

APPENDIX B



Research Experiences
for Undergraduates
National Science Foundation



REU EMPLOYMENT SURVEY

Draft

Note: This survey will be administered to recent college graduates who participated in the REU program in 2019 and are not enrolled in graduate studies by fall 2020 (based on data from the National Student Clearinghouse [NSC]). It includes some questions about education to confirm eligibility for this survey (section A) and gathers educational information for ineligible respondents for whom educational background is not available in the NSC (section B).

Survey questions are drawn mostly from the National Survey of College Graduates (2015) to use questions that have been tested and validated and enable benchmarking to national estimates in the future. We also drew some questions from a draft survey developed for the Graduate Research Fellowship Program in an effort to continue to harmonize data collections across NSF programs.

A. CURRENT ENROLLMENT STATUS

Please mark one answer for each question about your current enrollment status.

1. Are you currently enrolled in a Bachelor's degree program?

₁ Yes → END SURVEY

₀ No

Source: Mathematica

2. Are you currently enrolled in a master's or doctoral degree program?

₁ Yes

₀ No → GO TO SECTION B

Source: GRFP, Q1 (slightly adapted)

3. Are your current graduate studies supported by the NSF Graduate Research Fellowships Program (GRFP)?

₁ Yes

₀ No

Source: GRFP, Q2 (slightly adapted)

GO TO SECTION C IF educational outcomes are not available
for respondent in the National Student Clearinghouse.
ELSE, END SURVEY

B. CURRENT EMPLOYMENT

Please mark one answer for each question about your current enrollment status.

4. Were you working for pay or profit during the week of February 1, 2021?

Working includes being self-employed, on a postdoctoral appointment, traveling while employed, or on any type of paid or unpaid leave, including vacation.

₁ Yes → GO TO QUESTION 6

₀ No

Source: NSCG 2015 QA1, adapted to use 2021 instead of 2015 as the reference year.

5. What were your reasons for not working during the week of February 1, 2021?

Mark Yes or No for each item

	YES	NO
a. Retired		
If Yes: Year Retired __ __ __ __	1 <input type="checkbox"/>	0 <input type="checkbox"/>
b. On layoff from a job.....	1 <input type="checkbox"/>	0 <input type="checkbox"/>
c. Student.....	1 <input type="checkbox"/>	0 <input type="checkbox"/>
d. Family responsibilities.....	1 <input type="checkbox"/>	0 <input type="checkbox"/>
e. Chronic illness or permanent disability..	1 <input type="checkbox"/>	0 <input type="checkbox"/>
f. Suitable job not available.....	1 <input type="checkbox"/>	0 <input type="checkbox"/>
g. Did not need or want to work.....	1 <input type="checkbox"/>	0 <input type="checkbox"/>
h. Other – Specify _____.....	1 <input type="checkbox"/>	0 <input type="checkbox"/>

Source: NSCG 2015, QA3

END SURVEY

6. **What was the title of the principal job you held during the week of February 1, 2021?** *Example: Physics professor*

Source: NSCG 2015 QA5, adapted to use 2021 instead of 2015 as the reference year.

7. **What kind of work were you doing on this job -- that is, what were your duties and responsibilities on your principal job? Please be as specific as possible, including any area of specialization.** *Example: Taught physics and conducted research. Specialized in high energy physics.*

Source: NSCG 2015, QA6

8. **Did your duties on this job require the technical expertise of a bachelor's degree or higher in...**

- 1) Engineering, computer science, math, or the natural sciences
- 2) The social sciences
- 3) Some other field (e.g., health, business, or education). Specify: _____

Source: NSCG 2015, QA19

9. **Using the job categories below, choose the code that best describes the principal job you held during the week of February 1, 2021.**

[Dropdown menu with job codes shown at the end of the survey]

Source: NSCG 2015, QA7

10. Who was your principal employer for this position?

*If your employer had more than one location, report the location that employed you.
If you worked for a contracting or consulting company, report the name of that company, not the client organization.*

a. Employer name..... _____

b. Department/Division..... _____

c. City/Town..... _____

d. State/Territory..... _____

e. ZIP Code..... _____

Source: NSCG 2015 QA9, revised to read “this position” instead of “during the week of February 1, 2021” and shortened the explanatory text.

11. For how long did you work for this employer in any position (enter number of years and months)?

|_|_| |_|_|
Years Months

Source: GRFP, Q12.

