillman Cancer Center	yes	yes
Mayo Clinic Cancer Center	yes	yes	USC Norris Comprehensive Cancer Center	no	yes
Mays Cancer Center	yes	yes	Vanderbilt-Ingram Cancer Institute	yes	yes
MD Anderson Cancer Center	yes	yes	Wake Forest Baptist Comprehensive Cancer Center	no	yes
Memorial Sloan Kettering Cancer Center	yes	yes	Winship Cancer Institute at Emory University	no	yes
Moores Comprehensive Cancer Center	no	yes	Yale Cancer Institute	yes	yes

NDCCs with a '-' indicates no response was received as of April 25, 2019.

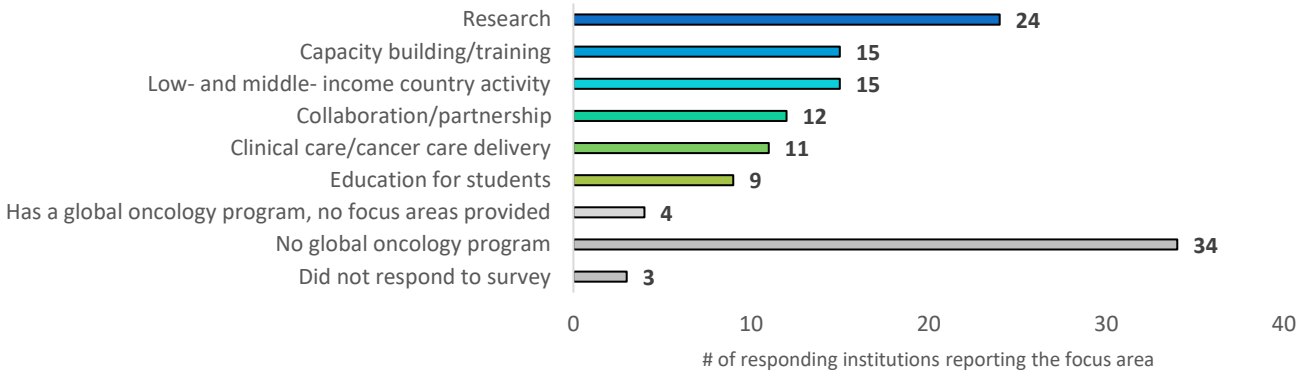
Global Oncology Programs

33 NDCCs reported having a global oncology program at their institution (Fig. 6). The section below describes characteristics of these programs. See the tables in Annex II for additional and more detailed information about global oncology programs at NDCCs.

Program Focus Areas

Respondents were asked to provide a brief description of their global oncology program (Fig. 7). These program descriptions were reviewed and coded to major thematic areas. Programs could be coded to more than one focus area. Level of detail for each program description varied or a description was not provided, which may impact the total numbers per focus area. Top focus areas based on program descriptions included research (24 programs); capacity building and training (15 programs); and LMIC activity (15 programs). See Glossary of Terms (p. 4) for Program and Project Focus Area Definitions.

Figure 7. Global oncology program focus areas



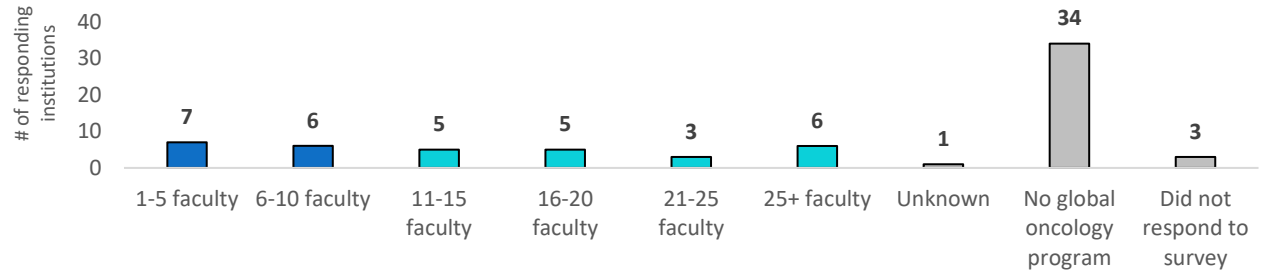
Program Leadership

Twenty-seven of 33 responding NDCCs with a global oncology program reported having an identified individual who is the leader for their global oncology program.

Faculty Participation

Responding NDCCs with a global oncology program reported the estimated number of faculty engaged in global oncology activities at their institutions (Fig. 8). Thirteen institutions with a global oncology program reported having 1-10 faculty engaged in global oncology. Nineteen institutions with a global oncology program reported having 11 or more faculty engaged in global oncology. Note that the proportion of global oncology faculty to the total number of faculty at each NDCC is not known, as the survey did not ask for the total number of faculty per NDCC.

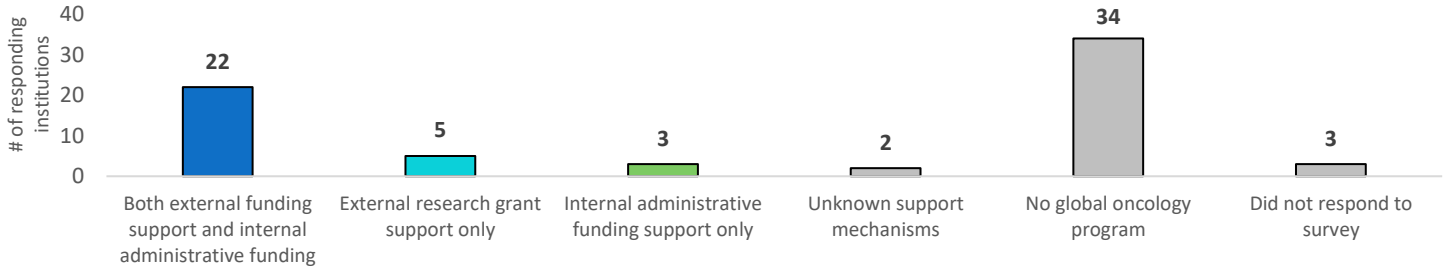
Figure 8. Faculty engagement in global oncology programs



Funding Support

Responding NDCCs with a global oncology program reported whether they receive external research grant and/or internal administrative fund support for their global oncology activities (Fig. 9). NDCCs could select more than one funding source. The majority of NDCCs with global oncology programs (22 of 33 NDCCs) reported receiving both external funding support and internal administrative funding for global oncology activities. Details about project funding sources are presented later in this report.

Figure 9. Funding sources for activities within global oncology programs

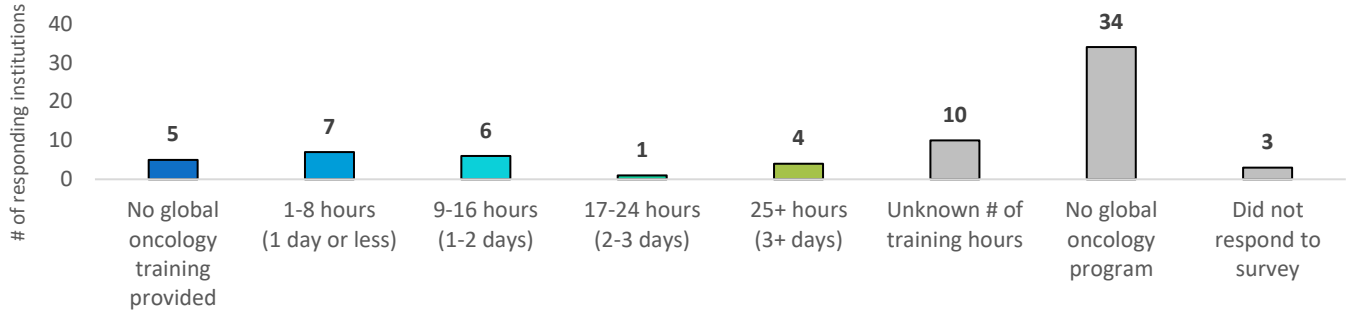


Trainee Involvement in Global Oncology

NDCCs with global oncology programs (N=33) responded to several questions about the trainees in their programs.

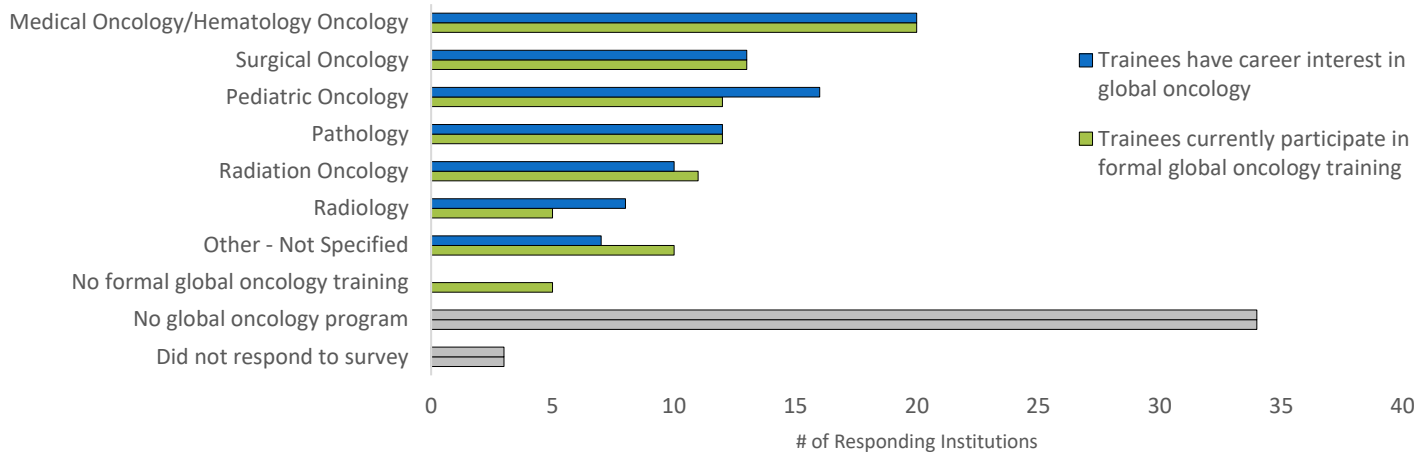
27 of 33 NDCCs provide some level of global oncology training to trainees	**11** of 33 NDCCs provide at least 8 hours of training in global oncology (Fig. 10)	**17** of 33 NDCCs reported that trainees complete global oncology rotations outside of the U.S.	**17** of 33 NDCCs reported enrolling trainees from LMICs	**15** of 33 NDCCs reported engaging with non-enrolled trainees in LMICs through activities such as capacity building

Figure 10. Hours of training within global oncology programs



NDCCs with a global oncology program also reported which specialty training programs provide global oncology lectures and which programs had trainees with an interest in pursuing global oncology as part of their future career (Fig. 11). The survey did not ask for the number of trainees per NDCC. NDCCs could report on more than one specialty training program, and specialty training program offerings varied by responding NDCCs. More NDCCs reported that their trainees had a career interest in global pediatric oncology or global radiology than currently participate in global oncology training for those specialties.

