

Appendix C: CCI Graduate Student and Postdoctoral Researcher Survey

Survey Invitation Email

Subject: Please share your experience with CCI!

Dear Dr. [LAST NAME OF GRADUATE STUDENT/POSTDOCTORAL RESEARCHER],

The National Science Foundation (NSF) seeks to understand your experiences related to your participation in a Centers for Chemical Innovation (CCI) Program grant. Because you are listed as a current or former [ROLE] of this program, NSF is requesting that you complete the [Survey Title].

Data from this survey will provide NSF with critical information about the CCI Program's progress in achieving its goals. These data will allow NSF to communicate the outcomes of the program to NSF stakeholders and the broader Chemistry community. These data will inform improvements in the CCI Program and may also inform Center-level design and operations.

1. **Duration:** The survey takes about [TIME] minutes to complete.
2. **Your responses will be confidential:** NSF has contracted with Abt Associates to conduct this survey. Although Abt will collect names of organizations and your role within those organizations, your responses will not be associated with you, your organization, or your grant when aggregated results are reported to NSF. During the study, the data will be stored and secured on a password-protected server. Your anonymity will be kept to the degree permitted by the technology used.
3. **Right to ask questions:** Please contact Ellen Bobronnikov (NSF_CCI@abtassoc.com) or Rebecca Kruse (rkruse@nsf.gov) with questions or concerns about this study.
4. **Voluntary participation:** Your decision to be included in this research study is voluntary. You can stop at any time. You do not have to answer any questions you do not want to answer.
5. **Deadline:** Please complete your survey study by [MONTH, DAY, YEAR].
6. **Next steps:** When you [click on this link](#), you will be directed to the [Survey Title].

Please print this form to keep for your records.

On behalf of NSF and the Abt Associates study team, thank you very much for your participation!

Sincerely,
Ellen Bobronnikov
CCI Study Director, Abt Associates

Survey Initial Reminder Email

Subject: NSF needs your input!

Dear Dr. [LAST NAME OF GRADUATE STUDENT/POSTDOCTORAL RESEARCHER],

I am writing to follow up on our invitation for you to participate in a survey we are administering to current and former Centers for Chemical Innovation (CCI) [ROLE GROUP] on behalf of the National Science Foundation (NSF). Your input will help NSF plan for the future of the CCI Program. Please complete the confidential web survey by clicking on the link below.

LINK

If you are willing to complete the survey, we would appreciate if you could do so [enter date within 2 weeks]. If you have any questions regarding the study, e-mail Ellen Bobronnikov (NSF_CCI@abtassoc.com) or Rebecca Kruse (rkruse@nsf.gov). Thank you in advance for your assistance!

Sincerely,
Ellen Bobronnikov
CCI Study Director, Abt Associates

Survey Final Reminder Email

Subject: Last chance to participate in pilot test of NSF survey!

Dear Dr. [LAST NAME OF GRADUATE STUDENT/POSTDOCTORAL RESEARCHER],

We are writing to follow up about an e-mail we sent you recently, inviting you to participate in a survey about the Centers for Chemical Innovation (CCI) program. And as a current or past [ROLE GROUP] in a CCI Center, your responses can provide valuable feedback that will help strengthen the design and operation of the program.

You can access the confidential web survey by clicking on the link below.

LINK

If you choose to complete the survey, please do so by [enter date within 1 week]. If you would prefer not to complete the survey, please also let us know so we can take you off of our list. If you have any questions regarding the study, e-mail Ellen Bobronnikov (NSF_CCI@abtassoc.com) or Rebecca Kruse (rkruse@nsf.gov). Thank you in advance for your assistance.

Best,
Ellen Bobronnikov
CCI Study Director, Abt Associates

CCI Graduate Student and Postdoctoral Researcher Survey

The survey solicits responses from graduate students and postdocs who have participated or are currently participating in the National Science Foundation's (NSF) Centers for Chemical Innovation (CCI) Program. The survey is part of the external program evaluation, which aims to understand the role of the CCIs in graduate and postdoctoral training and career development. All survey responses will be aggregated to not reveal individual identities. The survey should take about 15 minutes to complete.

CONSENT

Participation in the survey is voluntary, and nonparticipation, discontinuing the survey, or skipping questions will have no impact on you. All information that would permit identification of an individual respondent will be held in confidence, will be used by only persons engaged in and for the purpose of the survey, and will not be disclosed or released to others for any purpose except as required by law. Information from the survey will only be reported in the aggregate at the program level, combined with other responses. While there are no direct benefits of your participation in this survey, your frank and open responses will help the National Science Foundation to strengthen the design and operation of the program. The evaluation will also communicate the outcomes of the CCI Program to the chemistry community. Hence, we encourage you to respond candidly about your experiences. We anticipate that the survey will take about 15 minutes to complete.

INSTRUCTIONS

- Please use the survey's navigation buttons ("Back" and "Next") to move through the questionnaire.
- You may exit the survey at any time by pressing the "save and continue later" button. When you re-open the survey, you will be able to continue where you left off.
- Once you reach the last question in the survey, you will see a "submit" button. After clicking this button, your survey will be complete and you may close your browser. Once submitted, you will not be able to return to the survey without contacting our team.
- If you have any questions regarding the survey, you can contact us at CCISurvey@abtassoc.com.