12. What was that employer's main business or industry — that is, what did that employer make or do?

*If your principal employer had more than one type of business, report the type of business primarily performed at the location where you worked.
Example: Production of microprocessor chips.*

Source: NSCG 2015, QA10.

13. Which one of the following best describes your employer? Were you ... Select one answer.

- 1 Self-employed or business owner
- 2 Private sector employee
- 3 Government employee
- 4 Another type of employee. Specify _____

Source: Adapted from NSCG 2015, QA13, to ask for the large categories (e.g., government employee) and not the sub-categories (e.g., in a local government, in a state government, in the US military, etc). Also revised to read “your employer” instead of “your principal employer during the week of February 1, 2021”

14. Was your employer an educational institution?

1 Yes

0 No → GO TO QUESTION 16

Source: NSCG 2015, QA14, revised to read as “your employer” instead of “your principal employer”.

15. Was the educational institution where you worked a...

Mark one answer.

- 1 Preschool, elementary, middle, or secondary school or system
- 2 Two-year college, community college, or technical institute
- 3 Four-year college or university, other than a medical school
- 4 Medical school (including university-affiliated hospital or medical center)
- 5 University-affiliated research institute
- 6 Other – Specify

Source: NSCG 2015, QA15.

16. How would you rate your overall satisfaction with the principal job you held during the week of February 1, 2021?

Mark one answer.

- 1 Very satisfied
- 2 Somewhat satisfied
- 3 Somewhat dissatisfied
- 4 Very dissatisfied

Source: NSCG 2015, QA29, adapted to use 2021 instead of 2015 as the reference year.

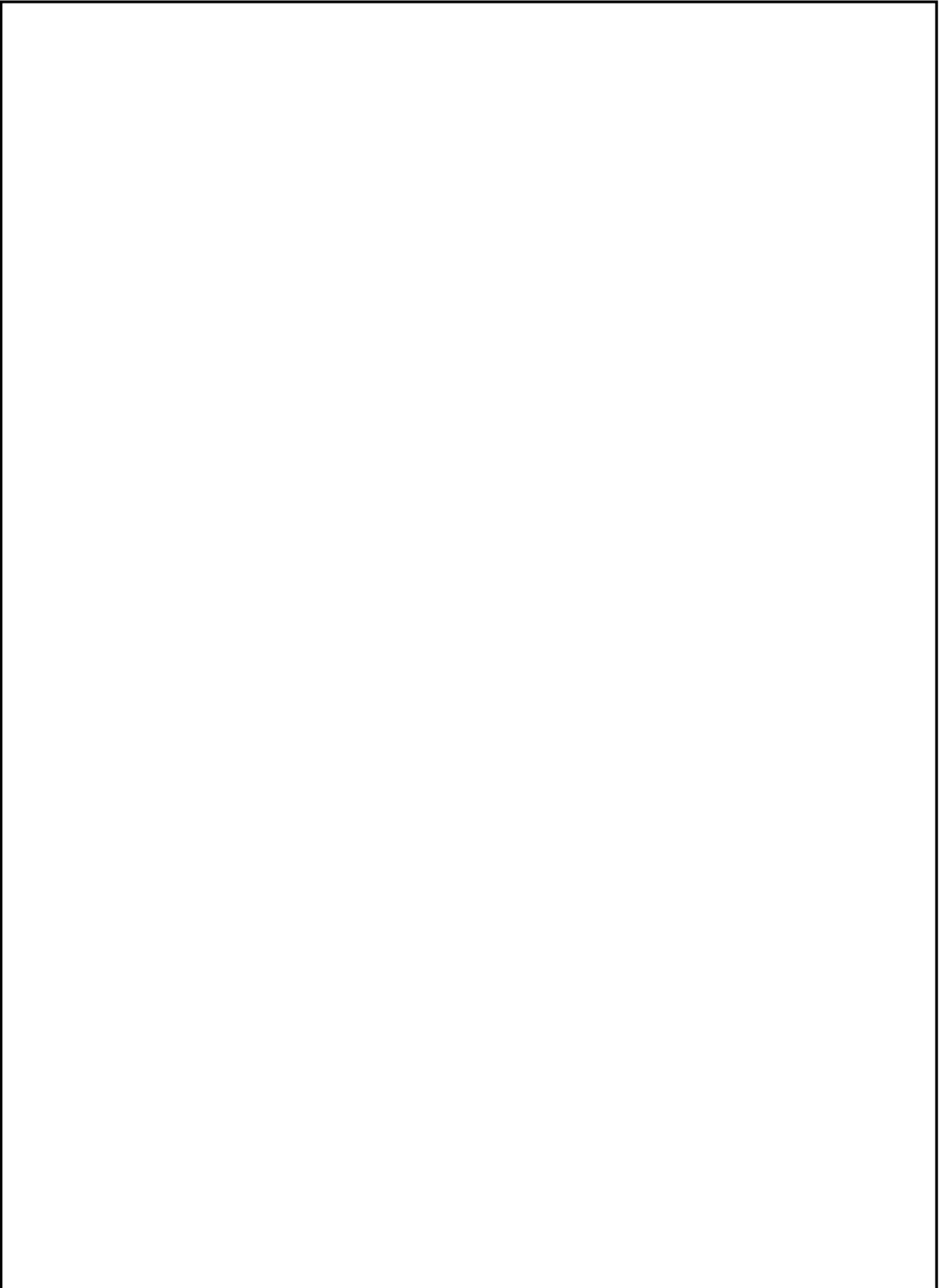
17. Do you think your NSF REU experience has affected your career ...

