Understanding PhD Career Pathways for Program Improvement: A Survey Implementation Guide for Doctoral Institutions

Updated
March 20, 2017

This update replaces the Survey Implementation Guide for Doctoral Institutions released on Jan 11, 2017.

*Please note: The RFP process is now closed, but this information may be helpful for institutions considering joining the project as an affiliate.

Additional Documents in this series:

- CGS Career Pathways Alumni Survey
- CGS Career Pathways Student Survey

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Understanding PhD Career Pathways for Program Improvement

The selection process for the awards has ended, but if you wish participate in the project as an affiliate and implement the surveys on your own campus, please contact Jeff Engler.

DESCRIPTION	*Understanding PhD Career Pathways* is a project to **implement the CGS-developed PhD Career Pathways surveys** in humanities and/or STEM programs at 15 U.S. doctoral-granting institutions. Qualifying institutions may apply to CGS for grants of $30,000 (humanities) and/or $50,000 (STEM). Combined proposals ($80,000 total) are encouraged.
PURPOSE	To **help graduate schools collect data** regarding the career pathways of PhDs that can be used to improve the educational experiences and career preparation of PhD students; to **identify best practices** in survey implementation.
SURVEYS	**Student**: Captures career aspirations and program experiences; Administered to current PhD students in years 2 and 5. **Alumni**: Captures snapshots of current positions and recent transitions, satisfaction with degree, skills needed for career; Administered to PhD alumni 3, 8, and 15 years since graduation.
INTENDED DATA USERS	Primary intended users of these data are **graduate deans and graduate school staff**, in collaboration with other stakeholders, including: o graduate program directors o Offices of institutional research o Offices of the president and/or provost o Department and program faculty and students o Career centers and alumni offices CGS will also collect data from all participating institutions.
FUNDERS	Grants to universities will be administered by CGS, supported by funding from The Andrew W. Mellon Foundation and National Science Foundation (#1661272). Survey development was supported by the Alfred P. Sloan Foundation, The Andrew W. Mellon Foundation, and National Science Foundation (#1534620).
Key Dates	**March 31, 2017** Letter of Intent due **May 1, 2017** Application due **June 2017** Decisions announced **July 1, 2017** Grant period begins **June 30, 2019** Grant period ends (humanities) **June 30, 2020** Grant period ends (STEM)

How to Use this Guide

This document is intended to guide institutions preparing proposals for in the CGS project *Understanding PhD Career Pathways for Program Improvement*. It is one of several supplementary documents that accompany a Request for Proposals to CGS member institutions to participate in a multi-institution data- collection project to field two CGS-developed surveys.

This guide is designed to:

- Provide advice regarding important considerations for institutions preparing proposals to participate in the CGS project *Understanding PhD Career Pathways for Program Improvement*.
- Outline data collection requirements for the project.
- Provide the essential methodological requirements for graduate schools and key institutional stakeholders to implement the CGS PhD Career Pathways Surveys in ways that inform program improvement.
- Enable institutions to develop implementation plans suited to their own missions, cultures, and needs.
- Accommodate a variety of institutional types and PhD program structures.
- Stimulate thinking about what practices for data collection and use might work best in an institution's particular context.
- Provide the guidelines for reporting data to CGS.

On page A1 of this guide, you will find a one-page summary of this project intended to be shared with colleagues who may be interested, or who will participate in drafting a proposal to CGS.

Project Purposes and Goals

The CGS PhD Careers Pathways project seeks to **help graduate schools collect data** regarding the career pathways of PhDs that can be used to improve the educational experiences and career preparation of PhD students. This project has evolved through several phases. A feasibility study (2014) identified the need for more granular PhD career pathways information (Allum, Kent & McCarthy, 2014). An instrument design phase (2015-2015) resulted in two survey instruments, one for current PhD students on career aspirations, and the other for PhD alumni on career pathways. The current implementation phase (2016 – 2019) is designed to identify best practices in survey implementation and to generate aggregate data on PhD career pathways.