Figure 11. Career interest and training in global oncology by specialty training program



Global Oncology Projects

Sixty-one NDCCs reported one or more non-NIH-funded global oncology projects, and 20 of these NDCCs reported 10 or more global oncology projects. The section below describes characteristics of these projects. A total of 613 non-NIH-funded projects were reported by NDCCs (Fig. 12, Fig. 13). See the tables in Annex II for additional and more detailed information about global oncology projects led by NDCCs.

Figure 12. Number of non-NIH-funded global oncology projects reported by NDCCs (NDCCs highlighted in blue reported having a global oncology program at their NDCC)

NCI-Designated Cancer Center Name	Total Non-NIH-Funded NDCC Survey Projects	Non-NIH-Funded NCI-Designated Cancer Center Survey Projects
MD Anderson Cancer Center	58	
UCSF Helen Diller Family Comprehensive Cancer Center	49	
City of Hope Comprehensive Cancer Center	46	
Yale Cancer Institute	29	
University of Chicago Comprehensive Cancer	25	
H. Lee Moffitt Cancer Center	24	
St. Jude Children's Research Hospital	24	
Memorial Sloan-Kettering Cancer Center	23	
Fox Chase Cancer Center	20	
OHSU Knight Cancer Institute	17	
University of Michigan Cancer Center	17	
Sidney Kimmel Comprehensive Cancer Center	16	
Stephenson Cancer Center	14	
UPMC Hillman Cancer Center	14	
Albert Einstein Cancer Center	13	
Stanford Cancer Institute	13	
Tisch Cancer Institute	13	
Fred Hutchinson/UW Cancer Consortium	12	
Jonsson Comprehensive Cancer Center	12	
University of Hawaii Cancer Center	11	
Indiana University - Simon Cancer Center	9	
O'Neal Comprehensive Cancer Center at UAB	9	
Rutgers Cancer Institute of New Jersey	9	
USC Norris Comprehensive Cancer Center	9	
Dartmouth-Hitchcock Norris Cotton Comprehensive Cancer Center	8	
Winship Cancer Institute at Emory University	8	
Dan L. Duncan Comprehensive Cancer Center	7	
David H. Koch Institute for Integrative Cancer Research	7	
Sidney Kimmel Cancer Center at TJU	7	
The Ohio State University Comprehensive Cancer Center	7	
Abramson Cancer Center	5	
Case Comprehensive Cancer Center	5	
Dana-Farber/Harvard Cancer Center	5	
Masonic Cancer Center	5	
Vanderbilt-Ingram Cancer Institute	5	
Barbara Ann Karmanos Cancer Center	4	
Duke Cancer Institute	4	
Sanford Burnham Prebys Medical Discovery Institute	4	
University of Wiscone Carbone Cancer Center	4	
Herbert Irving Comprehensive Cancer Center	3	
Hunstman Cancer Institute	3	
Mays Cancer Center at UT Health San Antonio	3	
Moores Comprehensive Cancer Center	3	
University of Colorado Comprehensive Cancer Center	3	
University of Kansas Cancer Center	3	
Alvin J. Siteman Cancer Center	2	
Fred and Pamela Buffett Cancer Center	2	
Georgetown Lombardi Comprehensive Cancer Center	2	
The University of Virginia Cancer Center	2	
University of Maryland Greenbaum Comprehensive Cancer Center	2	
University of New Mexico Comprehensive Cancer Center	2	
Wake Forest Baptist Comprehensive Cancer Center	2	
Cold Spring Harbor Laboratory Cancer Center	1	
Holden Comprehensive Cancer Center	1	
Laura and Issac Perlmutter Cancer Center at NYU Langone	1	
Markey Cancer Center	1	
Mayo Clinic Cancer Center	1	
Purdue University Center for Cancer Research	1	
Roswell Park Cancer Institute	1	
The Wistar Institute	1	
UC Davis Comprehensive Cancer Center	1	

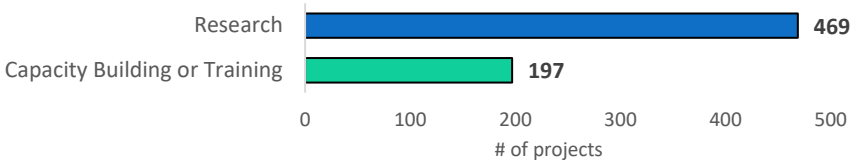
Figure 13. NDCCs, by number of non-NIH-funded global oncology projects reported and number of NCI-funded FY18 projects by NDCCs (including affiliated institutions)

NCI-Designated Cancer Center Name	Total Non-NIH-Funded NDCC Survey Projects	Non-NIH-Funded NCI-Designated Cancer Center Survey Projects	NCI-Funded FY18 Projects	Total Base Projects	Combined Total Projects
Dana-Farber/Harvard Cancer Center	5			77	82
MD Anderson Cancer Center	58			16	74
UCSF Hellen Diller Family Comprehensive Cancer Center	49			24	73
City of Hope Comprehensive Cancer Center	46			10	56
Fred Hutchinson/UW Cancer Consortium	12			33	45
Memorial Sloan Kettering Cancer Center	23			21	44
Yale Cancer Institute	29			6	35
St. Jude Children's Research Hospital	24			10	34
Sidney Kimmel Comprehensive Cancer Center	16			15	31
H. Lee Moffitt Cancer Center	24			5	29
University of Chicago Comprehensive Cancer Center	25			2	27
Fox Chase Cancer Center	20			5	25
University of Michigan Cancer Center	17			8	25
Tisch Cancer Institute	13			11	24
Jonsson Comprehensive Cancer Center	12			11	23
UPMC Hillman Cancer Center	14			9	23
Albert Einstein Cancer Center	13			8	21
Herbert Irving Comprehensive Cancer Center	3			18	21
OHSU Knight Cancer Institute	17			4	21
Case Comprehensive Cancer Center	5			15	20
Dan L. Duncan Comprehensive Cancer Center	7			13	20
Stanford Cancer Institute	13			7	20
Barbara Ann Karmanos Cancer Center	4			15	19
USC Norris Comprehensive Cancer Center	9			10	19
Duke Cancer Institute	4			13	17
Indiana University - Simon Cancer Center	9			7	16
Masonic Cancer Center	5			11	16
Hunstman Cancer Institute	3			12	15
Mayo Clinic Cancer Center	1			14	15
Stephenson Cancer Center	14			1	15
Vanderbilt-Ingram Cancer Institute	5			10	15
Abramson Cancer Center	5			9	14
Fred and Pamela Buffett Cancer Center	2			12	14
O'Neal Comprehensive Cancer Center at UAB	9			5	14
The Ohio State University Comprehensive Cancer Center	7			7	14
Rutgers Cancer Institute of New Jersey	9			4	13
Winship Cancer Institute at Emory University	8			5	13
University of Hawaii Cancer Center	11			1	12
Alvin J. Siteman Cancer Center	2			9	11
Dartmouth-Hitchcock Norris Cotton Comprehensive Cancer Center	8			3	11
Sanford Burnham Prebys Medical Discovery Institute	4			7	11
Sidney Kimmel Cancer Center at TJU	7			4	11
UNC Lineberger Comprehensive Cancer Center	0			11	11
David H. Koch Institute for Integrative Cancer Research	7			2	9
Moores Comprehensive Cancer Center	3			5	8
Robert H. Lurie Comprehensive Cancer Center	0			8	8
University of Colorado Comprehensive Cancer Center	3			4	7
University of Maryland Greenbaum Comprehensive Cancer Center	2			5	7
University of Wisconsin Carbone Cancer Center	4			3	7
Georgetown Lombardi Comprehensive Cancer Center	2			4	6
Laura and Issac Perlmutter Cancer Center at NYU Langone	1			5	6
Roswell Park Cancer Institute	1			5	6
University of Kansas Cancer Center	3			3	6
University of New Mexico Comprehensive Cancer Center	2			4	6
Markey Cancer Center	1			4	5
The University of Virginia Cancer Center	2			3	5
UC Davis Comprehensive Cancer Center	1			4	5
Cold Spring Harbor Laboratory	1			3	4
Hollings Cancer Center	0			4	4
Mays Cancer Center	3			1	4
Wake Forest Baptist Comprehensive Cancer Center	2			2	4
The Wistar Institute	1			2	3
Chao Family Comprehensive Cancer Center	1			1	2
Holden Comprehensive Cancer Center	1			1	2
Salk Institute Cancer Center	-			2	2
Arizona Cancer Center	0			1	1
Harold C. Simmons Comprehensive Cancer Center	-			1	1
Massey Cancer Center	0			1	1
The Jackson Laboratory Cancer Center	-			1	1

Project Focus Areas

Non-NIH-funded global oncology projects were coded to two major project types – research, and capacity building or training. Approximately 77% of projects were coded to research, and approximately 32% of projects were coded to capacity building or training. Only three projects were not coded to a primary focus area of research or capacity building or training. Projects were also coded to secondary focus areas, including cancer screening (54 projects), clinical trials (42 projects), implementation (41 projects), cancer registries (24 projects), pathology (21 projects), and networks or working groups (33 projects). Projects could be coded to more than one primary or secondary focus area.