- 1 Significantly
- 2 Moderately
- 3 A little
- 4 Not at all

Source: GRFP, Q55, adapted for REU

18. Please describe how the NSF REU experience has affected your career.

Source: GRFP, Q55, adapted for REU



C. RECENT EDUCATIONAL EXPERIENCES

19. The next few questions ask about the degrees you received before February 1, 2021. Starting with your most recent college or university degree, please provide the following information for each degree you have received after high school graduation. If you have more than three degrees, report your two most recent degrees and your first bachelor's degree.

[These will be programmed as three sequential questions for online administration.]

MOST RECENT DEGREE	SECOND MOST RECENT DEGREE	THIRD MOST RECENT DEGREE																								
a. From which school did you receive your most recent degree?	a. From which school did you receive your most recent degree?	a. From which school did you receive your most recent degree?																								
College or University Name _____ Department _____ City/Town _____ State/Foreign Country _____	College or University Name _____ Department _____ City/Town _____ State/Foreign Country _____	College or University Name _____ Department _____ City/Town _____ State/Foreign Country _____																								
b. In what month and year was this degree awarded?	b. In what month and year was this degree awarded?	b. In what month and year was this degree awarded?																								
<table style="margin: auto; border: none;"> <tr> <td style="border: 1px solid black; width: 20px; height: 20px; display: inline-block;"></td> <td style="border: 1px solid black; width: 20px; height: 20px; display: inline-block;"></td> <td style="border: 1px solid black; width: 20px; height: 20px; display: inline-block;"></td> <td style="border: 1px solid black; width: 20px; height: 20px; display: inline-block;"></td> </tr> <tr> <td style="text-align: center; padding: 0 5px;">Month</td> <td style="text-align: center; padding: 0 5px;">Year</td> <td style="padding: 0 10px;"></td> <td style="padding: 0 5px;"></td> </tr> </table>					Month	Year			<table style="margin: auto; border: none;"> <tr> <td style="border: 1px solid black; width: 20px; height: 20px; display: inline-block;"></td> <td style="border: 1px solid black; width: 20px; height: 20px; display: inline-block;"></td> <td style="border: 1px solid black; width: 20px; height: 20px; display: inline-block;"></td> <td style="border: 1px solid black; width: 20px; height: 20px; display: inline-block;"></td> </tr> <tr> <td style="text-align: center; padding: 0 5px;">Month</td> <td style="text-align: center; padding: 0 5px;">Year</td> <td style="padding: 0 10px;"></td> <td style="padding: 0 5px;"></td> </tr> </table>					Month	Year			<table style="margin: auto; border: none;"> <tr> <td style="border: 1px solid black; width: 20px; height: 20px; display: inline-block;"></td> <td style="border: 1px solid black; width: 20px; height: 20px; display: inline-block;"></td> <td style="border: 1px solid black; width: 20px; height: 20px; display: inline-block;"></td> <td style="border: 1px solid black; width: 20px; height: 20px; display: inline-block;"></td> </tr> <tr> <td style="text-align: center; padding: 0 5px;">Month</td> <td style="text-align: center; padding: 0 5px;">Year</td> <td style="padding: 0 10px;"></td> <td style="padding: 0 5px;"></td> </tr> </table>					Month	Year		
Month	Year																									
Month	Year																									
Month	Year																									
c. What type of degree did you receive?	c. What type of degree did you receive?	c. What type of degree did you receive?																								
<p><i>Mark one answer.</i></p> <p>1 <input type="checkbox"/> Associate's or two-year college degree (e.g., AA)</p> <p>2 <input type="checkbox"/> Bachelor's degree (e.g., BS, BA, AB)</p> <p>3 <input type="checkbox"/> Master's degree (e.g., MS, MA, MBA)</p> <p>4 <input type="checkbox"/> Doctorate (e.g., PhD, DSc, EdD)</p> <p>5 <input type="checkbox"/> Other professional degree (e.g., JD, LLB, MD, DDS, DVM) – Specify _____</p>	<p><i>Mark one answer.</i></p> <p>1 <input type="checkbox"/> Associate's or two-year college degree (e.g., AA)</p> <p>2 <input type="checkbox"/> Bachelor's degree (e.g., BS, BA, AB)</p> <p>3 <input type="checkbox"/> Master's degree (e.g., MS, MA, MBA)</p> <p>4 <input type="checkbox"/> Doctorate (e.g., PhD, DSc, EdD)</p> <p>5 <input type="checkbox"/> Other professional degree (e.g., JD, LLB, MD, DDS, DVM) – Specify _____</p>	<p><i>Mark one answer.</i></p> <p>1 <input type="checkbox"/> Associate's or two-year college degree (e.g., AA)</p> <p>2 <input type="checkbox"/> Bachelor's degree (e.g., BS, BA, AB)</p> <p>3 <input type="checkbox"/> Master's degree (e.g., MS, MA, MBA)</p> <p>4 <input type="checkbox"/> Doctorate (e.g., PhD, DSc, EdD)</p> <p>5 <input type="checkbox"/> Other professional degree (e.g., JD, LLB, MD, DDS, DVM) – Specify _____</p>																								