To view the surveys:*

See Attachment B: CGS Career Pathways **Alumni** Survey
and Attachment C: CGS Career Pathways **Student** Survey

*Please note that the surveys were updated March 20, 2017.

The CGS PhD Career Pathways surveys are designed to:

- Be administered by graduate schools or graduate programs
- Capture the career aspirations and program experiences of 2nd and 5th-year PhD students.
- Capture snapshots of PhD alumni career progression from matriculation through 15 years past graduation in STEM (including social sciences) and humanities fields.
- Complement existing federal datasets such as the Survey of Earned Doctorates (SED) and Survey of Doctorate Recipients (SDR) as well as those assembled by the Association of American Universities Data Exchange (AAUDE), and individual institutions.
- Allow institutions the flexibility to add their own customized question items.

In developing the two PhD Career Pathways survey instruments, CGS worked with a diverse group of stakeholders to identify key purposes and goals that would productively inform the collection and use of data about PhD career pathways at the institution and program level. These groups identified a wide range of benefits of collecting such data, giving particular attention to the ways that this information might inform program improvement. Page A4 summarizes some of the main benefits these groups identified.

Potential Benefits of Collecting PhD Career Pathways Data

Institutional- and program-level PhD career information may:

Help Graduate Schools

- Assess and improve programs,
- Change cultures to embrace diverse career development,
- Develop missions and advance institutional goals,
- Understand the valuable work alumni do in various sectors, and
- Advocate for the importance of graduate education.

Help Faculty

- Identify and articulate program goals,
- Develop curricula aligned with student career aspirations and workforce needs,
- Provide better mentorship,
- Understand the workforce contributions of their students across a variety of employment sectors, and
- Assess the influence of their programs on their students' career trajectories.

Help Graduate Students

- Make better-informed selection of PhD programs,
- Benefit from improved programs and mentorship
- Better understand how their academic aspirations link to their long-term career prospects,
- Identify pathways into a more diverse range of careers,
- Prepare for a range of careers, and
- Persist in a program they may otherwise have left because they did not fully understand the range of career options available to them with a doctorate.

What do we mean by *program improvement*?

Throughout this guide, the term *program improvement* refers to any change that would enhance the experience of a PhD student. These might be curricular, co- or extra-curricular, or structural changes, and may include those experiences that take place outside a primary department. We nevertheless use the term *program improvement* in recognition of the fact that the program or department is the environment most influential to a student's overall educational experience. We outline below four major dimensions in which career pathways data have the potential to improve student experiences of PhD programs.

Multiple Definitions of Career Success

PhD programs vary significantly by discipline and mission, but any successful program acknowledges multiple possible definitions of career success. Data on PhD career aspirations and pathways have the potential to help programs articulate expanded yet program-specific views of career pathways on websites, and in coursework, student materials, mentoring conversations, and other program-related activities.

Curricular and Professional Development Opportunities

Data on PhD careers enable departments and programs to bring their offerings into better alignment with the careers that are ultimately sought by their students and alumni. Improving professional preparation may involve rethinking degree requirements such as the qualifying exam, the dissertation, or coursework, and providing information to students about co-curricular and extra-curricular opportunities and internships that can supplement career preparation.

Mentoring for Varied Career Pathways

Better information about PhD career pathways at the program level can help programs develop and inform mentoring structures. For example, career data might be used to help raise faculty awareness of various viable careers for PhDs, provide mentors with resources they can share with students seeking careers in various sectors, and lead to opportunities for co-mentorship by a faculty member or other appropriate individual outside a student's home department.

Improving Career Services

Offices of Career Services and other central offices that provide career planning support sometimes have a reputation for best serving undergraduate students; at the graduate level, career services may be seen as the domain of programs. Better career data on PhDs can help Career Services offices and graduate schools develop appropriate services for doctoral students to supplement the guidance they receive from departments.

I. Planning for Data Collection

Developing a Strategy

A long-term strategy developed in conversation with key groups on campus is essential to any successful data-collection effort. The following broad questions are designed to help institutional teams develop a strategy for implementing the surveys and for using resulting data.

1. How does the collection of PhD career data support the mission and strategic plan of our institution/graduate school/PhD programs?