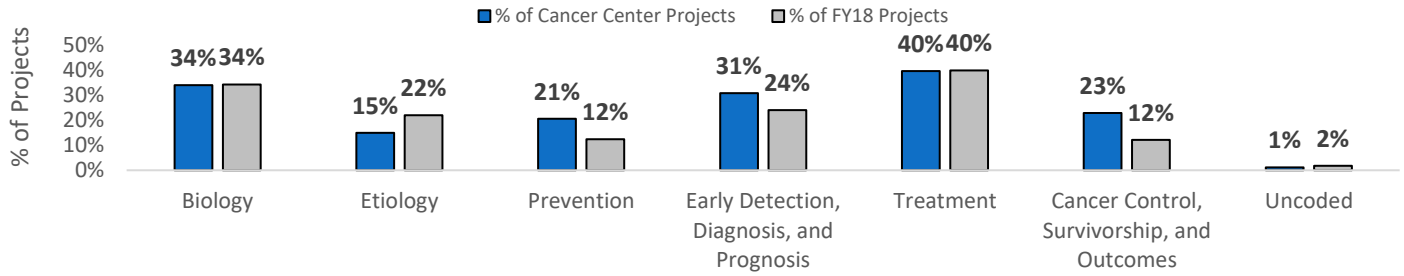
Figure 14. Primary focus areas of non-NIH-funded global oncology projects



Common Scientific Outline (CSO) Codes

The Common Scientific Outline (CSO) is a system to classify areas of scientific interest in cancer research across the cancer continuum. Non-NIH-funded global oncology projects were coded by respondents to CSO codes, and projects could receive more than one code (Fig. 15). Approximately one-third of NDCC global oncology projects were coded to biology; early detection, diagnosis and prognosis; or treatment. Compared to FY2018 NCI-funded extramural grants with international collaborators or Principal Investigators (PIs), non-NIH-funded projects from NDCCs were likely to focus less on etiology, equally on biology and treatment, and more on prevention, early detection, diagnosis and prognosis, and cancer control, survivorship, and outcomes research.

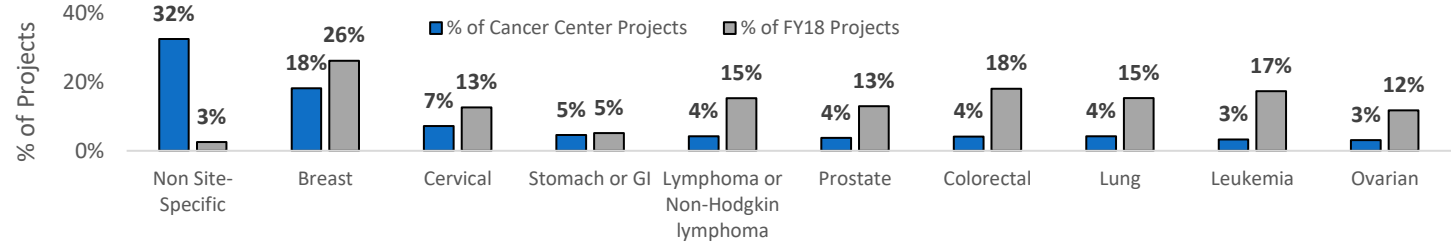
Figure 15. Non-NIH-funded NDCC global oncology projects by CSO code, as compared with FY2018 NCI-funded international grants



Cancer Site

Non-NIH-funded global oncology projects were coded to top cancer sites, and projects could receive more than one code (Fig. 16). Compared to FY2018 NCI-funded extramural grants with international collaborators or PIs, non-NIH-funded projects from NDCCs were more likely to be coded to non-site-specific cancers.

Figure 16. Non-NIH-funded NDCC global oncology projects by cancer site, as compared with FY2018 NCI-funded international grants



Childhood Cancers

Non-NIH-funded global oncology projects were coded by respondents to indicate whether the project focused on childhood cancers (Fig. 17). Some projects did not report whether the focus was on childhood cancers. Many NDCCs reported both projects that focused on childhood cancers and projects that focused on adult cancers.

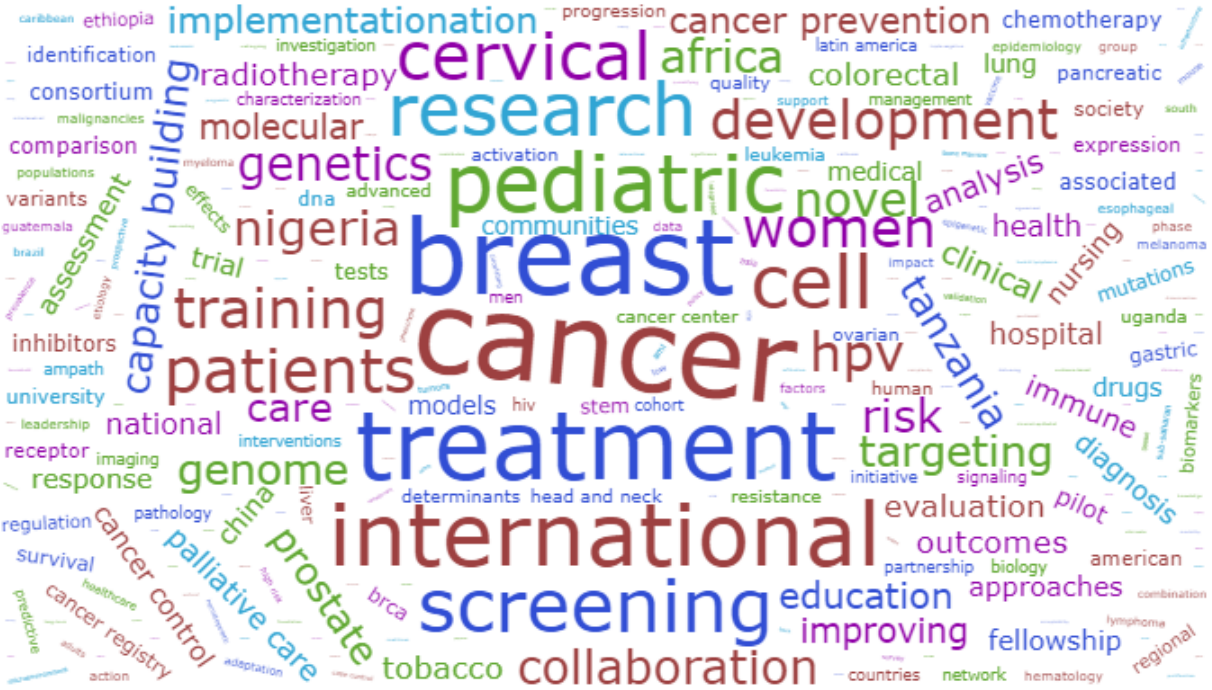
Figure 17. Non-NIH-funded NDCC global oncology projects by focus on childhood cancers

	# of NDCCs	# of Projects
Reporting focus on childhood cancers	27	83
Not reporting focus on childhood cancers	58	530

Project Topics in Detail

Non-NIH-funded global oncology project titles were used to create a word cloud that visualizes common themes across projects. The top words and themes that emerge from the project titles are displayed in Figure 18. Related words were combined to reduce duplication.

Figure 18. Non-NIH-funded NDCC global oncology project titles



Collaborator Countries

NDCCs were asked to report all country collaborators working on non-NIH-funded global oncology projects. Projects could have more than one collaborator, and some respondents self-defined as “global.” Non-NIH-funded NDCC global oncology projects included collaborators from 110 countries (42 HICs, 25 UMICs, 27 LMICs, and 16 LICs). The top 30 collaborator countries are shown below (Fig. 18). Seventeen of the top 30 collaborator countries are LMICs (shown in green, including projects marked as global/spanning LMICs). Approximately 60% of non-NIH-funded projects from NDCCs had collaborators from LMICs, and approximately 33% of the FY2018 NCI-funded extramural grants with international collaborators or PIs included collaborators from LMICs. In addition, over 40 non-NIH-funded projects reported a foreign project lead. NDCC collaborator countries were classified by World Bank Income Group classification (Figures 19 and 20). Projects could have collaborators from more than one income group. Some projects did not report country collaborators.

Figure 18. Non-NIH-funded NDCC global oncology projects by collaborator country (LMICs shown in green, and includes projects defined as "global")