MOST RECENT DEGREE	SECOND MOST RECENT DEGREE	THIRD MOST RECENT DEGREE
d. What is the major field of study and second major (if any) for this degree?	d. What type of degree did you receive?	d. What type of degree did you receive?
MAJOR FIELD OF STUDY _____ SECOND MAJOR _____	MAJOR FIELD OF STUDY _____ SECOND MAJOR _____	MAJOR FIELD OF STUDY _____ SECOND MAJOR _____
e. Using the FIELD OF STUDY list below, choose the code that <u>best</u> describes the major field of study and second major (if any) for this degree?	e. Using the FIELD OF STUDY list below, choose the code that <u>best</u> describes the major field of study and second major (if any) for this degree?	e. Using the FIELD OF STUDY list below, choose the code that <u>best</u> describes the major field of study and second major (if any) for this degree?
Code for Major Field of Study _ _ _ _ Code for Second Major _ _ _ _	Code for Major Field of Study _ _ _ _ Code for Second Major _ _ _ _	Code for Major Field of Study _ _ _ _ Code for Second Major _ _ _ _

[Dropdown menu with institutions from IPEDS]

[Dropdown menu with Major codes shown at the end of the survey]

Source: NSCG QD11, adapted to ask about any degrees received after high school, not just on bachelor's degree or higher.

Thank you for completing this questionnaire.

JOB CODES

	Major occupational category	Minor occupational category	Detailed occupational category		
Science occupations	Biological/agricultural/ other life scientists	Agricultural/food scientists	021	Agricultural and food scientists	
		Biochemists/biophysicists	022	Biochemists and biophysicists	
		Biological scientists	023	Biological scientists	
		Forestry/conservation scientists	024	Forestry and conservation scientists	
		Medical scientists	025	Medical scientists (excluding practitioners)	
		Postsecondary teachers, agricultural/other natural sciences	271	Postsecondary teachers, agriculture	
			297	Postsecondary teachers, other natural sciences	
		Postsecondary teachers, biological sciences	273	Postsecondary teachers, biological sciences	
	Other biological/agricultural/life scientists	027	Other biological and life scientists		
	Computer and information scientists			051	Computer and information scientists, research
				052	Computer network architect
				054	Computer support specialists
				055	Computer system analysts
				056	Database administrators
				057	Information security analysts
				058	Network and computer systems administrators
				059	Software developers -- applications and systems software
				060	Web developers
				061	Other computer and information science occupations
				088	Computer engineers, software
	Mathematical scientists	Mathematical scientists		172	Mathematicians
				173	Operations research analysts, including modeling
				174	Statisticians
				176	Other mathematical scientists
		Postsecondary teachers, math/statistics	286	Postsecondary teachers, mathematics and statistics	
	Physical scientists	Chemists, except biochemists		193	Chemists, except biochemists
			Earth/atmospheric/ocean scientists	192	Atmospheric and space scientists
		194		Geologists, including earth scientists	
		195		Oceanographers	
		Physicists/astronomers	191	Astronomers	
			196	Physicists, except biophysicists	
		Postsecondary teachers, chemistry	275	Postsecondary teachers, chemistry	
		Postsecondary teachers, physics	289	Postsecondary teachers, physics	
		Postsecondary teachers, other physical sciences	277	Postsecondary teachers, earth, environmental, and marine sciences	
		Other physical scientists	198	Other physical scientists	