2. What goals could we accomplish if we had better information about the careers of PhDs—in our programs and in other areas of the institution?

3. Are there risks or challenges that we are likely to encounter in collecting PhD career pathways information? How will we overcome them?

4. Do we have the capacity to get the effort off the ground, or will we need additional support? For example, do we have the infrastructure and statistical support to collect and manage the data?

5. What current efforts exist to provide information on the careers of our PhD alumni? Can this effort be merged with others?

6. Which groups and individuals might serve as allies, even if they are not directly involved?

7. How can we ensure this effort is sustainable? Are there ways to integrate our work into existing university processes?

8. How will we communicate the value of this work to various groups on campus? How in particular can we help create a broader definition (beyond academic careers) of what constitutes career success for PhD alumni?

Institutions submitting a proposal are encouraged to create an Advisory Committee or similar group charged with identifying long-term challenges and approaches to overcoming them.

Planning for Sustainability

Sustaining this data gathering effort is critical to its success. Six tactics that may help ensure that data collection efforts are sustained over time are outlined in the call-out boxes below. Please note that these tactics are not mutually exclusive—several or all of them might be used to address a university's goals—and can be supplemented with other approaches.

CAUTION
Avoid linking calls for information about career aspirations to annual student progress reports, which may signal that a student is being evaluated on the basis of his or her career aspirations. This could seriously bias student responses. Ensure that student confidentiality is protected, and communicate that commitment.

Planning for Sustainability: Tactics

1. Identify **clear goals**.

Identify specific, measurable objectives that your graduate institution would like to realize as a result of this effort. Every aspect of strategic planning and communication with campus and external groups will be more focused when grounded by clear goals.

2. Use survey strategically to address **multiple university needs.**

Data collection efforts that are strategically aligned with selected campus units and institutional priorities are more likely to be sustainable. They can garner credibility not possible in isolation and benefit from a greater pool of resources. What campus units and institutional priorities beyond the improvement of PhD programs might be served by knowing what PhD alumni do long-term?

Examples include:

- improving graduate career services
- increasing alumni engagement in professional development activities for graduate students
- advocacy efforts on behalf of PhD programs
- recruitment of PhD students

3. Tie efforts to funder **requirements** and to **accountability efforts.**

The National Institutes of Health (NIH) requires grant recipients to record doctoral alumni career information 15 years post-graduation. At some institutions, this requirement has helped build faculty support for efforts to collect information on alumni careers. While it is not possible to predict the future requirements of federal funders, it is safe to say that federal and private funders will continue and perhaps increase their demands that institutions and their faculty measure the outcomes of investments in PhD education and training. Highlighting this trend may help planning groups make the case for improved PhD career tracking.

4. Use data to inform **program review.**

Requiring the collection of PhD career data for the process of PhD program review is one approach to ensuring that PhD data are collected across a diverse range of programs. In framing conversations with faculty about using such data in program review processes, it is important for graduate deans to support broad conceptions of successful employment to include careers in the business, non-profit, and government sectors.

Other possible tactics

Tying PhD career pathways information to faculty incentive structures.
In STEM fields, it is common for faculty members to maintain a record of PhD students supervised as part of the curriculum vitae, whereas in the humanities, there may be more skepticism about this idea. Making PhD completion rates and career satisfaction of alumni a part of faculty evaluations will require careful consideration in the context of different institutions and disciplines. This approach clearly requires collaboration with other offices on campus, such as the office of the provost.

Seeking partnerships with external entities.
A number of institutions currently collecting career information on their doctoral alumni have developed partnerships with consultants and companies that provide support in procuring email contact lists, "scraping" data from social media sites, or tracking faculty's records of placing students in academic positions and their mentees' peer-reviewed publications. While the data resulting from such approaches may be less reliable, data scraping may be one part of a more comprehensive strategy for collecting information on PhD alumni.

Collaboration and Communication on Campus

To ensure PhD data collection strategically addresses multiple campus needs, project leaders must communicate with key stakeholder groups on campus. Graduate deans and graduate schools are particularly well-positioned to lead in this area because they often hold primary responsibility for the quality of PhD programs on campus and can build alliances with programs as well as central offices. The following table suggests some important campus groups and some potential actions to engage them in the process.