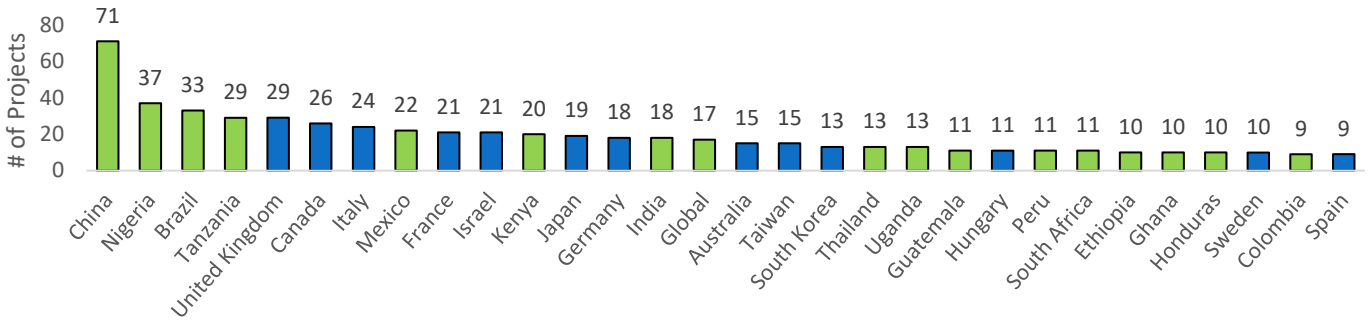


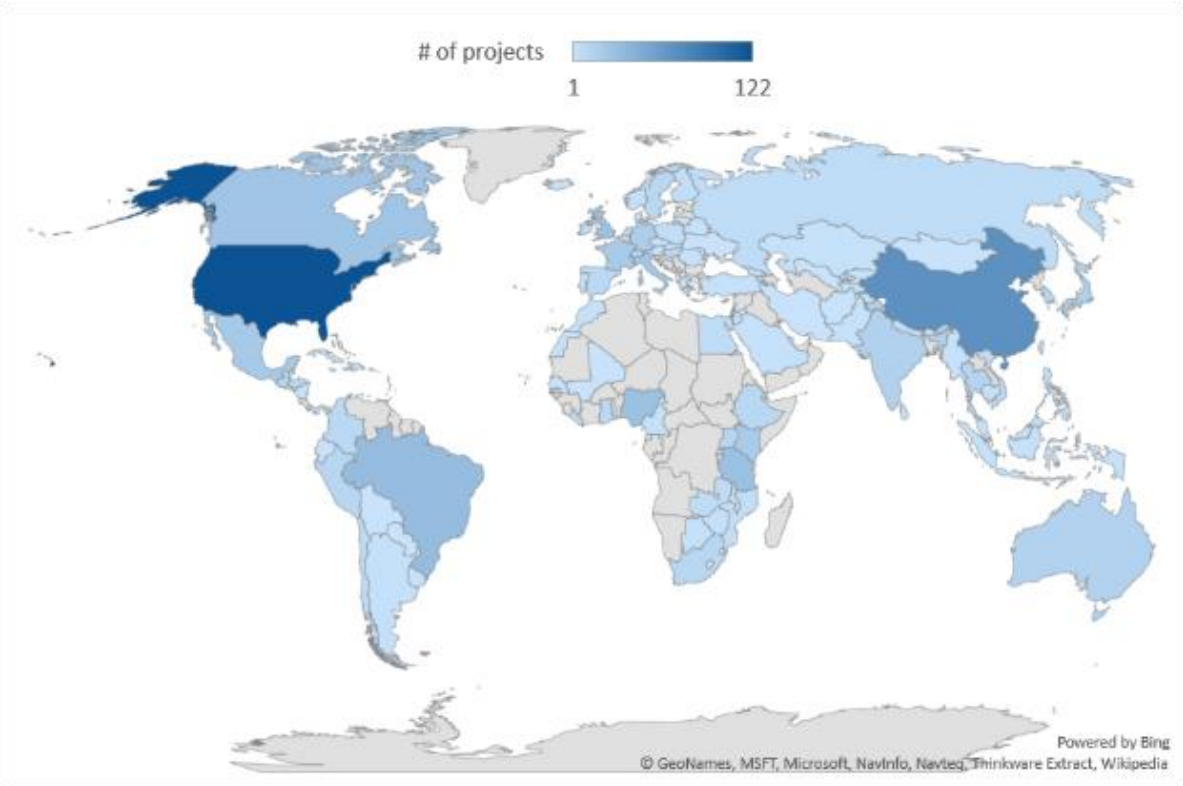
Figure 19. Non-NIH-funded NDCC global oncology projects by World Bank country income group classification

Income Group	# of Collaborator Countries with Projects	# of NDCCs with Projects	# of Projects
High Income Countries	**42**	**52**	**295**
Upper Middle-Income Countries	**25**	**42**	**179**
Lower Middle-Income Countries	**27**	**34**	**127**
Low Income Countries	**16**	**25**	**84**

Figure 20. Number of non-NIH-funded NDCC global oncology projects by World Bank country income group classification

China	**71**	South Africa	**11**	El Salvador	**4**	Indonesia	**2**	Bahamas	**1**
Nigeria	**37**	Ethiopia	**10**	Finland	**4**	Kazakhstan	**2**	Barbados	**1**
Brazil	**33**	Ghana	**10**	Mozambique	**4**	Kyrgyzstan	**2**	Bhutan	**1**
Tanzania	**29**	Honduras	**10**	Nepal	**4**	Lithuania	**2**	Bolivia	**1**
United Kingdom	**29**	Sweden	**10**	Poland	**4**	Malawi	**2**	Cyprus	**1**
Canada	**26**	Colombia	**9**	Armenia	**3**	Malaysia	**2**	Czech Republic	**1**
Italy	**24**	Spain	**9**	Botswana	**3**	Moldova	**2**	Dominican Republic	**1**
Mexico	**22**	Chile	**8**	Denmark	**3**	Morocco	**2**	Ecuador	**1**
France	**21**	Lebanon	**8**	Hong Kong	**3**	Myanmar	**2**	Gambia	**1**
Israel	**21**	Liberia	**8**	Jamaica	**3**	Nicaragua	**2**	Grenada	**1**
Kenya	**20**	Netherlands	**8**	Jordan	**3**	Pakistan	**2**	Iceland	**1**
Japan	**19**	Rwanda	**8**	Norway	**3**	Qatar	**2**	Iran	**1**
Germany	**18**	Singapore	**8**	Panama	**3**	Romania	**2**	Madagascar	**1**
India	**18**	Vietnam	**8**	Trinidad and Tobago	**3**	Saudi Arabia	**2**	Mali	**1**
Australia	**15**	Switzerland	**7**	Zimbabwe	**3**	Senegal	**2**	Mongolia	**1**
Taiwan	**15**	Egypt	**6**	Bangladesh	**2**	Slovenia	**2**	Paraguay	**1**
South Korea	**13**	Russia	**6**	Belarus	**2**	Sri Lanka	**2**	Portugal	**1**
Thailand	**13**	Zambia	**6**	Cambodia	**2**	Tajikistan	**2**	Slovakia	**1**
Uganda	**13**	Haiti	**5**	Cameroon	**2**	Turkey	**2**	St. Kitts and Nevis	**1**
Guatemala	**11**	Ireland	**5**	Cuba	**2**	Uruguay	**2**	Ukraine	**1**
Hungary	**11**	Philippines	**5**	Georgia	**2**	Afghanistan	**1**	United Arab Emirates	**1**
Peru	**11**	Argentina	**4**	Greece	**2**	Austria	**1**	Uzbekistan	**1**

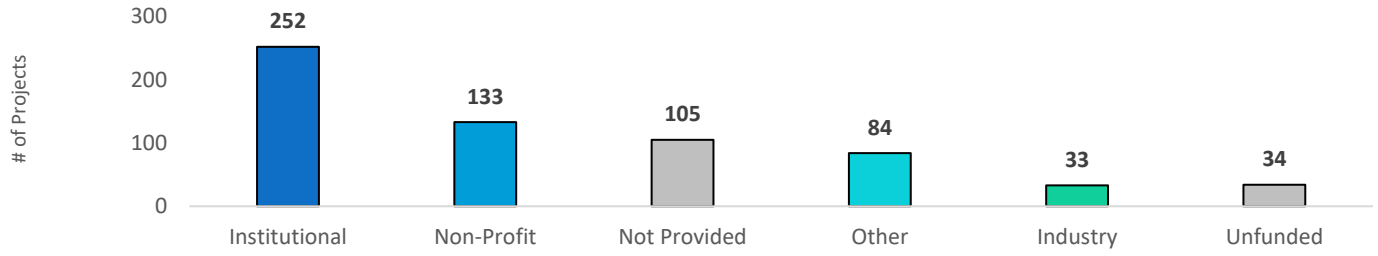
Figure 21. Map of non-NIH-funded NDCC global oncology projects by collaborator country



Project Funding Sources

NDCCs were asked to report funding sources in open text for their non-NIH-funded global oncology projects, and these funding sources were coded by NCI/CGH to five major funding source categories (Fig. 22). Projects could have more than one type of project funding. The most frequently reported source of project funding was institutional funding, followed by funding obtained from non-profit organizations.

Figure 22. Number of non-NIH-funded NDCC global oncology projects by type of project funding



Type of Project Funding	Example of Funders Reported
Institutional (administrative or investigator funding)	Departments within NCI-Designated Cancer Centers; investigator funding
Non-Profit	Susan G. Komen; STOP Cancer
Not Provided	-
Other	U.S. Department of Defense; European Commission; University of Oxford
Industry	Bristol-Myers Squibb Foundation; Cepheid
Unfunded	Funding for the project was in development; the project was a result of an unfunded collaboration

Observations about Global Oncology at NDCCs

Substantial global oncology work is occurring at NDCCs

Over 90% of NDCCs (65 NDCCs) reported engaging in global oncology activities (two of the 67 responding institutions reported having no global oncology activities): 33 NDCCs reported having a formal global oncology program, and 61 NDCCs reported having one or more global oncology projects at their NDCCs. The 61 NDCCs reporting global oncology projects reported a total of 613 non-NIH-funded projects, a number which is likely an underestimate of the full scope of global oncology projects happening at NDCCs. Taken together with approximately 560 projects with a foreign collaborator led by NDCCs in the NCI FY2018 extramural research portfolio, the NDCCs are engaging in substantial global oncology activity.

Global oncology programs at NDCCs offer a variety of training opportunities

NDCCs with global oncology programs reported, on average, providing trainees with 1-2 days of dedicated training in global oncology. Trainees from a wide range of specialties – from medical oncology to pathology and radiology – reported participating in global oncology training and reported an interest in pursuing global oncology as a part of their future careers. NDCCs also reported offering training opportunities in global oncology to students from LMICs, either through enrolled opportunities (LMIC students were enrolled in their programs) and non-enrolled opportunities (LMIC students had the opportunity to participate in capacity building activities or clinical observerships).

NDCCs are working globally, with an emphasis on LMIC collaboration

NDCCs are collaborating with partners in 110 countries across all world regions; 43 countries are the study sites for five or more NDCC projects. Approximately 58% of non-NIH-funded projects from NDCCs had collaborators from LMICs, and approximately 33% of the FY2018 NCI-funded extramural grants with international collaborators or PIs included collaborators from LMICs.

Global oncology activities at NDCCs have diverse funding streams

Global oncology programs and activities at NDCCs reported diverse funding streams. Most NDCCs with global oncology programs reported receiving both external grant support and internal administrative funding to support their global oncology activities. NDCCs with global oncology projects reported receiving funding from a variety of sources including institutional funds, non-profit organizations, industry, other U.S. government agencies, and international agencies. NDCCs reported funding from over 150 different funders for their projects (Annex II, Fig. 24).

Global oncology activities at NDCCs cover a breadth of topics

Global oncology activities at NDCCs cover a variety of cancer research topics and cancer sites. Global oncology programs and projects focused primarily on research and capacity building and training, but also covered clinical care, clinical trials, cancer registries, cancer screening, implementation, and pathology. Compared to NCI-funded international grants, non-NIH-funded global oncology projects at NDCCs were more likely to be focused on prevention, early detection, diagnosis, and prognosis, and cancer control, survivorship, and outcomes research. Top cancer sites covered by non-NIH-funded projects from NDCCs included non-site-specific, breast, and cervical cancers.

Ways to Use this Report as an Information Gathering Tool

Annex II provides additional and more detailed information about the types of global oncology projects that NDCCs reported in the survey. NDCCs are encouraged to utilize these tables to understand which NDCCs are working where, with whom, and on what types of projects. For example, NDCCs which are interested in further developing collaborations in a particular topic such as implementation work in sub-Saharan Africa, can use Figure 27 on page 28 to identify other institutions who have reported projects in this area. Or, NDCCs looking to broaden their work in a particular cancer site may consider looking at the cancer site table (Figure 26 on page 27) to identify other institutions who are working in this cancer site who may have opportunities for collaboration. NDCCs are invited to contact the NCI Center for Global Health for more information (see p. 2 for contact information).