	Psychologists	Psychologists	236	Psychologists, including clinical
		Postsecondary teachers, psychology	291	Postsecondary teachers, psychology
	Social scientists	Economists	232	Economists
		Political scientists	235	Political scientists
		Postsecondary teachers, economics	278	Postsecondary teachers, economics
		Postsecondary teachers, political science	290	Postsecondary teachers, political science
		Postsecondary teachers, sociology	293	Postsecondary teachers, sociology
		Postsecondary teachers, other social sciences	298	Postsecondary teachers, other social sciences
		Sociologists/anthropologists	231	Anthropologists
			237	Sociologists
Other social scientists	238	Other social scientists		
Engineering occupations	Engineering occupations	Aerospace/aeronautical/astronautical engineers	082	Aeronautical, aerospace and astronautical engineers
		Chemical engineers	085	Chemical engineers
		Civil/architectural/sanitary engineers	086	Civil engineers, including architectural and sanitary
		Electrical engineers	087	Computer engineers, hardware
			089	Electrical and electronics engineers
		Industrial engineers	091	Industrial engineers
		Mechanical engineers	094	Mechanical engineers
		Postsecondary teachers, engineering	280	Postsecondary teachers, engineering
		Other engineers	083	Agricultural engineers
			084	Bioengineers or biomedical engineers
			090	Environmental engineers
			092	Marine engineers and naval architects
			093	Materials and metallurgical engineers
			095	Mining and geological engineers
			096	Nuclear engineers
			097	Petroleum engineers
			098	Sales engineers
099	Other engineers			
Science/engineering related occupations	Science/engineering related occupations	Health occupations, except postsecondary teachers and managers	111	Diagnosing and treating practitioners
			112	Registered nurses, pharmacists, dieticians, therapists, physician assistants, nurse practitioners
			113	Health technologists and technicians
			114	Other health occupations
		Postsecondary teachers, health and related sciences	287	Postsecondary teachers, health and related sciences
		S&E managers, including health	142	Computer and information systems managers
			143	Engineering managers
			144	Medical and health services managers
			145	Natural sciences managers
		S&E precollege teachers	253	Teachers, secondary—computer, math, or sciences

			254	Teachers, secondary–social sciences	
		S&E technicians/technologists	026	Technologists and technicians, biological and life sciences	
			053	Computer programmers, business, scientific, and process control	
			100	Electrical, electronic, industrial, and mechanical technicians	
			101	Drafting occupations, including computer drafting	
			102	Surveying and mapping technicians	
			103	Other engineers, technologists, and technicians	
			104	Surveyors, cartographers, and photogrammetrists	
			175	Technologists and technicians, mathematical sciences	
			197	Technologists and technicians, physical scientists	
			Other S&E-related occupations	081	Architects
			171	Actuaries	
Non-science/non-engineering occupations	Non-science/non-engineering occupations	Arts/humanities-related occupations	233	Historians	
			10	Writers, editors, public relations specialists, artists, entertainers, and broadcasters	
		Management-related occupations	151	Accountants, auditors, and other financial specialists	
			152	Personnel, training, and labor relations specialists	
			153	Other management-related occupations	
		Non-S&E managers	141	Top-level managers, executives, and administrators	
			146	Education administrators	
			147	Other mid-level managers	
		Non-S&E postsecondary teachers	272	Postsecondary teachers, art, drama, and music	
			274	Postsecondary teachers, business, commerce and marketing	
			279	Postsecondary teachers, education	
			281	Postsecondary teachers, English	
			282	Postsecondary teachers, foreign language	
			283	Postsecondary teachers, history	
			288	Postsecondary teachers, physical education	
			299	Postsecondary teachers, other non-science and engineering	
		Non-S&E precollege/other teachers	251	Teachers, pre-kindergarten and kindergarten	
			252	Teachers, elementary school	
			255	Teachers, secondary–other subjects	
			256	Teachers, special education–primary and secondary	
			257	Teachers, other precollegiate area	
		Sales/marketing occupations		200	Insurance, securities, real estate, and business services