Campus Group	Possible Actions
SENIOR ACADEMIC LEADERS	Identify ways that collection of PhD career pathways information aligns with strategic institutional goals. Identify multiple ways that resulting data could serve the institution's interests. Enlist support and/or public endorsement of efforts to collect PhD career pathways information.
ACADEMIC UNITS	Communicate the values and principles motivating data collection and goals of the effort. Clearly communicate any requirements and expectations surrounding survey implementation. Gather input on sharing and using the survey data with faculty, staff (especially at centers, such as humanities centers), and alumni.

ACADEMIC UNITS *(continued)*	Identify ways that collection of PhD career pathways information aligns with strategic program goals, and how it might be incorporated into program review. Plan to report to faculty findings of data collected in a timely way.
PHD STUDENTS	Create a "culture" of data collection and feedback with students by asking early and often about careers. Gather students' input on sharing and using the survey data. Include students in the planning process. Report to students findings of data collected in a timely way.
INSTITUTIONAL RESEARCH OFFICES	Collaborate to avoid multiple or overlapping surveys on PhD career pathways information. Explore ways to integrate survey questions into existing data collection efforts. Review schedules to avoid competing with other surveys. Collaborate on plans for archiving, analyzing, and sharing data.
ALUMNI OFFICE	Explore ways PhD career data could enhance the activities of the alumni office. Collaborate to assemble alumni contact information. Ask what is already known about PhD alumni career pathways. Avoid competing with other alumni surveys.
CAREER OFFICE	Explore ways PhD career data could enhance the activities of the career office. Ask what is already known about PhD student and alumni career pathways. Avoid competing with other student or alumni surveys.

To build a successful network of collaborators, institutions may choose to assign specific actions to specific campus units, a strategy intended to utilize their expertise and motivations in ways that help facilitate the collection of PhD career pathways information.

Graduate schools may also wish to strategically engage the group that will be the current and future source of data on PhD programs: PhD students themselves. Asking PhD students for their

input on career preparation while they are still enrolled in graduate school not only sends the message that the institution values and supports their careers; it also helps students establish a habit of responding to requests for information from the graduate school. One way of accomplishing this is by accompanying the student survey with an annual letter from the graduate dean.

II. Guidelines for Data Collection

The *PhD Career Pathways* surveys are designed as a census of PhD students and PhD alumni, and are cross-sectional surveys. Although the questionnaires are designed as cross-sectional surveys, institutions may analyze survey data longitudinally by using voluntarily released student ID numbers. Given the fact that such an approach has a potential to offer deeper insights into changes in career aspirations and job placements over time, it is in fact encouraged.

Resulting data aim to offer insights into career aspirations, outcomes, and professional development experiences of PhD students and alumni and are intended as a tool and resource for program improvement in doctoral education.

Survey Questionnaires

The **PhD Alumni Survey** (Attachment B) aims to gather current and prior occupations and PhD student experience of PhD alumni. The questionnaire includes four sections: (1) Screening, information about an earned doctorate; (2) Current employment status and primary job; (3) other current jobs; (4) Immediate prior primary occupation; (5) PhD experience; (6) Demographic information; and (7) Voluntary release of student ID for longitudinal and other additional analysis by institutions.

The **PhD Student Survey** (Attachment C) aims to gauge career aspirations and engagement in professional development opportunities of current PhD students. The questionnaire includes six sections: (1) Screening, Current PhD Program, and Funding Support; (2) Career aspirations; (3) Professional development; (4) Demographic Information; and (5) Voluntary release of student ID for longitudinal and other additional analysis by institutions.