Conclusions

Despite the limitations stated above in the methodology and data collection for this survey, the results and observations demonstrate a robust level of global oncology activities occurring at NDCCs and led by NDCCs with international collaborators. As mentioned, these data are likely an underrepresentation of the actual levels of global oncology activity. The process of conducting this survey has also identified future survey topics and ways to refine the information being requested.

The 2018-2019 Global Oncology Survey of NCI-Designated Cancer Centers set out to describe the non-NIH-funded global oncology activities led by NDCCs in a centralized resource; identify areas where NDCCs are working in order to promote research partnerships and coordination, as well as potential areas for increased collaboration; and, use the results to convene and coordinate NDCCs around global oncology opportunities and activities. This report will serve as a centralized resource for use by NDCCs and their partners, as well as a resource for identifying potential collaborations. This report will also be a catalyst for strategic discussions with NDCCs and NCI at upcoming meetings to explore opportunities for increased collaboration in the field of global oncology.

Annex I: Data Cleaning Methodology in Detail

Data Cleaning

- Raw data responses were stored separately in individual files.
- Survey responses were combined and organized into a master Excel data template. This involved rearranging data that may have been submitted in the incorrect columns/cells.
- Projects missing project titles were assigned titles using their NDCC name (i.e., Cancer Center Project 1, Cancer Center Project 2).
- Missing data fields were identified across the entire dataset. The data analyst filled in missing data if it could reasonably be extracted from project data already submitted by the NDCC (otherwise, these fields were left blank). This included assigning project type, project funding source, CSO, cancer site, childhood cancer indicator (based on cancer site and project summary/title), geographic region (if a location in the geographic focus column was provided), and collaborator institution (if a collaborator name and country was provided).
- New codes were also created for project type, project funding source, and cancer site to capture broad thematic areas that appeared across many projects in the dataset but were not reflected in the survey form categories. The data analyst reviewed project titles and abstracts to identify relevant projects that met the following thematic areas: project type (screening, implementation, clinical trial, registry, network or working group); project funding source (institutional, non-profit, international, investigator funds, industry, unfunded, governmental, previously NIH-funded, mixed funding sources [not specified], private contract, and unrestricted funds); and cancer site (HPV-related cancers, cancer risk factors). A secondary reviewer read the project titles and abstracts to confirm or suggest new codes for all projects. All discrepancies were reviewed by both reviewers and discussed so that a consistent code could be identified. Where necessary, a third reviewer resolved any discrepancies.
- Collaborator institutions were standardized across entries to produce standard collaborator institution names and locations. This was done using the Global Research Identifier Database (GRID) naming conventions for institutions.

Survey respondent by title/designation

Respondent Designation	Program Survey	Project Survey
Faculty & Division/Department Directors	10	9
Finance, Administration, & Research Administration	31	16
NDCC Director's Office	6	3
Global Oncology Program	15	11
Research Associates	3	5
Multiple Respondents	-	14
Unknown, N/A	2	9
No Response	3	3
TOTAL	**70**	**70**

Annex II: Survey Results in Detail

This annex provides additional details from the survey results about the types of global oncology projects that NDCCs reported. Survey results are organized into two categories: survey results by the reporting NDCC (Fig. 23-28), and two-way analysis tables that present summary survey results from all reporting NDCCs (Fig. 29-37). The variables chosen for analysis capture some of the most common high-level characteristics of global oncology projects such as project type, project funding source, CSO code, cancer site, and collaborator world region. Light blue shading indicates NDCCs reported having a global oncology program.

Survey Results by NCI-Designated Cancer Center

Figure 23. Type of Project by NDCC

Institution	Abramson Cancer Center	Albert Einstein Cancer Center	Alvin J. Siteman Cancer Center	Barbara Ann Karmanos Cancer Center	Case Comprehensive Cancer Center	City of Hope Comprehensive Cancer Center	Cold Spring Harbor Laboratory Cancer Center	Dan L. Duncan Comprehensive Cancer Center	Dana-Farber/Harvard Cancer Center	Dartmouth-Hitchcock Norris Cotton Cancer Center	David H. Kock Institute for Integrative Cancer Center	Duke Cancer Institute	Fox Chase Cancer Center	Fred and Pamela Buffett Cancer Center	Fred Hutch/UW Cancer Consortium	Georgetown Lombardi Comp. Cancer Center	H. Lee Moffitt Cancer Center and Research Inst.	Herbert Irving Comprehensive Cancer Center	Holden Comprehensive Cancer Center	Huntsman Cancer Institute	Indiana University Melvin & Bren Simon Cancer Center	Jonsson Comprehensive Cancer Center	Laura and Issac Perlmutter Cancer Center at NYU Langone	Markey Cancer Center	Masonic Cancer Center	Mayo Clinic Cancer Center	Mays Cancer Center	MD Anderson Cancer Center	Memorial Sloan Kettering Cancer Center	Moores Comprehensive Cancer Center	OHSU Knight Cancer Institute
Research	4	13	2	3	4	44	1	3	1	7	7	4	19	2	12		21	3	1	3		10	1	1	5	1	3	48	12	2	14
Capacity Building or Training	4	1		3		6		4	5	3		1	1		1	2	4				9	5					1	13	12	2	3
Screening										5		2	1		1	1				1	4	3	1					4	3		2
Clinical Trials						1		1					3		1		2					1						6	2		2
Implementation	2			1				1							6							1	1					2			1
Registries					1			1	1			2			1							1					1	2	1	1	2
Pathology			1					1		1												3						3			
Network or Working Group		1		1	1				1						1													4	4		1

Institution	O'Neal Comprehensive Cancer Center at UAB	Purdue University Center for Cancer Research	Roswell Park Cancer Institute	Rutgers Cancer Institute of New Jersey	Sanford Burnham Prebys Med. Disc. Inst.	Sidney Kimmel Cancer Center at TJU	Sidney Kimmel Comprehensive Cancer Center	St. Jude Children's Research Hospital	Stanford Cancer Institute	Stephenson Cancer Center	The Ohio State University Comp. Cancer Center	The University of Virginia Cancer Center	The Wistar Institute Cancer Center	Tisch Cancer Institute	UC Davis Comprehensive Cancer Center	UCSF Hellen Diller Family Comp. Cancer Center	University of Chicago Comp. Cancer Center	University of Colorado Cancer Center	University of Hawaii Cancer Center	University of Kansas Cancer Center	Univ. of Maryland Greenbaum Comp. Cancer Center	University of Michigan Comp. Cancer Center	University of New Mexico Comp. Cancer Center	University of Wisconsin Carbone Cancer Center	UPMC Hillman Cancer Center	USC Norris Comprehensive Cancer Center	Vanderbilt-Ingram Cancer Center	Wake Forest Baptist Comp. Cancer Center	Winship Cancer Institute of Emory University	Yale Cancer Center	Total
Research	5	1	1	9	4	5	15	13	7	13	6	1	1	8		27	22	3	11	3	2	17	2	4	1	5	5	2	4	20	469
Capacity Building or Training	5					2	1	18	8	1	1	2		9	1	27	7			3		2	1		13	4			3	9	197
Screening	6						2							4		4					1	6	1	1		1					54
Clinical Trials	1						3	1			3					1	4	1		1			1	1		1	1			4	42
Implementation	2						1	12						2		4	1					1				1			2		41
Registries								2	1			1		1								3						1		1	24
Pathology								1			1			2		4						1			2					1	21
Network or Working Group								6		1	2					4			2				1	1		2					33

Figure 24. Project Funding Source by NDCC

Institution	Abramson Cancer Center	Albert Einstein Cancer Center	Alvin J. Siteman Cancer Center	Barbara Ann Karmanos Cancer Center	Case Comprehensive Cancer Center	City of Hope Comprehensive Cancer Center	Cold Spring Harbor Laboratory Cancer Center	Dan L. Duncan Comprehensive Cancer Center	Dana-Farber/Harvard Cancer Center	Dartmouth-Hitchcock Norris Cotton Cancer Center	David H. Kock Institute for Integrative Cancer Center	Duke Cancer Institute	Fox Chase Cancer Center	Fred and Pamela Buffett Cancer Center	Fred Hutch/UW Cancer Consortium	Georgetown Lombardi Comp. Cancer Center	H. Lee Moffitt Cancer Center and Research Inst.	Herbert Irving Comprehensive Cancer Center	Holden Comprehensive Cancer Center	Huntsman Cancer Institute	Indiana University Melvin & Bren Simon Cancer Center	Jonsson Comprehensive Cancer Center	Laura and Issac Perlmutter Cancer Center at NYU Langone	Markey Cancer Center	Masonic Cancer Center	Mayo Clinic Cancer Center	Mays Cancer Center	MD Anderson Cancer Center	Memorial Sloan Kettering Cancer Center	Moores Comprehensive Cancer Center	OHSU Knight Cancer Institute
Industry						1		2					3		3		4			1	7										
Institutional	2	4	2	2	1	28		1	3	7	2	4	2		2	1												48	14	2	
Non-Profit	3	2		2	1	13	1	4	1		4		3		8		1	1		1	2	1	1				2	4	5		3
Other	1	6		2		4			2	1	1		8			1	3	1		2				1	3	1	1	1		1	6
Unfunded		1											2					1				11						1			3
Not Provided	1				3	1							1	2	1		17		1						1		1	2	4		5