			201	Sales occupations, commodities, except retail
			202	Sales occupations, retail
			203	Other marketing and sales occupations
		Social service-related occupations	040	Clergy and other religious workers
			070	Counselors, educational, vocational, mental health, and substance abuse
			240	Social workers
		Other non-S&E occupations	031	Accounting clerks, and bookkeepers
			032	Secretaries, receptionists, and typists
			033	Other administrative occupations
			110	Farmers, foresters, and fishermen
			120	Lawyers and judges
			130	Librarians, archivists, and curators
			221	Food preparation and service occupations
			222	Protective services
			223	Other service occupations, except health
			300	Other teachers and instructors
			401	Construction and extraction occupations
			402	Installation, maintenance, and repair occupations
			403	Precision/production occupations
			405	Transportation and material moving occupations
			500	Other occupations

MAJOR CODES

SESTAT Code Group Number	SESTAT Code Group Label
1	Agriculture Business and Production
2	Agricultural Sciences
3	Architecture/Environmental Design
4	Biological/Life Sciences
5	Business Management/Administrative Services
6	Communications
7	Computer and information sciences
8	Conservation and Renewable Natural Resources
9	Criminal Justice/Protective Services
10	Education
11	Engineering
12	Engineering-Related Technologies
13	Languages, Linguistics, Literature/Letters
14	Health and Related Sciences
15	Home Economics
16	Law/Prelaw/Legal Studies
17	Liberal Arts/General Studies
18	Library Science
19	Mathematics and Statistics

20	Parks, Recreation, Leisure, and Fitness Studies
21	Philosophy, Religion, Theology
22	Physical Sciences
23	Psychology
24	Public Affairs
25	Social Work
26	Social Sciences and History
27	Visual and Performing Arts
28	Other Fields (Not Listed)

APPENDIX C**REU Site Visit Protocol****REU Principal Investigator (PI)/Coordinator Interview****60 minutes****Interview Introduction**

Hello, my name is [name] and I am a [position] at Mathematica Policy Research.

Thank you again for taking the time to speak with me today. As you know, Mathematica developed and tested an electronic data system for the REU program. Thanks again for participating in the pilot!

We would like to speak with you to gain a deeper understanding of the REU program. We are particularly interested in understanding how REU Sites are organized and select and work with students. We would also like to get your feedback on the data system.

I'd like to emphasize that everything you say will remain confidential. We will not attribute any information you provided to you or your discipline in our work, such as our report to NSF or presentations.

Do you mind if I tape this conversation? It will help me transcribe it. Rest assured that no person outside Mathematica's research team will have access to interview recordings, notes, or transcripts.

[If they agree, turn on the recording and, once on, thank them for letting you record.]

Do you have any questions before we begin?

BACKGROUND**1. Please tell me about yourself. How long have you been [position] at [university]?**

Probe: What do you typically teach? How long have you been a professor? Site PI?

2. You are the PI of this Site. I am wondering, what motivated you to apply to lead an REU Site?

Probe: What is the goal of your REU Site?

3. What is your role at the Site?

Probe: Do you work with students directly?

4. What does it take to run an REU Site? (Thinking in terms of infrastructure, staffing, collaborations, and funding.)

Interviewer: We also want to understand if there is such a thing as a “Site” created to participate in the REU program, or if the funds contribute to an existing operation. If so, we want to understand what this means in terms of what needs to change, if anything, to participate in the program.

5. Do you collaborate or partner with other REU Sites? If so, with whom? In what ways?

Probe: Ask about why it was important to collaborate with other Sites; some Sites may have interdisciplinary collaborators, find out why?

Find out if they have other *Site* collaborators outside of the REU program, such as faculty at {university name}? What do they bring to your Site?

RECRUITMENT AND SELECTION

Let’s talk for a moment about how you recruit and then select students to participate in a research experience at your site.

6. How do you recruit students?

Probe: Do you advertise the opportunity to join your Site, perhaps at conferences? Do you ask alumni to spread the word? Use social media? Connect with fellow faculty?

7. Do you look for a particular type of student—say, students with specific past experiences, academic background, or technical skills? If so, how does that affect your recruitment efforts?

Probe: For example, Sites seeking to recruit African American students may advertise at HBCUs.