The OMB control number for this project is 3145-NEW. Public reporting burden for this collection of information is estimated to average 15 minutes per respondent, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspects of this collection of information, including suggestions for reducing this burden, to Suzanne H. Plimpton, Reports Clearance Officer, National Science Foundation, 2415 Eisenhower Ave, Alexandria, VA 22314 or send e-mail to splimpto@nsf.gov.

[Verification]

Past and current:

1. Is your name: [First Name, Middle Name/Initial, Last Name]?

- Yes, this is correct
- No, my name has changed or is misspelled. My name is: _____
- No, I am not the person named above → Exit the survey

Past and current:

2. All of the questions in the survey refer to your participation in the following NSF Center for Chemical Innovation (CCI): [CCI name]

Please note that when first established, the program was called the Chemical Bonding Centers.¹³

- I have participated/am still participating in this CCI → 3
- I have not participated/am not participating in this CCI, but I have participated/am still participating in a different CCI → A
- I have not participated in the CCI program → Exit the survey

A. Please select from the list of options

If you participated in more than one CCI, please select the CCI with which you have been most extensively involved and limit your answers to this CCI only.

[pull-down menu of CCIs] → 3

Past and current:

3. Are you still part of this CCI? Select one.

- Yes → current
- No → past

Past and current:

4. For how long [current: have you been / past: were you] associated with the CCI program?¹⁴

- <3 months
- 3 to 6 months
- 7 to 11 months
- 1 to 2 years
- 2 to 3 years
- 4 or more years
- Uncertain/do not recall

¹³ Adapted from STC Current Student Survey, item 1b¹⁴

Adapted from STC Current Student Survey, item 1

¹⁴ Adapted from STC Current Student Survey, item 1

Past only:

5. Why are you no longer participating in CCI? Select all that apply.

- Graduated/completed postdoctoral training → 6
- Left for another reason → A → 6

A. Please indicate all reasons that apply.

- Insufficient funding
- Advisor left the CCI
- Completed CCI-related project and moved on to a project not related to CCI
- Was assigned to a different project
- Was not interested in research being conducted
- Did not get along with advisor/inadequate mentoring
- Did not get along with people in the center
- Did not get resources I needed
- Decided to pursue another career path
- Did not like being part of a center
- Left graduate/postdoctoral program before completion
- Personal/family reason or change in life circumstances
- Other, please explain: _____

[Career status and plans]

Past only:

6. During your final year at CCI, were you:¹⁵

- A terminal masters student
- A doctoral student
- A postdoctoral scholar
- Other, please explain: _____

Past only:

7. How many people served as mentors to you (either formally or informally), providing guidance, feedback, and support for your development and research? Select one.

- I had a single mentor who participated in CCI
- I had a single mentor who did not participate in CCI
- I had multiple mentors who all participated in CCI
- I had multiple mentors, but not all of them participated in CCI
- I did not have any mentors

¹⁵ Adapted from STC Current Student Survey, item 1b

Past only:

8. Did your CCI experiences influence any of these? Select all that apply.¹⁶

- Type of institution to join – e.g., university, industry, government
- Type of career to pursue – e.g., research, teaching, entrepreneurship
- Whether to pursue a doctoral or professional degree – *display row only if respondent was a terminal masters student according to Q5*
- Whether to pursue postdoctoral training
- Choice of specific employer
- Choice of discipline/field of study
- Choice of research problem
- Choice of advisor/mentor

Past only:

9. Are you currently enrolled in a degree program? Select one.

- Yes → A
- No → 10

A. Is your degree program in chemistry or a related field?

- Yes → 11
- No → 11

Past only:

10. Which of the following best describes your current principal employer? Select one.

- Not employed
- College or university
- Industry (chemical or pharmaceutical company or similar)
- Government (including government research labs)
- Non-government lab
- Research institution/think tank
- Other nonprofit organization or private foundation
- K-12 school or district
- Entrepreneur/self-employed
- Other, please specify: _____

¹⁶ Adapted from STC Graduate Student Survey, item A12¹⁷ Adapted from IGERT Student Survey 2004, item 1¹⁸
Adapted from SEAP/NREIP Student Survey, item 22

Current only:

11. Are you:

- A terminal masters student → A
- A doctoral student → 12
- A postdoctoral scholar → 12
- Other, please explain: _____ → 12

A. After you graduate, are you planning to pursue a PhD?

- Yes → B → 12
- No → C → 12
- Unsure → 12

B. Has your CCI experience positively influenced your interest in pursuing a PhD?

- Yes, it increased my interest in pursuing a PhD
- No, I was already planning to pursue a PhD

C. Has your CCI experience negatively influenced your interest in pursuing a PhD?

- Yes, it decreased my interest in pursuing a PhD
- No, I was not planning to pursue a PhD

Current only:

12. Which of the following positions are you most interested in pursuing after you complete your degree and/or postdoctoral training? Have your career goals changed since you began participating in the CCI? Select one answer per row.¹⁷