Institution	O'Neal Comprehensive Cancer Center at UAB	Purdue University Center for Cancer Research	Roswell Park Cancer Institute	Rutgers Cancer Institute of New Jersey	Sanford Burnham Prebys Med. Disc. Inst.	Sidney Kimmel Cancer Center at TJU	Sidney Kimmel Comprehensive Cancer Center	St. Jude Children's Research Hospital	Stanford Cancer Institute	Stephenson Cancer Center	The Ohio State University Comp. Cancer Center	The University of Virginia Cancer Center	The Wistar Institute Cancer Center	Tisch Cancer Institute	UC Davis Comprehensive Cancer Center	UCSF Hellen Diller Family Comp. Cancer Center	University of Chicago Comp. Cancer Center	University of Colorado Cancer Center	University of Hawaii Cancer Center	University of Kansas Cancer Center	Univ. of Maryland Greenbaum Comp. Cancer Center	University of Michigan Comp. Cancer Center	University of New Mexico Comp. Cancer Center	University of Wisconsin Carbone Cancer Center	UPMC Hillman Cancer Center	USC Norris Comprehensive Cancer Center	Vanderbilt-Ingram Cancer Center	Wake Forest Baptist Comp. Cancer Center	Winship Cancer Institute of Emory University	Yale Cancer Center	Total
Industry					1				1		1					5					1		1							2	33
Institutional						1	1	24	8	4		1		2		27	8	1	4	1	1	17		1	14	1	2	2	4	3	252
Non-Profit	5					1	7		6	3	1	1		4		8	9	2		3				2			2		1	15	133
Other	3				2	1	2			8		1		1	1	6	3		1			1	1				1	1		6	84
Unfunded	1				1		1		4		5					1														1	34
Not Provided	2	1	1	9		4	5		1				1	7		8	7		6			1		1		8			3	3	108

Figure 25. Project Common Scientific Outline (CSO) Codes by NDCC

Institution	Abramson Cancer Center	Albert Einstein Cancer Center	Alvin J. Siteman Cancer Center	Barbara Ann Karmanos Cancer Center	Case Comprehensive Cancer Center	City of Hope Comprehensive Cancer Center	Cold Spring Harbor Laboratory Cancer Center	Dan L. Duncan Comprehensive Cancer Center	Dana-Farber/Harvard Cancer Center	Dartmouth-Hitchcock Norris Cotton Cancer Center	David H. Koch Institute for Integrative Cancer Center	Duke Cancer Institute	Fox Chase Cancer Center	Fred and Pamela Buffett Cancer Center	Fred Hutch/UW Cancer Consortium	Georgetown Lombardi Comp. Cancer Center	H. Lee Moffitt Cancer Center and Research Inst.	Herbert Irving Comprehensive Cancer Center	Holden Comprehensive Cancer Center	Huntsman Cancer Institute	Indiana University Melvin & Bren Simon Cancer Center	Jonsson Comprehensive Cancer Center	Laura and Issac Perlmutter Cancer Center at NYU Langone	Markey Cancer Center	Masonic Cancer Center	Mayo Clinic Cancer Center	Mays Cancer Center	MD Anderson Cancer Center	Memorial Sloan Kettering Cancer Center	Moores Comprehensive Cancer Center	OHSU Knight Cancer Institute
Biology	5	7	1	2	4	18		1		2	6	1	11		1		20					2		1	4	1	1	24	4		11
Etiology	5	4		1	1	3				1			3		1	1	8			2		2						5	3	1	
Prevention	1	3				3				5			1		1		5	1		1	4	2	1				1	16	1	1	4
Early Detection	2		1	1	3	8		2		5		1	2		11	1	6		1	1	7	4	1				1	21	8	1	3
Treatment	4	2	1	2	1	13	1	4	3		3		5	2	3		11		1	1	8	3			2		1	26	12	1	1
Cancer Control		6			1	8		4	3	5		2	1		3		7	2			1	2					1	19	4	1	1

Institution	O'Neal Comprehensive Cancer Center at UAB	Purdue University Center for Cancer Research	Roswell Park Cancer Institute	Rutgers Cancer Institute of New Jersey	Sanford Burnham Prebys Med. Disc. Inst.	Sidney Kimmel Cancer Center at TJU	Sidney Kimmel Comprehensive Cancer Center	St. Jude Children's Research Hospital	Stanford Cancer Institute	Stephenson Cancer Center	The Ohio State University Comp. Cancer Center	The University of Virginia Cancer Center	The Wistar Institute Cancer Center	Tisch Cancer Institute	UC Davis Comprehensive Cancer Center	UCSF Hellen Diller Family Comp. Cancer Center	University of Chicago Comp. Cancer Center	University of Colorado Cancer Center	University of Hawaii Cancer Center	University of Kansas Cancer Center	Univ. of Maryland Greenbaum Comp. Cancer Center	University of Michigan Comp. Cancer Center	University of New Mexico Comp. Cancer Center	University of Wisconsin Carbone Cancer Center	UPMC Hillman Cancer Center	USC Norris Comprehensive Cancer Center	Vanderbilt-Ingram Cancer Center	Wake Forest Baptist Comp. Cancer Center	Winship Cancer Institute of Emory University	Yale Cancer Center	Total
Biology				6	4	1	3		3	13					1	7	9	3	7	1		2	1	1					1	17	208
Etiology	1	1				1	1		3				1	3		3	7		2	1		6		1		4	1			15	92
Prevention	4	1	1				4			1		1		10		14	12		1	2	1	2	1	1		1	2		2	14	126
Early Detection	5		1	2			4	5	6		2	1		10		13	13		3	1	2	9	1	1	3	1	1			14	189
Treatment	2		1	3		4	7	19	6		6	1		8		19	7	2		2		2		3	11	2	2	1	5	19	243
Cancer Control	1	1				1	1	15	2		2	2		4		12	7					2	1	1		1	1	1		14	140

Figure 26. Project Cancer Sites by NDCC

Institution	Abramson Cancer Center	Albert Einstein Cancer Center	Alvin J. Siteman Cancer Center	Barbara Ann Karmanos Cancer Center	Case Comprehensive Cancer Center	City of Hope Comprehensive Cancer Center	Cold Spring Harbor Laboratory Cancer Center	Dan L. Duncan Comprehensive Cancer Center	Dana-Farber/Harvard Cancer Center	Dartmouth-Hitchcock Norris Cotton Cancer Center	David H. Koch Institute for Integrative Cancer Center	Duke Cancer Institute	Fox Chase Cancer Center	Fred and Pamela Buffett Cancer Center	Fred Hutch/UW Cancer Consortium	Georgetown Lombardi Comp. Cancer Center	H. Lee Moffitt Cancer Center and Research Inst.	Herbert Irving Comprehensive Cancer Center	Holden Comprehensive Cancer Center	Huntsman Cancer Institute	Indiana University Melvin & Bren Simon Cancer Center	Jonsson Comprehensive Cancer Center	Laura and Issac Perlmutter Cancer Center at NYU Langone	Markey Cancer Center	Masonic Cancer Center	Mayo Clinic Cancer Center	Mays Cancer Center	MD Anderson Cancer Center	Memorial Sloan Kettering Cancer Center	Moores Comprehensive Cancer Center	OHSU Knight Cancer Institute
Non-Site-Specific	3	4		2	1	21		2	2	5	1	2	3	2	1		2	1	1			9		1	1		2	15	8	1	6
Breast		1	1		1	2				1	6	1		2	9		2			2	2				1			9	7		3
Cervical						2				1				2	1	1	1	1			3		1					9		1	
Stomach or GI			1			3							1		1							1						1	1		
Lung		5		1		1							3			1	3					1						4			
Lymphoma or NHL						2		1	1								1			1	1							8			3
Colorectal						2							3									1					1	2	6		
Prostate		1				2							4	2			1	1				1			1			1			
Leukemia						4		1	1				1		1					1								3			
Ovarian											1			2											1			5			

Institution	O'Neal Comprehensive Cancer Center at UAB	Purdue University Center for Cancer Research	Roswell Park Cancer Institute	Rutgers Cancer Institute of New Jersey	Sanford Burnham Prebys Med. Disc. Inst.	Sidney Kimmel Cancer Center at TJU	Sidney Kimmel Comprehensive Cancer Center	St. Jude Children's Research Hospital	Stanford Cancer Institute	Stephenson Cancer Center	The Ohio State University Comp. Cancer Center	The University of Virginia Cancer Center	The Wistar Institute Cancer Center	Tisch Cancer Institute	UC Davis Comprehensive Cancer Center	UCSF Hellen Diller Family Comp. Cancer Center	University of Chicago Comp. Cancer Center	University of Colorado Cancer Center	University of Hawaii Cancer Center	University of Kansas Cancer Center	Univ. of Maryland Greenbaum Comp. Cancer Center	University of Michigan Comp. Cancer Center	University of New Mexico Comp. Cancer Center	University of Wisconsin Carbone Cancer Center	UPMC Hillman Cancer Center	USC Norris Comprehensive Cancer Center	Vanderbilt-Ingram Cancer Center	Wake Forest Baptist Comp. Cancer Center	Winship Cancer Institute of Emory University	Yale Cancer Center	Total
Non-Site-Specific	2		1	4	3	4	4	3	8	1				5	1	25	5		2	1		4	1	1	14	6			3	5	199
Breast	2	1			1		2		2			1		3		7	15		2		1	1		2						21	111
Cervical	5						1				1	1		4		1					1	6							1		44
Stomach or GI	1			1				1		2	1	1		1		4				1							3			1	26
Lung	1			1								1							2	1										1	26
Lymphoma or NHL	1					1		2									2									2					26
Colorectal	2			1			1					1				1		1	1								1			1	25
Prostate	1			1			1				1						1		1			1				1	1				23
Leukemia	1							3			1	1					1									1					20
Ovarian				1					1	2				1					1				1							2	19