8. [For registration Sites:] How would a student apply to your Site? Can you walk me through the steps and requirements?

[For common app Sites:] I realize that this year you participated in the pilot, so you used the common app created for the REU program, but I am curious to hear about how students applied to your Site before, in prior years. Can you walk me through the steps and requirements?

9. How do you decide which students to admit? Can you walk me through the process and who is involved?

Probe: What role do collaborators play? (Probe: faculty, visiting scholars, etc.)

OFFERINGS FOR STUDENTS

Let's talk about the students selected to come to your Site.

10. For these students, what does it mean to join your REU Site for a summer research experience? What would they do or experience?

11. What supports would students receive while doing research at your Site?

Probe: For example, do students receive opportunities for professional development, such as attending invited lectures/seminars/conferences or participating in workshops? Let's consider adding a list here for the interviewer to checkmark and get examples as appropriate.

12. Would you or someone else mentor students while doing research at your Site? If so, tell me about it.

Interviewer: Site use different approaches to mentor students, which may be provided one-on-one or as part of a group by PIs, Co-PIs, Site faculty, Site PhD students, Site post-docs, or peers (learn about details: who, what mentoring looks like, where it happens, etc.) If mentoring is mentioned under Q4, then administer the probes.

13. What happens once the summer ends? Do students remain engaged with your Site or research in any way during the academic year? If so, how?

TRACKING OUTCOMES

Earlier you mentioned that you hope to (reference here a specific goal stated earlier, such as to increase the number of minority scientists or to help students figure out if this is the right career for them). With that in mind, I wonder:

14. Have you succeeded?

If not explained as part of the answer: How did you gather this information? [Adapt depending on answer to Q13:] Do you track or stay in contact with students after they complete their research experience at your site? How?

If Site is relatively new, revise lead question to read: How will you know if you've achieved your goal?

15. As you know, NSF is seeking to increase its ability to collect and analyze data about the REU program by creating a data system. If you could access that data system, what information would you like to obtain?

Probe: For example, what type of data would be helpful for your renewal application? What types of data would you like to have and currently do not?

REU WEBSITE PILOT

I'd like to get your feedback on the REU website you helped us pilot test.

16. What did you think of the website?

Probe: What did you like? What didn't you like?

17. [For common application users:] Compared to the way in which you managed applications before, was the process easier or more difficult through the pilot? In what ways?

[For registration users:] **Compared to the way in which you gathered application information before, was the process easier or more difficult through the pilot? In what ways?**

[Probe for both groups]: Compared to student information you submitted to NSF in the past, was it easier or more difficult to provide information through the website instead?

18. [For common application users:] NSF is considering two alternatives: to adopt the common application or to adopt only the registration (which is the first part of the common app that collects basic background information from students). Based on your experience, what would be your recommendation to NSF? Why?

[For registration users:] **NSF is considering two alternatives: to adopt the registration or the common application (which includes the registration as well as other information that is typically part of an application, such as student transcripts). Based on your experience, what would be your recommendation to NSF? Why?**

Interviewer: Respondents will be familiar with the registration and the common application and should have received background information ahead of the site visit.

END

19. Is there a question I should have asked you and did not?**20. Do you have any questions for me?**

REU Site Visit Protocol**REU Mentor Individual or Small Group Interview****30 (individual) - 60 minutes (small group)****Interview Introduction**

Hello, my name is [name] and I am a [position] at Mathematica Policy Research.

Thank you again for taking the time to speak with me today. As you know, Mathematica developed and tested an electronic data system for the NSF Research Experiences for Undergraduates or REU program.

We would like to speak with you about your work at [name of REU Site]. We are particularly interested in understanding your role as mentor(s) to the students who are conducting research here this summer as part of the NSF REU program.

I'd like to emphasize that everything you say will remain confidential. We will not attribute any information you provided to you or your discipline in our work, such as our report to NSF or presentations.

Do you mind if I tape this conversation? It will help me transcribe it. Rest assured that no person outside Mathematica's research team will have access to interview recordings, notes, or transcripts.

[If they agree, turn on the recording and, once on, thank them for letting you record.]

Do you have any questions before we begin?

[If this is a small group interview, then treat it like a focus group and state:]

Before we begin, I'd like to ask that you feel free to respond or react to one another's comments – regardless of whether you agree or disagree—and that only one person talk at a time.

1. Please tell me about yourself. What is your position at [university name]? In what ways are you involved with [REU Site name]?

Probe: How long have you been [position] at [REU Site name]? How long have you been a mentor to REU students?

