

Supplemental Material

CBE—Life Sciences Education

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CUNY RESEARCH SCHOLARS PROGRAM ONLINE STUDENT SURVEY

Dear CRSP Student,

Please answer the following **consent question form** before continuing:

You are being asked to participate in this research survey because you participated in the CUNY Research Scholars Program this year. The purpose of this research study is to assess the impact of the CUNY Research Scholars Program. Your responses are confidential (we are not collecting names) and will be used only by the CUNY Central Office to evaluate the effectiveness of the program. Participation is voluntary and, if you choose to participate, you are free to skip any question that you prefer not to answer.

If you have questions about the research, please contact Ron Nerio at ron.nerio@cuny.edu or 646-664-8914. If you have any questions about your rights as a research participant, or if you would like to talk to someone other than the researchers, you can contact a **CUNY Research Compliance Administrator** at 646-664-8918 or HRPP@cuny.edu.

Your responses to this survey will help us continue to improve the program. Thank you!

I understand that: A. My participation is voluntary and I may withdraw my consent and discontinue participation in the study at any time. There is no penalty for withdrawing.*

___ I hereby give my consent to be the subject of your research.

We hope you have had a constructive and enjoyable experience as a member of the CUNY Research Scholars Program. Please take a few minutes to complete this survey. It will help us understand how well the program served you. Your experiences will also help us as we continue to improve the program for future students. We will not collect or use your name. We will report the results only in aggregate.

1. During the 2020-2021 academic year, where were you enrolled?

- a. Borough of Manhattan Community College
- b. Bronx Community College
- c. College of Staten Island
- d. Guttman Community College
- e. Hostos Community College
- f. Kingsborough Community College
- g. LaGuardia Community College
- h. Medgar Evers College
- i. New York City College of Technology
- j. Queensborough Community College

2. In what discipline was your CRSP project involved?

- a. Physics
- b. Chemistry
- c. Biology
- d. Engineering
- e. Environmental Science
- f. Mathematics
- g. Social Sciences
- Other:

3. Which one of the following best describes your participation in CRSP (please circle one)

- a. This was my first year in the program
- b. This was my second year in the program

4. Approximately how many credits did you have before you joined the CUNY Research Scholars Program (please circle one)

- a. Less than 30
- b. Between 31 and 45
- c. More than 45

Questions 5 through 10 refer to your experiences in college before you enrolled in CRSP.

Please circle a number between 1 and 5 to indicate how strongly you agree or disagree with the items below, with 1 meaning strongly disagree and 5 meaning strongly agree.

5. I felt a sense of belonging at my college before I became involved in the CUNY Research Scholars Program

- 1
- 2
- 3
- 4
- 5

6. I felt as if my professors (one or more) genuinely cared about me.

- 1
- 2
- 3
- 4
- 5

7. I found myself wishing that I had more guidance or advising at my college.

- 1
- 2
- 3
- 4
- 5

The following made me feel at home, or as if I belonged, at my college before I became

involved in CRSP (reminder: 1 means strongly disagree and 5 means strongly agree):

The general environment at my college:

- 1
- 2
- 3
- 4
- 5

My STEM courses (science and math):

- 1
- 2
- 3
- 4
- 5

My general coursework

- 1
- 2
- 3
- 4
- 5

My professors

- 1
- 2
- 3
- 4
- 5

9. Before I enrolled in CRSP, I enjoyed going to college.

- 1
- 2
- 3
- 4
- 5

10. Before I enrolled in CRSP, I had a sense of what it meant to conduct research

- 1
- 2
- 3
- 4
- 5

11. At the time that I joined CRSP, I would have described myself as (please circle one)

- a. A student who comfortably excelled at most of my coursework. (if you choose this response, please skip question 13)
- b. A student who performed well in most of my coursework but struggled with certain courses
- c. A student who was struggling with college coursework.

12. If you felt you were struggling with some of your coursework when you first became a CUNY Research Scholar, in which area(s) did you feel you could have used the most help? (circle all that apply)

- a. English/writing
- b. Other liberal arts requirements
- c. Mathematics
- d. Courses in my chosen major
- e. Other science courses not in my major

The remaining questions refer to your experience in college once you became involved in the CUNY Research Scholars Program. Please circle a number between 1 and 5 to indicate how strongly you agree or disagree with the items below with 1 meaning strongly disagree and 5 meaning strongly agree.