Institutions may administer these questionnaires in online survey platforms of their choices (e.g., Qualtrics, SurveyMonkey, native survey platform, etc.); however, all skip logic, loop, and page break instructions should be incorporated. Also, institutions may add additional institution-specific questions; however, those additional questions should not substantially alter the length of the surveys, which are approximately 19 minutes for the PhD Alumni Survey and 7 minutes for the PhD Student Survey. **No item included in the CGS questionnaires may be removed.**

Questionnaire items were developed from various national studies, including but not limited to the National Science Foundation's Survey of Doctorate Recipients (SDR) and the Survey of Earned Doctorates (SED). Some items and response categories from these surveys were included, so that institutions can compare their data against available national data.

Timing of Data Collection and Analysis

Institutions will administer the **PhD Student Survey** to second- and fifth-year PhD students during the **spring term**. The **PhD Alumni Survey** will be administered to three cohorts of doctoral alumni during the **fall term**: those who earned their PhD three years prior, those who earned their PhD eight years prior, and those who earned their PhD 15 years prior. Institutions may set their own specific data collection dates as long as data are collected during the prescribed academic terms. Institutions are encouraged to develop creative recruitment strategies to ensure robust response rates from PhD students and alumni. Institutions participating in this

study are **required to report to CGS de-identified, individual-level data** derived from your institution's required data-collection efforts. Specific alumni and student cohort information, as well as due data for deidentified micro datasets for each wave of data collection efforts are listed below:

Alumni Survey #1: Fall 2017
Send to alumni who earned their doctorates between:

- July 1, 2001 and June 30, 2002;
- July 1, 2008 and June 30, 2009 and
- July 1, 2013 and June 30, 2014.

Deidentified individual-level micro data tentatively due to CGS by March 1, 2018

Student Survey #1: Spring 2018
Send to current PhD students who began their studies between:

- July 1, 2013 and June 30, 2014 and
- July 1, 2016 and June 30, 2017.

Deidentified student-level micro data tentatively due to CGS by July 1, 2018

Alumni Survey #2: Fall 2018
Send to alumni who earned their doctorates between:

- July 1, 2002 and June 30, 2003;
- July 1, 2009 and June 30, 2010 and
- July 1, 2014 and June 30, 2015.

Deidentified individual-level micro data tentatively due to CGS by March 1, 2019

Student Survey #2: Spring 2019
Send to current PhD students who began their studies between:

- July 1, 2014 and June 30, 2015 and
- July 1, 2017 and June 30, 2018.

Deidentified student-level micro data tentatively due to CGS by July 1, 2019

Alumni Survey #3 (STEM awards): Fall 2019
Send to alumni who earned their doctorates between:

- July 1, 2003 and June 30, 2004;
- July 1, 2010 and June 30, 2011 and
- July 1, 2015 and June 30, 2016.

Deidentified individual-level micro data tentatively due to CGS by March 1, 2020

Student Survey #3 (STEM awards): Spring 2020
Send to current PhD students who began their studies between:

- July 1, 2015 and June 30, 2016 and
- July 1, 2018 and June 30, 2019.

Deidentified student-level micro data tentatively due to CGS by July 1, 2020

Institutional Data Analysis

In addition to submitting deidentified student data for analysis, project partners are expected to analyze their own data in ways that can productively inform doctoral program improvement. Of course, institutions should be cautious when an academic unit or other subcategories have too few respondents, which could lead to the identification of students or alumni.

Resulting findings should be disseminated within a reasonable timeframe. For example, data collected in the fall could be analyzed during the winter and reported on campus in the spring or summer of the following year, before the next survey cycle begins. Timely analysis and dissemination of results reinforce the importance of gathering the information and signal to campus partners, as well as PhD students and alumni, a commitment to high-quality doctoral programs. Once the project has launched, CGS will provide a model data reporting template that can be used for sharing data on campus.

Sending De-identified Individual-Level Data to CGS

As a part of participating in this study, institutions are required to share de-identified, individual-level data from all data collection efforts with CGS. CGS will analyze these data using advanced statistical methods. See the addendum on pp. A16-A21 for further information about this data sharing requirement.

Protection of Human Subjects

Survey participation in this effort is voluntary, and all PhD students and alumni invited to respond to the surveys should be given an opportunity to review and agree or decline to participate via an informed consent procedure.