Figure 27. Project Collaborator World Regions by NDCC

Institution	Abramson Cancer Center	Albert Einstein Cancer Center	Alvin J. Siteman Cancer Center	Barbara Ann Karmanos Cancer Center	Case Comprehensive Cancer Center	City of Hope Comprehensive Cancer Center	Cold Spring Harbor Laboratory Cancer Center	Dan L. Duncan Comprehensive Cancer Center	Dana-Farber/Harvard Cancer Center	Dartmouth-Hitchcock Norris Cotton Cancer Center	David H. Kock Institute for Integrative Cancer Center	Duke Cancer Institute	Fox Chase Cancer Center	Fred and Pamela Buffett Cancer Center	Fred Hutch/UW Cancer Consortium	Georgetown Lombardi Comp. Cancer Center	H. Lee Moffitt Cancer Center and Research Inst.	Herbert Irving Comprehensive Cancer Center	Holden Comprehensive Cancer Center	Huntsman Cancer Institute	Indiana University Melvin & Bren Simon Cancer Center	Jonsson Comprehensive Cancer Center	Laura and Issac Perlmutter Cancer Center at NYU Langone	Markey Cancer Center	Masonic Cancer Center	Mayo Clinic Cancer Center	Mays Cancer Center	MD Anderson Cancer Center	Memorial Sloan Kettering Cancer Center	Moores Comprehensive Cancer Center	OHSU Knight Cancer Institute	O'Neal Comprehensive Cancer Center at UAB	Purdue University Center for Cancer Research	Roswell Park Cancer Institute	Rutgers Cancer Institute of New Jersey	Sanford Burnham Prebys Med. Disc. Inst.	Sidney Kimmel Cancer Center at TJU	Sidney Kimmel Comprehensive Cancer Center	St. Jude Children's Research Hospital	Stanford Cancer Institute	Stephenson Cancer Center	The Ohio State University Comp. Cancer Center	The University of Virginia Cancer Center	The Wistar Institute Cancer Center	Tisch Cancer Institute	UC Davis Comprehensive Cancer Center	UCSF Hellen Diller Family Comp. Cancer Center	University of Chicago Comp. Cancer Center	University of Colorado Cancer Center	University of Hawaii Cancer Center	University of Kansas Cancer Center	Univ. of Maryland Greenbaum Comp. Cancer Center	University of Michigan Comp. Cancer Center	University of New Mexico Comp. Cancer Center	University of Wisconsin Carbone Cancer Center	UPMC Hillman Cancer Center	USC Norris Comprehensive Cancer Center	Vanderbilt-Ingram Cancer Center	Wake Forest Baptist Comp. Cancer Center	Winship Cancer Institute of Emory University	Yale Cancer Center	Total
East Asia & Pacific	2	1		1	5	17			1			1	4		2		5					5			1		1	23	1		8				5		3		6	1	13	3	1				3	5	1	7			8		2	3	4	1	1	3	6	154
Europe & Central Asia		1		2	2	9							10		1	1	10		1	1		1	1	1	1	1		12			9	2	1		1	4		1	2	1	2	3			1	1	6	1	2	4	1		1			9	4		2	1	16	131
Latin America & Caribbean	1	1			1	6			2	6			2		3	1	5					4			1		1	21		2			1	1			2	1	11			2	1		2		2	1		1	2		7		1		1	3		4	2	102
Middle East & North Africa					1	7	1		1				4				2											5	4			1	1		1		1	3	1						1		2	1									1	1		1	1	41
North America	2	1	1	2	5	14	1	1			2	1	11		2		1	1		2			1	1	2	1		2	1		2	3	1		1		1	2		1	13	2			5		24	2	2	1	1	2	11	1	1		2		2	1	3	139
South Asia	1				1								1				1					1					1	3				3			2							1					5	3		1						2					2	28
Sub-Saharan Africa	1	1	1	1		3		7	1	1		3	1		6		1	2			9		1			1		12	13	1		3	1					3	1	11					10		23	11				2	2	1	1		1			1	5	142

Figure 28. Projects by Collaborator Country Type (HIC vs LMIC)

Institution	Abramson Cancer Center	Albert Einstein Cancer Center	Alvin J. Siteman Cancer Center	Barbara Ann Karmanos Cancer Center	Case Comprehensive Cancer Center	City of Hope Comprehensive Cancer Center	Cold Spring Harbor Laboratory Cancer Center	Dan L. Duncan Comprehensive Cancer Center	Dana-Farber/Harvard Cancer Center	Dartmouth-Hitchcock Norris Cotton Cancer Center	David H. Kock Institute for Integrative Cancer Center	Duke Cancer Institute	Fox Chase Cancer Center	Fred and Pamela Buffett Cancer Center	Fred Hutch/UW Cancer Consortium	Georgetown Lombardi Comp. Cancer Center	H. Lee Moffitt Cancer Center and Research Inst.	Herbert Irving Comprehensive Cancer Center	Holden Comprehensive Cancer Center	Huntsman Cancer Institute	Indiana University Melvin & Bren Simon Cancer Center	Jonsson Comprehensive Cancer Center	Laura and Issac Perlmutter Cancer Center at NYU Langone	Markey Cancer Center	Masonic Cancer Center	Mayo Clinic Cancer Center	Mays Cancer Center	MD Anderson Cancer Center	Memorial Sloan Kettering Cancer Center	Moores Comprehensive Cancer Center	OHSU Knight Cancer Institute	O'Neal Comprehensive Cancer Center at UAB	Purdue University Center for Cancer Research	Roswell Park Cancer Institute	Rutgers Cancer Institute of New Jersey	Sanford Burnham Prebys Med. Disc. Inst.	Sidney Kimmel Cancer Center at TJU	Sidney Kimmel Comprehensive Cancer Center	St. Jude Children's Research Hospital	Stanford Cancer Institute	Stephenson Cancer Center	The Ohio State University Comp. Cancer Center	The University of Virginia Cancer Center	The Wistar Institute Cancer Center	Tisch Cancer Institute	UC Davis Comprehensive Cancer Center	UCSF Hellen Diller Family Comp. Cancer Center	University of Chicago Comp. Cancer Center	University of Colorado Cancer Center	University of Hawaii Cancer Center	University of Kansas Cancer Center	Univ. of Maryland Greenbaum Comp. Cancer Center	University of Michigan Comp. Cancer Center	University of New Mexico Comp. Cancer Center	University of Wisconsin Carbone Cancer Center	UPMC Hillman Cancer Center	USC Norris Comprehensive Cancer Center	Vanderbilt-Ingram Cancer Center	Wake Forest Baptist Comp. Cancer Center	Winship Cancer Institute of Emory University	Yale Cancer Center	Total
HIC Country Collaborator	2	3	1	3	5	31	1	1			2	2	18		3		11	1	1	3			1	1	4	1		26	3		14	4	1		3	3	3	3	7	2	13	4	1	1	5	1	26	6	3	9	2	2	11	1	3	8	6	1	2	3	23	295
LMIC Country Collaborator	5	2	1	1	3	18		7	5	7		4	8		8	2	13	3			9	11	1		1	1	3	41	18	3	4	8	1	1	6	1	5	5	13	11	12	3	1		13		33	14		5	2	2	16	1	2	6	3	3		6	8	360

Two-Way Analysis Tables

Figure 29. Projects by Project Type and Collaborator World Region

	East Asia & Pacific	Europe & Central Asia	Latin America & Caribbean	Middle East & North Africa	North America	South Asia	Sub-Saharan Africa
Research	131	105	75	30	114	16	86
Capacity Building or Training	47	31	39	12	33	12	69
Clinical Trials	12	11	8	3	9	2	6
Implementation	7	5	14	3	11		14
Network or Working Group	6	9	6	3	7	2	6
Pathology	2	2	4		5	1	12
Registries	9	3	8	1	6	2	6
Screening	8	6	16	3	17	4	21

Legend
20 or more projects
19 or fewer projects

Figure 30. Projects by Project Type and Project Funding Source

	Industry	Institutional	Non-Profit	Other	Unfunded	Not Provided
Research	21	191	102	73	26	77
Capacity Building or Training	15	88	51	23	11	33
Clinical Trials	4	11	16	5	3	4
Implementation	3	21	15	2	1	4
Network or Working Group	2	15	8	1	2	7
Pathology		13	6		3	1
Registries		14	3	4	1	5
Screening	4	21	12	5	4	10

Figure 31. Projects by Project Type and CSO Code

	Biology	Etiology	Prevention	Early Detection	Treatment	Cancer Control
Research	191	79	96	136	154	101
Capacity Building or Training	26	22	49	80	115	65
Clinical Trials	12	3	9	7	29	8
Implementation	2	2	9	16	24	10
Network or Working Group	6	2	6	8	19	13
Pathology	3	3	1	18	5	2
Registries	4		3	9	5	16
Screening	4	4	31	50	12	11

Figure 32. Projects by Project Type and Cancer Site

	Non-Site-Specific	Breast	Cervical	Stomach or GI	Lymphoma or NHL	Prostate	Colorectal	Lung	Leukemia	Ovarian
Research	128	97	31	20	22	23	24	25	16	16
Capacity Building or Training	100	23	17	6	4		3	4	5	5
Clinical Trials	5	10	3	2	5	2	1	1	2	1
Implementation	13	7	4	1	1		2		3	1
Network or Working Group	9	3	2	1	1	2		1	2	1
Pathology	11	5	1	1	1				1	
Registries	9	1	1	1	1	1	2	1	2	1
Screening	11	12	24		1	2	4		1	

Figure 33. Projects by CSO Code and Collaborator World Region

	East Asia & Pacific	Europe & Central Asia	Latin America & Caribbean	Middle East & North Africa	North America	South Asia	Sub-Saharan Africa
Biology	69	62	18	12	51	7	28
Etiology	23	21	17	6	22	6	20
Prevention	23	18	33	6	23	8	33
Early Detection	43	25	36	7	41	11	70
Treatment	61	51	41	22	44	7	65
Cancer Control	30	17	35	7	23	6	43

Figure 34. Projects by CSO Code and Cancer Site

	Non-Site-Specific	Breast	Cervical	Stomach or GI	Lymphoma or NHL	Prostate	Colorectal	Lung	Leukemia	Ovarian
Biology	52	47	4	5	8	5	9	10	3	11
Etiology	23	27	3	7	4	4	6	10	3	1
Prevention	47	26	23	9	2		6	6	3	5
Early Detection	47	57	30	7	5	4	7	6	6	8
Treatment	78	40	17	8	11	10	5	8	15	8
Cancer Control	58	22	9	3	8	6	2	7	8	5

Figure 35. Projects by Cancer Site and Collaborator World Region

	East Asia & Pacific	Europe & Central Asia	Latin America & Caribbean	Middle East & North Africa	North America	South Asia	Sub-Saharan Africa
Non-Site-Specific	52	38	31	10	38	11	47
Breast	11	28	11	5	18	1	43
Cervical	4	4	17		13	4	20
Stomach or GI	9	2	6	2	8	1	5
Lymphoma or NHL	5	7	4	2	4		6
Prostate	5	4	2	3	7	1	4
Colorectal	8	4	3	2	5	1	6
Lung	11	8	2	1	4		
Leukemia	9	4	5	4	7		4
Ovarian	6	4	2	1	3	2	4

Figure 36. Projects by CSO Code and Collaborator Income Group

	Projects with HIC Collaborators	Projects with LMIC Collaborators
Biology	128	95
Etiology	43	57
Prevention	43	86
Early Detection	75	136
Treatment	110	141
Cancer Control	51	95

Figure 37. Projects by Cancer Site and Collaborator Income Group

	Projects with HIC Collaborators	Projects with LMIC Collaborators
Non-Site-Specific	82	123
Breast	52	59
Cervical	20	36
Stomach or GI	14	19
Lymphoma or NHL	14	11
Prostate	13	9
Colorectal	10	17
Lung	10	15
Leukemia	10	11
Ovarian	7	10

Annex III: Global Oncology Program Survey

Global Oncology Programs and Training Opportunities at NCI-Designated Cancer Centers

This is a joint survey from the American Society of Clinical Oncology (ASCO) and the National Cancer Institute Center for Global Health (NCI/CGH). It is designed to record the global oncology programs and projects at your Cancer Center, to inform both the Cancer Center community and the larger global oncology community.