13. I felt a greater sense of belonging at my college than I did before becoming involved in the program

- 1
- 2
- 3
- 4
- 5

14. Participation in CRSP led me to participate more in my classes.

- 1
- 2
- 3
- 4
- 5

15. I felt as if I were able to concentrate more on my coursework than I did before becoming involved in the program

- 1
- 2
- 3
- 4
- 5

16. I felt as if my mentor cared about me as a person

- 1
- 2
- 3
- 4
- 5

17. My mentor helped me develop my self-confidence

- 1
- 2
- 3
- 4
- 5

18. My mentor helped me develop my scientific (or social scientific) knowledge and skills

- 1
- 2
- 3
- 4
- 5

19. My mentor helped me improve my writing skills

- 1
- 2
- 3
- 4
- 5

20. My mentor helped me consider my next steps, after graduation from my associate degree program

- 1
- 2
- 3
- 4
- 5

21. The hours required for my CRSP research sometimes made it more difficult to concentrate on my coursework

- 1
- 2
- 3
- 4
- 5

22. The CRSP programming at my college was of high quality and helped me develop my skills as a researcher

- 1
- 2
- 3
- 4
- 5

23. The CRSP programming at my college helped me develop my self-confidence

- 1
- 2
- 3
- 4
- 5

24. If you were employed at any point during the 2017-2018 year, please let us know how your outside work affected you (If you did not have a job, please skip this question)

- a. Working at my job(s) made it significantly more difficult to concentrate on my CRSP and classroom work
- b. Working at my job(s) made it a little more difficult to concentrate on my CRSP and classroom work
- c. Working at my job(s) did not have any impact on my CRSP and classroom work

25. If you were employed, please let us know about your working hours: (circle all that apply).

- a. I worked 15 hours or less per week during the academic year (fall/spring)
- b. I worked more than 15 hours per week during the academic year (fall/spring)
- c. I was not employed during the summer
- d. I worked 15 hours or less per week during the summer
- e. I worked more than 15 hours per week during the summer

26. How did you (or will you) use the CUNY Research Scholars funds? (please circle all that apply)

- a. The funds helped me pay my tuition.
- b. The funds helped me reduce the number of hours I worked at my outside job(s).
- c. I needed the funds to help pay rent.
- d. I needed the funds for household expenses other than rent.
- e. I used the funds for other expenses
- Other:

27. I would describe myself, at this time, as

- a. A student who is comfortably excelling at most of my coursework
- b. A student who performs well in most of my coursework but struggles with certain courses
- c. A student who was struggling with college coursework

28. I feel prepared for my next steps, after completion of my associate degree (reminder: 1 means strongly disagree and 5 means strongly agree)

- 1
- 2
- 3
- 4
- 5

29. I would like to pursue a career that involves academic or scientific research

- 1
- 2
- 3
- 4
- 5

30. I would recommend CRSP to other students at my college (please circle a number from 1 to 5, with 1 meaning strongly agree and 5 meaning “strongly disagree”)

- 1
- 2
- 3
- 4
- 5

31. What impact do you believe the COVID-19 pandemic had on your personal experience in CRSP?

32. What impact do you believe the COVID-19 pandemic had on your research in CRSP?

33. Please tell us what you like best about CRSP

34. Was there anything about the program you felt could be improved.

SUBMIT FORM



CUNY RESEARCH SCHOLARS PROGRAM ONLINE FACULTY MENTOR QUESTIONNAIRE

Dear CRSP Mentors,

Please answer the following **consent question form** before continuing:

You are being asked to participate in this research survey because you served as a mentor in the CUNY Research Scholars Program. The purpose of this research study is to assess the impact of mentored research, both for the student and the faculty participant. Your responses are confidential (we are not collecting names) and will be used only by the Central Office to evaluate the effectiveness of the program. Participation is voluntary and, if you choose to participate, you are free to skip any question that you prefer not to answer.