All data collection efforts associated with this study must comply with the guidelines set forth by their Institutional Review Boards (IRB), as well as appropriate federal, state, and other guidelines and regulations. Sample consent information sheets are attached; however, each institution participating in the study is required to develop a data management plan, as well as to secure and maintain an appropriate IRB approval for the duration of this project. CGS will also apply for IRB approval for its own research activities.

III. Using the Data and Resulting Findings

Developing a Strategy for Using the Data and Resulting Findings

How an institution chooses to use the data collected in the PhD Career Pathways surveys will be determined by its answers to some of the planning phase questions outlined above. Graduate deans should always keep in mind, however, that the primary purpose of the PhD Career Pathways surveys is to inform program improvement. The following two domains relate to program improvement directly and indirectly, and represent areas where institutional data on PhD career outcomes may be useful.

Program Review

Whatever your institution's review cycle, having the most recent data available for analysis and discussion will be enormously valuable. According to *Assessment and Review of Graduate Programs* (Baker, et al. 2011), "the primary purpose of all program review is the improvement of graduate programs." Program review "is forward looking; it is . . . not simply assessment of its current status" (Baker, et al. 2011). Program review questions that might be informed by better PhD career pathways data include:

- How well is the program advancing the state of the discipline or profession?
- How effective is its teaching and training of students?
- To what extent does the program meet the institution's goals?
- How well does it respond to the profession's needs?
- How well does it assess student outcomes and take action to improve based on the assessment data? (Baker, et al. 2011)

In developing plans to use data in program review processes, institutions are encouraged to give particular consideration to how data might be used to make program improvements in areas determined to be high-priority by planning project participants. These might include: plans for encouraging departments to better define and support definitions of career success; using data to improve curricula and professional development opportunities offered by the program; strengthening or expanding mentoring structures; defining and clarifying program mission; and improving or supplementing career services offered by programs.

Throughout the planning project, CGS heard that anonymized data generated by PhD career pathways data collection efforts should be communicated to faculty soon after analysis, to give them context for their teaching and mentoring work. The annual student survey is intended to provide immediate feedback for programs and enable them to make mid-course adjustments. For example, using information about student career aspirations, programs might be able to change the way they approach formal and informal conversations with graduate students about career preparation, and possibly recognize a need to expose students to a more diverse range of careers. Care must be taken, however, to protect students' anonymity, especially in small programs or for populations of students who are underrepresented.

Works Cited

Allum, J.A., Kent, J.D., & McCarthy, M.T. (2014). Understanding PhD Career Pathways for Program Improvement. Washington, DC: Council of Graduate Schools. Retrieved from http://cgsnet.org/ckfinder/userfiles/files/CGS_PhDCareerPath_report_finalHires.pdf

Baker, M.J., Carter, M.P., Larick, D.K., & King, M.F. (2011). Assessment and Review of Graduate Programs. Washington, DC: Council of Graduate Schools. Retrieved from http://cgsnet.org/publication-pdf/2431/assessment_and_review_2011.pdf

Addendum: Additional Guidance for Data Sharing Requirement

Understanding PhD Career Pathways for Program Improvement
Council of Graduate Schools

Per the Request for Proposals issued on January 11, 2017 and updated on March 20, 2017, each university selected as a project partner by the Council of Graduate Schools (CGS) for the CGS project *Understanding PhD Career Pathways for Program Improvement* (hereafter referred as "the project") will plan and implement the CGS Career Pathways PhD Alumni Survey and Student Survey based on the CGS Implementation Guide for PhD Career Pathways Surveys. Also, as a condition of participation in the project, each project partner is expected to share with CGS de-identified, individual data derived from the data gathered via the required data collection efforts. The purpose of this guidance is to provide further clarification for this data sharing requirement.

Intellectual Property Rights
Each project partner owns intellectual property rights of the student and alumni survey data collected as a part of this project at respective institutions.

IRB Approval and Care for Human Subjects
Since each project partner independently administers the student and alumni surveys, each is required to obtain and maintain appropriate local-level IRB approvals for the duration of project participation. CGS will obtain and maintain a sponsor-level IRB approval to ensure the overall scope of the study, as well as CGS's research activities, are in compliance with all applicable laws and regulations regards to care of human subjects.