This survey will assist us in creating a report of global oncology activities and training programs that can be shared with NCI, ASCO, and the NCI-Designated Cancer Center network. We hope this forthcoming synthesis report will be a valuable tool for Cancer Centers to learn about projects happening around the world, find new areas for collaboration, reduce duplicative efforts, and identify gaps in international and domestic cancer work as well as gaps in global oncology training programs.

The information provided in this survey is voluntary. Thank you for participating.

1. Email address:
2. Cancer Center Name:
3. Respondent Name:

Global Oncology Programs at Your Cancer Center

This module will ask about global oncology programs at your Cancer Center, faculty participation in global oncology programs, and global oncology training opportunities at your Cancer Center. This module is best answered by someone who leads or coordinates these programs.

For the purposes of this survey, we use the terminology "global oncology programs" to include both "global oncology" and/or "global health" activities."

4. Does your Cancer Center currently include a "Global Oncology" program?
   - ☐ Yes
   - ☐ No

5. Please briefly describe the global oncology program at your Center. [For example, "our program involves a lecture series about global oncology" or "our program supports training and research in global medical and nursing oncology."]

6. Does your global oncology program have an identified leader?
   - ☐ Yes
   - ☐ No

Please provide the contact information for the Global Oncology program leader at your Cancer Center.

7. Name:
8. Position:
9. Email Address:
10. Phone Number:

Faculty Participation in Global Oncology Programs at Your Cancer Center

11. How many faculty members in your Cancer Center participate in your global oncology program?
    - ☐ 0
    - ☐ 1-5
    - ☐ 6-10
    - ☐ 11-15
    - ☐ 15-20
    - ☐ 20-25
    - ☐ 26-30
    - ☐ 30+
    - ☐ Other: _____

12. Of the faculty who participate in global activities, what proportion receive: External research grant support to do this work?
    - ☐ 0%
    - ☐ 1-5%
    - ☐ 6-10%
    - ☐ 11-15%
    - ☐ 16-25%
    - ☐ 51-75%
    - ☐ 76-100%

13. Of these faculty who participate in global activities, what proportion receive: Support from the Cancer Center administrative funds to do this work?
    - ☐ 0%
    - ☐ 1-5%
    - ☐ 6-10%
    - ☐ 11-15%
    - ☐ 16-25%
    - ☐ 51-75%
    - ☐ 76-100%

Global Oncology Training Opportunities at Your Cancer Center

14. Do trainees have opportunities in global oncology as part of their training at your Cancer Center?
    - ☐ Yes
    - ☐ No

15. Do you provide formal lectures/education on global oncology?
    - ☐ Yes
    - ☐ No

16. If yes, which specialty training programs participate? Please check all that apply.
    - ☐ Medical oncology/hematology-oncology
    - ☐ Radiation oncology
    - ☐ Surgical oncology
    - ☐ Pediatric oncology
    - ☐ Pathology
    - ☐ Radiology
    - ☐ Other: _____

17. What is the estimated number of hours of education in global oncology that your Cancer Center provides its trainees in a year?

18. What estimated proportion (i.e. percent) of your trainees do rotations outside the United States?

19. What is the estimated number of trainees enrolled at your Cancer Center from low- and middle-income countries (LMICs) each year?

20. Do you have other interactions with trainees from LMICs (observerships, in-country trainings, etc.)?
    - ☐ Yes
    - ☐ No

21. Please describe the other interactions your Cancer Center has with trainees from LMICs (observerships, in-country trainings, etc.).

22. Is there an interest among your trainees in pursuing global oncology as part of their career?

Training Program	Yes	No	Unknown	Not Applicable
Medical oncology	☐	☐	☐	☐
Hematology oncology	☐	☐	☐	☐
Radiation oncology	☐	☐	☐	☐
Surgical oncology	☐	☐	☐	☐
Pediatric oncology	☐	☐	☐	☐
Pathology	☐	☐	☐	☐
Radiology	☐	☐	☐	☐
Other	☐	☐	☐	☐

23. If you responded 'Other' above, please specify the name of the specialty training program.

Thank you for participating in the NCI/ASCO NCI-Designated Cancer Centers Global Oncology Programs and Projects Survey.

Annex IV: Global Oncology Projects Survey

Global Oncology Projects led by NCI-Designated Cancer Centers

This is a joint survey from the American Society of Clinical Oncology (ASCO) and the National Cancer Institute Center for Global Health (NCI/CGH). It is designed to record the global oncology programs and projects at your Cancer Center, to inform both the Cancer Center community and the larger global oncology community.

This survey will assist us in creating a report of global oncology activities and training programs that can be shared with NCI, ASCO, and the NCI-Designated Cancer Center network. We hope this forthcoming synthesis report will be a valuable tool for Cancer Centers to learn about projects happening around the world, find new areas for collaboration, reduce duplicative efforts, and identify gaps in international and domestic cancer work as well as gaps in global oncology training programs.

The information provided in this survey is voluntary. Thank you for participating.

1. Respondent Name:
2. Cancer Center Name:

Project Submission Form

Use this form to record global oncology research or cancer projects which your Cancer Center leads or in which it participates. Projects should be entered one at a time. If you would like to submit an additional project, please select "submit another response" at the end of this survey.

This survey will be used to develop a report of global oncology activities that can be shared with the NCI-Designated Cancer Center community.

Please use this section to record information about the project. Projects may include grants, programs, trainings/workshops or events.

3. Project Title:

4. Project Summary/Abstract [Please enter a brief description of your project. You may also copy and paste the project abstract here.]:

5. Type of Project [Check all that apply.]:
   - ☐ Research
   - ☐ Training
   - ☐ Capacity Building
   - ☐ Other: _____

6. Cancer Site(s):

   Please identify one or more cancer sites of focus for your project. Projects that address many cancer types or are not specific to a particular cancer site may be coded as "Non-Site-Specific."

   - ☐ Non-Site-Specific
   - ☐ Adrenocortical Cancer
   - ☐ Anal Cancer
   - ☐ Bladder Cancer
   - ☐ Bone Cancer, Osteosarcoma
   - ☐ Brain Tumor
   - ☐ Breast Cancer
   - ☐ Cervical Cancer
   - ☐ Colon and Rectal Cancer
   - ☐ Ear Cancer
   - ☐ Endometrial Cancer
   - ☐ Esophageal/Oesophageal Cancer
   - ☐ Eye Cancer
   - ☐ Gallbladder Cancer
   - ☐ Head and Neck Cancer
   - ☐ Heart Cancer
   - ☐ Hodgkin's Disease
   - ☐ Kidney Cancer
   - ☐ Laryngeal Cancer
   - ☐ Leukemia
   - ☐ Liver Cancer
   - ☐ Lung Cancer
   - ☐ Melanoma
   - ☐ Myeloma
   - ☐ Neuroblastoma
   - ☐ Non-Hodgkin's Lymphoma
   - ☐ Oral Cavity and Lip Cancer
   - ☐ Ovarian Cancer
   - ☐ Pancreatic Cancer
   - ☐ Penile Cancer
   - ☐ Pharyngeal Cancer
   - ☐ Prostate Cancer
   - ☐ Retinoblastoma
   - ☐ Salivary Gland Cancer
   - ☐ Sarcoma
   - ☐ Skin Cancer
   - ☐ Stomach Cancer
   - ☐ Testicular Cancer
   - ☐ Thyroid Cancer
   - ☐ Vaginal Cancer
   - ☐ Wilms Tumor
   - ☐ Other: _____

7. Common Scientific Outline (CSO) Codes:
   Please identify one or more codes for your project. CSO codes describe the research area(s) of focus for your project. More information about the CSO codes can be found here: https://icrpartnership.org/cso.
   - ☐ Biology
   - ☐ Etiology
   - ☐ Prevention
   - ☐ Early Detection, Diagnosis, and Prognosis
   - ☐ Treatment
   - ☐ Cancer Control, Survivorship, and Outcomes Research

8. Project Start Date
   Please specify a month and year for the project start date [*Example: December 15, 2012*]:

9. Project End Date
   Please specify a month and year for the project end date [*Example: December 15, 2012*]:

10. Is this project NIH-funded? (Please indicate whether or not your project received NIH funding.)
    - ☐ Yes
    - ☐ No

11. If the project is not NIH-funded, please list funding source(s):

12. Grant/Project Number:
    If your project has a grant or project number from a funding institution, please record the number here.

13. Principal Investigator Name:

14. Principal Investigator Email:

15. Principal Investigator Institution:

16. Principal Investigator Institution City:

17. Principal Investigator Institution Country:

18. Does your project focus on childhood cancers?
    - ☐ Yes
    - ☐ No

19. Geographic Focus:
    Please include a short description of your project's geographic area of focus. For example, "Kenya and Uganda."

20. Does your project have any collaborating partners? Please include U.S.-based and international collaborators.
    - ☐ Yes *Skip to question 22.*
    - ☐ No *Skip to question 21.*

21. Do you have any additional international projects to submit?
    - ☐ Yes *Skip to question 3.*
    - ☐ No *Stop filling out this form.*

Collaborating Partner #1

Please use this section to record collaborating partners for your project (US-based and international partners). These individuals should play a leadership role in your project (up to 20 collaborators). Please record one collaborator at a time.

22. Collaborator Name:

23. Collaborator Email:

24. Collaborator Institution:

25. Collaborator Institution City:

26. Collaborator Institution Country:

27. Do you have additional collaborating partners to submit?

    ☐ Yes
    ☐ No *Stop filling out this form.*

Thank you for participating in the NCI/ASCO NCI-Designated Cancer Centers Global Oncology Programs and Projects Survey.

NATIONAL CANCER INSTITUTE

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