If you have questions about the research, please contact **Ron Nerio** at ron.nerio@cuny.edu or **646-664-8914**. If you have any questions about your rights as a research participant, or if you would like to talk to someone other than the researchers, you can contact a **CUNY Research Compliance Administrator** at HRPP@cuny.edu.

I understand that: A. My participation is voluntary and I may withdraw my consent and discontinue participation in the study at any time. There is no penalty for withdrawing.*

___ I hereby give my consent to be the subject of your research.

How many years have you participated as a mentor in CRSP?

- 1
- 2
- 3
- 4
- 5
- 6
- 7

2. What led you initially participate in the program? [select the one best answer]

- a. I was already working with one or more of the students I agreed to mentor.
- b. I thought it was a good opportunity for students at my campus.
- c. I was urged to participate by a department chair, dean or provost.
- d. I was asked to participate by another faculty mentor.
- e. A student approached me and asked me to mentor him/her.
- Other:

3. About how many students have you mentored in the program so far?**4. How many students did you agree to mentor this academic year?****5. Did all of your students complete the program this academic year? (if no, please answer 5a; otherwise, please skip to Question 6)**

- Yes
- No

5a. (Answer only if one or more of your students did not complete the program). You have indicated that one or more of your students did not complete the program. Please indicate why, to the best of your understanding, one or more of your students may have left the program before completing it:

- a. Other work or family obligations made it impossible for the student to finish the program.
- b. The student's course load was too heavy to permit him/her to devote sufficient time to research.
- c. The student was not sufficiently prepared to handle research.
- d. I do not know why the student left the program early.
- f. Complications related to COVID-19 led at least one of my students to leave the program early.
- Other:

During 2020-2021, students were asked to devote 320 hours to undergraduate research. We realize that the pandemic presented many unusual circumstances and obstacles. The following questions are meant to understand how the pandemic affected you, your students, and the program.

6. Did your 2020-2021 student(s) complete 320 hours of research? [If your student(s) entered the program in the spring, please select answer e or f below].

- a. My student(s) completed significantly more than 320 hours of research.
- b. My student(s) completed roughly 320 hours of research.
- c. My student(s) completed fewer than the required number of hours.
- d. My student(s) completed significantly fewer than the required number of hours.
- e. One or more of my students entered the program late, but will complete the 320 hours of research during the upcoming semester.
- f. One or more of my students entered the program late and will not complete 320 hours of research due to graduation.

7. If your student(s) did not engage in 320 research hours, which of the following statements is/are accurate? (please select the one answer below that is most accurate; or skip this question if it is not relevant):

- a. My student(s) could not complete 320 hours due to family, course requirements, and/or outside work requirements. I/we reduced the overall number of hours required.
- b. The closing of labs and other campus facilities made it unrealistic to require my student to complete 320 hours of research activities.

8. How did mentoring a CRSP student (or students) affect your overall workload? [Please choose all responses that apply below].

- a. I spent roughly 320 additional work hours (beyond my regular work schedule) with my student(s).
- b. My workload was significantly increased (100-319 hours) because I spent large amounts of time mentoring students.
- c. My student(s) joined an ongoing research project; therefore my workload was not significantly affected by participating as a CRSP mentor.
- d. My student(s) provided needed research assistance and thereby reduced my workload.

9. Regarding COVID-19, what impact did the pandemic have on your plans to conduct research with your student(s)? [please select all that apply]

- a. COVID-19 had almost no impact on my plans to conduct research with my student(s)
- b. COVID-19 caused us to make major revisions to our research plans, but I believe we innovated in a way that provided the student(s) with a significantly positive research experience
- c. COVID-19 caused us to make major revisions to our research plans and these revisions had a significant negative impact on the quality of my student's (or students') research experience

The following questions aim to understand how you feel about your students' experience in CRSP.