Scope and Purpose of Data Sharing
For the purpose of data sharing, each project partner will act as a licensure of the data owned by them. CGS (or its designated researchers) will act as a licensee, and use the shared data for specific purposes. Individual-level survey data shared by project partners will be used for the purpose of addressing the below five domains of inquiry. These domains of inquiry are a part of the overall project and CGS's commitments to its funders. CGS will address these questions by aggregating and analyzing the Alumni and Student Survey data collected by all project partners.

- What are employment and occupational outcomes of PhD alumni?
- What are employment and occupational preferences of PhD students?
- Are there differences in employment and occupational preferences and outcomes by program and institutional contexts?
- Are there differences in aggregated career trajectories of PhD doctoral students and alumni by program- and institutional-contexts?
- What are career constructs of PhD students and alumni?

Data Format
As a condition of project participation, each project partner is expected to share all the individual-level data collected by the prescribed dates specified in the Implementation Guide. All data files to be shared with CGS should be cleaned, coded, and formatted. All data files should

be in .csv format. All individual-level survey responses collected as a part of the required data collection activities should be shared with CGS, except responses to Items 50 "IDPERM" and 51 "SID" in the Alumni Survey and Items 15 "IDPERM" and Items 16 "SID" in the Student Survey. CGS will provide project partners with the survey codebooks and additional instructions for the data file requirements after the awards being made.

NOTE: Although no direct identifiers (e.g., student ID numbers, names, etc.) will be included in shared data files, survey respondents may still be identifiable through and/or by combinations of other identifiers included in the data files (e.g., fields of study, gender, race/ethnicity, etc.). Thus, project partners should clearly indicate in their consent forms that the data will be shared with CGS for its research purposes.

Data Sharing Agreements
CGS will enter into a formal agreement (e.g., a memorandum of understanding) with each project partner concerning data sharing. These documents will outline CGS's obligation to protect the identities and privacy of all survey respondents, as well as CGS's planned use with the shared data files.

Compliance with NSF Data Sharing Policy
Because the project is funded in part by the National Science Foundation (NSF #1661272), any data gathered in this project are expected to be shared with other researchers (NSF Award & Administration Guide Chapter VI.D.4.b). In compliance with the NSF Data Sharing Policy, CGS will develop public-use micro datasets based on the data shared by all participating institutions. These public-use micro datasets will not include any personally-identifiable information and CGS will suppress any responses that may be deemed identifiable.

Also, qualified researchers may request to access aggregated data tables derived from the resulting dataset. A codebook with variable descriptions and descriptive statistics will be made available to the public electronically, along with instructions for requesting the data tables. No personally-identifiable information will be included in user-requested data tables, and aggregated data that may potentially compromise the privacy of respondents due to too few samples will be redacted.

Contact
Please direct all inquiries related to the data sharing requirements to:

Dr. Hironao Okahana
Co-Principal Investigator/Research Director, Understanding PhD Career Pathways for Program Improvement
Assistant Vice President, Research and Policy Analysis
Council of Graduate Schools

Telephone: (202) 696-1560
E-mail: hokahana@cgs.nche.edu

Sample Consent Information Sheet: CGS PhD Career Pathways Student Survey

***Note*: This is a tentative sample consent information sheet, pending a sponsor-level IRB approval. Each project partner is responsible for providing and obtaining consent from individual study subjects. Each project partner is also responsible for establishing appropriate procedures to recruit participants, for obtaining and documenting consent, and for receiving appropriate local-level IRB approvals prior to contacting potential study subjects.**

[Name of the Study Site] has been selected to participate in a research study examining career pathways of PhD students. The projected is supported by grants received by the Council of the Graduate Schools (CGS), a nonprofit organization based in Washington, DC dedicated solely to the advancement of graduate education and research (www.cgsnet.org), from The Andrew W. Mellon Foundation (grant number 31600612) and the National Science Foundation (grant number 1661272).

