

Attachment 3. Analysis Plan for GSS COVID-19 Data Items

The coronavirus pandemic is having a substantial impact on colleges, universities, and the nation's workforce. In response, NCSES is adding short modules to some surveys to assess the pandemic's disruption and impact. Each NCSES survey will assess the impact of the pandemic on a different subpopulation with the goal that the collective information obtained will provide insight on the impact of the pandemic on the nation's science and engineering enterprise.

Many postsecondary institutions closed this spring and are still in flux this fall with a range of approaches to opening their institutionsⁱ. Some research laboratories also closed and although they may have reopened, capacity is limited due to social distancing concerns. The pandemic has also affected schools' finances resulting in reductions in force and furloughs. These changes had only a small effect on the 2019 GSS response rates because the majority of data was submitted before the February 28 deadline, but it is possible that it could lead to major problems in the coming cycle, the 2020 GSS, and subsequent cycles. In addition, the pandemic could lead to noticeable changes in the GSS estimates of graduate student enrollment, postdoctoral appointments, and non-faculty researcher employment.

NCSES proposes adding a small number of questionnaire items to the upcoming 2020 GSS to assess the pandemic's impact on the institutions that participate in the survey. These questionnaire items are designed to inform the following research questions.

- **Will GSS coordinators be able to participate in the 2020 GSS?**
Possible reductions in staff likely will affect the ability of our respondents to provide data. NCSES would like to learn early in the process whether this might be an issue to enable the incorporation of data collection modifications to avoid a major reduction in survey participation.
- **What changes are occurring within these institutions that may affect enrollments of master's and doctoral students?**
To address this question, proposals include items that ask about changes in school policies that may impact the counts reported for graduate students. This information will increase our understanding in two ways: 1) it will provide context for the GSS data quality checks performed after schools submit their data (a process that compares current data with past data to identify possible errors in reporting) and 2) it will provide insight on the broader data patterns related to the impact of the pandemic.
- **What changes are occurring within these institutions that may affect postdocs and doctorate-level non-faculty researchers (NFRs)?**
The GSS is the only federal survey that collects information on postdocs and NFRs, so it is important to gather information about how they may be affected by the pandemic. For example, are institutions rescinding or delaying offers to postdocs? Have the terms of postdoc appointments been changed? Answers to these questions are designed to help inform our understanding of any changes in postdoc and NFR data in the 2020 GSS.
- **Have research facilities or staffing at the institution been impacted?**
Research laboratories closed this spring at many universities and have reopened with restricted access. And many institutions have announced furloughs or other reductions in staff.

Questionnaire items designed to inform this research question will provide insight on how facility changes have affected postdocs and NFRs.

Data Release

The first round of data will be released in an InfoBrief in mid-2021. The purpose of the InfoBrief will be to provide early data on changes in graduate education and postdoc employment at GSS universities. Below are some tables that could be included in the InfoBrief.

Table 1: Impacts of COVID-19 on graduate students. Reductions in the number of new graduate students, changes in definitions of full-time student status, policy changes regarding time to degree, length of time doctoral students can receive financial support.

- Impacts will be presented by institutional characteristics (type, control, size, etc.).

Table 2: Enrollment projections for students (increase, stay the same, decrease) for U.S. citizen master's students, temporary visa master's students, U.S. citizen doctoral students, temporary visa doctoral students. Projections of financial support for master's and doctoral students (increase, stay the same, decrease).

- Projections will be presented by institutional characteristics, including average enrollment of master's and doctoral students in 2018 and 2019.

Table 3: Impacts of COVID-19 on projections of postdocs employment.

- Projections will be presented by institutional characteristics, average size of institutions' postdoc and/or NFR population in 2018 and 2019.

Table 4: Impacts of COVID-19 on postdoc appointment length, and hiring of postdocs and NFRs

- Impacts of the pandemic on years of funding eligibility, appointment length, postdoc offers, hiring freezes/furloughs/layoffs for postdocs and NFRs but institutional characteristics.

When the full 2020 GSS data are released in early 2022, we will use the COVID-19 questions to analyze enrollment data and any trend breaks. The questions about coordinator ability to complete the GSS will be used to create a table about response rates and data quality; depending on the magnitude of the findings this table could be broken down by institution type (public, private), Carnegie code, and other characteristics).

ⁱ <https://www.ncsl.org/research/education/higher-education-responses-to-coronavirus-covid-19.aspx>