10. I believe that my student(s) received a substantial benefit from their participation in undergraduate research through CRSP.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

11. I believe that CRSP made a significant impact on my students(s) understanding of what research is and how it works.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

12. I believe that my students are more likely now to pursue a career involving research than they were before their work in CRSP began.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

13. I believe that my student(s) made their best efforts to participate fully in the program, but the conditions of the pandemic were simply too discouraging or distracting for them to derive the full benefit of participation in a year-long research opportunity.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

14. My student(s) was/were often out of contact for significant periods of time during the past year.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

15. To what degree did CRSP provide you with a satisfying mentoring experience this year?

- Very Unsatisfied
- Unsatisfied
- Neutral
- Satisfied
- Very Satisfied

16. How satisfied were you with your students' performance in CRSP this year?

- Very Unsatisfied
- Unsatisfied
- Neutral
- Satisfied
- Very Satisfied

17. Do you plan to participate as a CRSP mentor again next year?

- Yes
- No

18. Would you recommend that other faculty participate?

- Yes
- No

Open-ended question:

19. Do you have any suggestions on how CRSP could be improved at your college during the next year?

20. Is there anything else you would like to mention about the program?

Thank You for your responses! Your input will help us assess and improve the program.

SUBMIT FORM

CUNY Research Scholars Program

Mentor Focus Group and Interview Instrument

Focus groups with CRSP faculty members will be largely open-ended. We would like faculty members to address points that they regard as important. However, questions will roughly follow this order:

1. First, we will remind everyone in the room that participation is voluntary and that they are free to refrain from any aspects of the conversation or to leave at any time. We will also remind them that their names will not be linked to any comments that we record in writing. We will not use any recording device – all comments will be hand-written. **If conducted on Zoom, we will not record the Zoom sessions.** Finally, we will assure participants that we are not focusing on individual experiences or individual details; rather, we are consulting with faculty members to understand how the program works.
2. We will open by asking those present for their perceptions about the overall impact of the program on their college and on STEM students at their campus.
3. Our next question pertains to strengths and weaknesses of the program. Which aspects are working best and deliver the best results? Which areas could use improvement of some kind?
4. **We will ask about how the transition from primarily in-person research experiences to remote/virtual experiences impacted the program?**
5. The next question focuses on challenges facing students. Students in the program often have many other responsibilities in addition to their laboratory research and their coursework, such as work and family life. We would like suggestions for how they (mentors)—or we—can foster student success in light of such challenges. **We will also ask about how/whether COVID-19 restrictions posed additional challenges and whether and how mentors addressed social justice and equity issues in their research as many of their students faced crisis conditions**
6. Because student success is the point of the program, we will ask whether and how, in faculty members' perceptions, the program affects the following: grades, participation in class, and credit accrual as well as students' ability to apply and transfer to senior colleges.
7. The last question focuses on challenges facing faculty themselves. The guidelines of the program ask mentors to commit as many as ~~400 hours~~ **320 hours** with their students during a calendar year. We would like to know how the time commitment affects faculty members – and whether they have any suggestions as to how any difficulties associated with this burden might be lightened.

CUNY Research Scholars Program

Director Interview Questions for CRSP Assessment

1. How would you describe the overall impact of CRSP at [college name] on students?
2. Has the program made an impact on the culture of research at _____?
3. In your judgment, how has the program fared during the pandemic?
 - a. What has been the feedback from the students?
 - b. What has been the feedback from the mentors?
4. What were the challenges of recruiting students and mentors during the COVID-19? What obstacles arose and were you able to pivot to other approaches?
5. Has the reduced stipend (and corresponding reduction in hours) had an impact on the program?
6. Given months of lab and other facility closures, what do you project for mentor and student recruitment for the upcoming year?

CUNY Research Scholars Program
Interviews with Alumni – Questions (open-ended)

1. Your CRSP mentor suggested we contact you about your experiences in, during, and following the program. May we start this conversation by asking you where in which college you are enrolled now or where you are now working?
2. Would you tell us a little bit about what led you to enroll at [name of college] in [year].
3. How did you learn about and become involved in CRSP?
4. Can you tell us about the mentoring you received during your time in CRSP?
5. Would you say the program prepared you to transfer to a baccalaureate program? If so, how? Which aspects of the program were most helpful?
6. If you have completed your baccalaureate degree, would you say that the program helped prepare you for post-graduate studies or your post-college career? In what way?
7. Please briefly describe your CRSP research. Would you say that research led you into later research projects? If so, in what way?
8. Is there anything else you would like to tell us about CRSP?