	Never been my goal	Considered before involvement in CCI	Became a goal since involvement in CCI
Faculty member in a research college or university			
Faculty member in a 2-year or 4-year teaching college			
Program officer/academic administrator			
Non tenure-track researcher in a university or a research institute			
Researcher in a government laboratory			
Research and development position in industry			
Business position in industry or an entrepreneur			
Science policy, law, consulting, or science writing			
Other, please specify:			

¹⁷ Adapted from IGERT Student Survey 2004, item 1¹⁸ Adapted from SEAP/NREIP Student Survey, item 22

[Experience with CCI]

Past and current:

13. Have you spent time working in a laboratory/research group of another CCI partner organization (e.g., another university or company involved with your center) as an intern, graduate student, visiting scholar, or similar role? Select one.

- Yes → A → B → C → 14
- No → 14

A. Which of the following best describes the organization(s) in which you worked and/or currently work? Select all that apply if you worked with more than one type of organization.

- Academic institution
- Government laboratory
- Industry
- Foundation/non-profit
- Other, please specify: _____

B. How much time did you work at CCI partner organization(s) in total?

Enter number _____ [Pull down menu for weeks/months/years]

C. How valuable was this experience to your career development? Select one.

- Not at all valuable
- Somewhat valuable
- Very valuable
- Too early to tell/uncertain

Past and current:

14. Which of the following professional development opportunities offered through your CCI have you experienced? Select all that apply.

- Mentorship you received
- Research opportunities
- Internships/visits to other research labs
- Attending conferences
- Giving presentations
- Publishing papers
- Applying for grants/fellowships/awards
- Collaborating with researchers at your institution
- Collaborating with researchers outside of your institution
- Entrepreneurship
- Teaching and/or course development
- Supervising students
- Outreach to the general public

15. On a scale of 1-5, where 1 = very dissatisfied and 5 = very satisfied, how satisfied are you with these opportunities?

	1=Very dissatisfied	2	3	4	5=Very satisfied
Mentorship					
Research opportunities					
Internships/visits to other research labs					
Attending conferences					
Giving presentations					
Publishing papers					
Applying for grants/fellowships/awards					
Collaborating with researchers at your institution					
Collaborating with researchers outside of your institution					
Entrepreneurship					
Teaching and/or course development					
Supervising students					
Outreach to the general public					

Past and current:

16. On a scale of 1-5, where 1=not at all satisfied and 5=very satisfied, how would you rate your CCI experience overall? Select one.

Pull-down menu 1-5. If <3 → A
 If ≥3 → 17

A. What is the primary reason for your dissatisfaction?¹⁸ → 17

[Role of CCI]

Past and current:

17. Please indicate, for each item below, whether participation in CCI has proved to be an advantage, disadvantage, or made no difference to the following:¹⁹

	An advantage	No difference	A disadvantage	NA/too early to tell
Breadth of research experience				
Access to equipment, facilities, materials, reagents				
Ability to advance your research project				
Ability to develop/work on your own ideas				
Opportunities to take on leadership responsibilities				
Access to faculty				
Learning about scientific or engineering areas outside of your field				
Learning about commercialization and entrepreneurship				
Learning how to communicate about your research				
Quality of education				
Quality of training				
Quality of mentoring				
Access to community of peers				
Opportunities to network				
Determining your career direction and options				
Job opportunities available to you				

¹⁸ Adapted from SEAP/NREIP Student Survey, item 22

¹⁹ Adapted from STC Current Student Survey, item 2a-c²⁰ Adapted from IGERT Student Survey 2004, item 14; SEAP/NREIP Intern Survey, item 23; and STC Graduate Student Survey, item C15

Past and current:

18. How well do you think participation in the CCI has prepared/is preparing you for the following activities? Choose one answer per row.²⁰

	Not prepared	Somewhat prepared	Well prepared	N/A/too early to tell
Formulating research problems				
Critically evaluating published literature				
Conducting high-quality research				
Solving problems which arise in implementing a research program				
Presenting and publishing your work				
Working in a multidisciplinary team				
Working outside of academia				
Writing fellowships/grant proposals				
Communicating with researchers in your field				
Communicating with researchers outside of your field				
Communicating research findings to the general public				
Serving as a mentor				
Teaching				

[Demographics]

Past and current:

19. What is your gender?²¹

- Male
- Female
- Prefer not to report

Past and current:

20. Do you identify as an underrepresented ethnic/racial minority?²²

- Yes → A
- No → End of the survey
- Prefer not to report → End of the survey

²⁰ Adapted from IGERT Student Survey 2004, item 14; SEAP/NREIP Intern Survey, item 23; and STC Graduate Student Survey, item C15

²¹ Adapted from NSF SED Survey, item C1 and STC Faculty Survey, item 15

²² Adapted from NSF SED Survey, items C10-11 and STC Faculty Survey, item 16

A. If so, indicate:

- Black or African American
- Hispanic/Latino
- Native American
- Alaska Native
- Native Pacific Islander
- Prefer not to report
- Other. Please specify _____