As a part of the project, we are surveying all second and fifth-year **PhD students** in **[List of Fields]** at **[Name of Study Site]** to ascertain information about their career aspirations and professional development participations. The data collected from this survey will be used to improve doctoral programs at this university, and will contribute to a national study to expand our understanding of differences in career aspirations among PhD students, as well as to provide national benchmarking data of PhD career aspirations.

Participation in the survey is voluntary and you may choose to skip any question you prefer not to answer. You may also withdraw from participating in this survey at any time without penalty. There are no known risks associated with participating in this survey. Although there is no direct benefit to you by agreeing to participate in this survey, the information obtained from your participation will benefit doctoral programs and future doctoral students at this university and other universities across the nation.

Information collected will only be used for program improvement and research purposes and will be kept strictly confidential. No individually-identifiable information shared in this survey will be shared with anyone outside of the research team at this university or of the study sponsor, the Council of Graduate Schools. To further protect your privacy, only the research team at this university will have access to your student ID information, which you may choose not to provide in your response.

If you have any questions, concerns, or complains about this survey or this university's participation in this study, you may contact the Project Director at this address:

[PD name & contact information]

If you have any questions about the overall scope of the research, please contact the Study Sponsor, the Council of Graduate Schools, at this address:

Dr. Hironao Okahana
Assistant Vice President, Research & Policy Analysis
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1 DuPont Circle, Suite 230
Washington, D.C. 20036-1146
E-mail: research@cgs.nche.edu
Phone: (202) 696-1561

If you have any questions regarding your rights as a research subject, please contact:

[IRB contact information at the study site]

We appreciate your willingness to participate. Thank you in advance for your time and input.

To acknowledge your consent to participate in this survey, click "NEXT PAGE."

Sample Consent Information Sheet: CGS PhD Career Pathways Alumni Survey

***Note*: This is a tentative sample consent information sheet, pending a sponsor-level IRB approval. Each project partner is responsible for providing and obtaining consent from individual study subjects. Each project partner is also responsible for establishing appropriate procedures to recruit participants, obtaining and documenting consent, and for receiving appropriate local-level IRB approvals prior to contacting potential study subjects.**

[Name of the Study Site] has been selected to participate in a research study examining career pathways of PhD degree recipients. The projected is supported by grants received by the Council of the Graduate Schools (CGS), a nonprofit organization based in Washington, DC dedicated solely to the advancement of graduate education and research (www.cgsnet.org), from The Andrew W. Mellon Foundation (grant number 31600612) and the National Science Foundation (grant number 1661272).

As a part of the project, we are surveying all **PhD alumni** who earned degrees in **[List of Fields]** between **[YYYY/MM/DD]** and **[YYYY/MM/DD]** from **[Name of Study Site]** to ascertain information about current employment status and primary and other jobs, immediate prior primary occupation, and doctoral experience. The data collected from this survey will be used to improve doctoral programs at this university, and will contribute to a national study to expand our understanding of differences in the skillsets used and required by PhD holders in a variety of careers, as well as to provide national benchmarking data of PhD career outcomes.

Participation in the survey is voluntary and you may choose to skip any question you prefer not to answer. You may also withdraw from participating in this survey at any time without penalty. There are no known risks associated with participating in this survey. Although there is no direct benefit to you by agreeing to participate in this survey, the information obtained from your participation will benefit doctoral programs and future doctoral students at this university and other universities across the nation.

Information collected will only be used for program improvement and research purposes and will be kept strictly confidential. No individually-identifiable information shared in this survey will be shared with anyone outside of the research team at this university or of the study sponsor, the Council of Graduate Schools. To further protect your privacy, only the research team at this university will have access to your student ID information, which you may choose not to provide in your response.

If you have any questions, concerns, or complains about this survey or this university's participation in this study, you may contact the Project Director at this address:

[PD name & contact information]

If you have any questions about the overall scope of the research, please contact the Study Sponsor, the Council of Graduate Schools, at this address:

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If you have any questions regarding your rights as a research subject, please contact:

[IRB contact information at the study site]

We appreciate your willingness to participate. Thank you in advance for your time and input.

To acknowledge your consent to participate in this survey, click "NEXT PAGE."