Interviewer: Sites use different approaches to mentor students, which may be provided one-on-one or as part of a group by PIs, Co-PIs, Site faculty, Site PhD

students, Site post-docs, etc. (learn about details: who, what mentoring looks like, where it happens, etc.)

2. What is your role as student mentor?

Probe: How many students do you mentor? How are students matched with mentors? Do you collaborate with others in supporting students?

3. [If applicable] How did you prepare to become a mentor? Did someone explain to you your role and responsibilities?

4. Can you describe how you work with students in a typical week?

5. What other supports do students receive while doing research at [Site name]?

Probe: For example, do students receive opportunities for professional development, such as attending invited lectures/seminars/conferences or participating in workshops? Let's consider adding a list here for the interviewer to checkmark and get examples as appropriate. Who offers these supports?

6. What happens once the summer ends? Do students remain engaged with you, others at [Site name] or research in any way during the academic year? If so, how?

7. In your view, what needs do students have when joining [Site name] to participate in research?

Probe: Are these needs being met? If yes, how. If not, why not? Do you think that students need additional support that they are not currently receiving? If so, please explain.

8. In what ways do you feel students contribute to the research being conducted at this [Site name]?

9. Is there a question I should have asked you and did not?

10. Do you have any questions for me?

REU Site Visit Protocol

Student Focus Group

60 minutes

Introduction

Welcome and thank you for taking time to join us today.

My name is [*name*] and I work at Mathematica Policy Research. The National Science Foundation (NSF) asked us to develop and test an online [common application / registration] for students interested in participating in the REU program. You were invited to participate in this focus group because you are participating in a research experience at an REU Site, this Site, and used that online system [to apply / to complete part of your application].

I would like to ask you a few questions about how you learned about the REU program, what you think of the online [common application / registration], and your experiences at this Site so far. Keep in mind that there are no right or wrong answers. I just want to hear about your experiences and opinions.

Also, please rest assured that we, the study team, will keep your answers confidential—that is, we will not identify you to any staff at the REU Site or in any papers, reports, or presentations. And nothing you say will impact your participation at this Site, the REU program, or other NSF programs in the future.

Do you have any questions before we begin?

I would like to ask your permission to record this meeting. This will help me transcribe your responses accurately later, and concentrate on the conversation now. The recording will also be confidential and only used to transcribe this meeting.

Do I have your permission to record? [Turn on the recording and, once on, thank them for letting you record.]

Before we begin, I'd like to ask that:

- o you please speak up so everyone can hear your comments,
- o feel free to respond or react to one another's comments – regardless of whether you agree or disagree
- o only one person talk at a time

Now let's go around the room and introduce yourselves. Please state your first name, major, year in college you just completed (say, freshman or sophomore), and college or

university in which you are getting your bachelor's degree. [Draw diagram with student names]

Let's begin.

1. HOW DID YOU FIND OUT ABOUT THE REU PROGRAM?

Probe: Revise question to read "about this REU Site" if draw confused looks

2. WHAT DID YOU THINK ABOUT THE APPLICATION PROCESS?

Probes: *(For registration pilot students)* Did you use the online registration? What did you think of it? Did you provide your ID with your registration? Were you confused by having to do this, that is, but having to complete the online registration and provide your ID number in your application to the Sites? Do you have any suggestions for improving the registration?

(For common application pilot students) Did you apply through the common application? What did you think of it? Was it difficult to use in completing your application? Did it provide all of the information you needed to select Sites to which you would submit applications? Do you have suggestions for improving it?

3. IN WHAT WAYS ARE YOU INVOLVED IN RESEARCH HERE AT [Site name]?

Probe: Do you have a mentor to guide you? Who? How often do you meet? Are these meetings / is your mentor helpful? How?

4. WHAT DO YOU DO IN A TYPICAL WEEK?

Probes: In addition to working at the lab or doing research with your professor, what else do you do? Do you attend seminars, get career advice, participate in workshops on how to apply to grad schools?

Which of these activities would you say have been the most useful? Why? Which would you say are less helpful? Why?

5. IN WHAT WAYS IS THIS EXPERIENCE HELPING YOU?

Probes: Is this experience helping you decide whether or not to apply for graduate school? Or even pursue a career in [science/engineering/etc.]? Have your plans changed since joining this Site? How? Why?

6. WHAT ARE YOUR PLANS FOR THE FUTURE? (if time permits)

Probes: What do you plan to do after you graduate from college?