

Supplemental Material

CBE—Life Sciences Education

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APPENDIX A. Specific survey questions that we used in the paper

DEPENDENT VARIABLES

Depression (PHQ-9)

Over the past two weeks, how often have you been bothered by any of the following problems

	Not at all	Several days	More than half the days	Nearly every day
Little interest or pleasure in doing things	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Feeling down, depressed or hopeless	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trouble falling asleep, staying asleep, or sleeping too much	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Feeling tired or having little energy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Poor appetite or overeating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Feeling bad about yourself - or that you're a failure or have let yourself or your family down	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trouble concentrating on things, such as reading the newspaper or watching television	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Moving or speaking so slowly that other people could have noticed. Or, the opposite - being so fidgety or restless that you have been moving around a lot more than usual.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Thoughts that you would be better off dead or of hurting yourself in some way	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Anxiety (GAD-7)

Over the past two weeks, how often have you been bothered by any of the following problems?

	Not at all	Several days	More than half the days	Nearly every day
Feeling nervous, anxious, or on edge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Not being able to stop or control worrying	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Worrying too much about different things	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trouble relaxing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Being so restless that it's hard to sit still	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Becoming easily annoyed or irritable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Feeling afraid as if something awful might happen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Graduate School Intentions

How do you think the cancellation of your summer research opportunity will impact your future plans in terms of...? Rate the following on a scale of 1-5.

	1 (greatly reduced the likelihood)	2	3 (did not change the likelihood)	4	5 (greatly increased likelihood)
...Likelihood of applying to graduate school	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...Likelihood of getting in to graduate school	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

How do you think the changes to your summer research experience will impact your future research plans? Rate the following on a scale of 1-5 with one being very low likelihood and 5 being very high likelihood.

	1 (very low likelihood)	2	3	4	5 (very high likelihood)
Likelihood of applying to graduate school	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Likelihood of getting in to graduate school	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

INDEPENDENT VARIABLES

When COVID-19 hit in March 2020, were you planning to do research in Summer 2020?

1. No
2. Yes, with a faculty mentor, for pay, but not through a formal program
3. Yes, with a faculty mentor, not for pay, and not through a formal program
4. Yes, with a faculty mentor, for pay, and through a formal program
5. Yes, with a faculty mentor, not for pay, but through a formal program
6. Other

Was/is the program at your own institution or another institution?

1. Home Institution
2. Another institution in a different state
3. Another institution in the same state
4. Another institution in another country

Which statement best characterizes the current status of your summer research opportunity?

1. Research opportunity was cancelled
2. Research opportunity is running as usual
3. Research opportunity has changed, but is still running

What is your gender/gender identity?

1. Man
2. Trans Man
3. Woman
4. Trans Woman
5. Genderqueer/Gender non-conforming
6. Other
7. Decline to answer

What is your race/ethnicity? (Pick just one)

1. Native American, non-Hispanic
2. Asian, non-Hispanic
3. African American, non-Hispanic
4. Native Hawaiian or other Pacific Islander, non-Hispanic
5. White, non-Hispanic
6. Hispanic
7. Multiracial
8. Other

What is your sexual orientation?

1. Heterosexual/Straight
2. Asexual
3. Bisexual

4. Gay
5. Lesbian
6. Pansexual
7. Not listed above

What is the highest degree or level of school your parent "1" completed? First indicate who your parent "1" is below

1. Mother
2. Father
3. Other

Highest degree or level of school your parent "1" completed:

1. No schooling completed
2. Some schooling, but less than 6th grade
3. 6th to 12th grade (no diploma)
4. Regular high school diploma
5. GED or alternate credential
6. Some college credit, but less than 1 year of college
7. 1 or more years of college credit, no degree
8. Associate's degree (e.g., AA, AS)
9. Bachelor's degree (e.g., BA, BS)
10. Master's degree (e.g., MA, MS, MEng, Med, MSW, MBA)
11. Professional degree (e.g., MD, DDS, DVM, LLB, JD)
12. Doctorate degree (e.g., PhD, EdD)

What is the highest degree or level of school your parent "2" completed? First indicate who your parent "2" is below

1. Mother
2. Father
3. Other

Highest degree or level of school your parent "2" completed:

1. No schooling completed
2. Some schooling, but less than 6th grade
3. 6th to 12th grade (no diploma)
4. Regular high school diploma
5. GED or alternate credential
6. Some college credit, but less than 1 year of college
7. 1 or more years of college credit, no degree
8. Associate's degree (e.g., AA, AS)
9. Bachelor's degree (e.g., BA, BS)
10. Master's degree (e.g., MA, MS, MEng, Med, MSW, MBA)
11. Professional degree (e.g., MD, DDS, DVM, LLB, JD)
12. Doctorate degree (e.g., PhD, EdD)

Have you ever had following experiences during COVID-19?

1. Had to move out of a dormitory or university housing due to COVID-19.
2. Experienced difficulties in traveling.
3. Lost your job permanently or temporarily.
4. Your family members lost their jobs permanently or temporarily.
5. You experienced a salary cut.
6. Your family members on whom you rely on for at least some financial support experienced a salary cut.
7. The amount of your scholarship was reduced.

8. Your scholarship was cancelled.
9. Payment of your scholarship was postponed.
10. You experienced racial/ethnic discrimination related to COVID-19.
11. You experienced domestic abuse during quarantine.
12. Those you live with acted irresponsibly with regards to social distancing.
13. You had to take care of others who were sick.
14. You worried whether your food would run out before you (or your household) got money to buy more.
15. The food that you or the adults in your household bought just didn't last, and you didn't have money to get more.
16. You or other adults in your household cut the size of your meals or skipped meals because there wasn't enough money for food.
17. You lost weight because there wasn't enough money for food.

Did you have in-state residency at that college/institution, or you were an out-of-state, or international student?

1. In-state student
2. Out-of-state student
3. International student

Based on the credit hours you have taken, what was your class level in Spring 2020?

1. Freshman/first year
2. Sophomore
3. Junior
4. Senior
5. Unclassified

If your institution uses a different GPA scale, please use the following table to convert your GPA to the 4-point scale:

Letter Grade	Percent Grade	4.0 Scale
A+	97-100	4.0
A	93-96	4.0
A-	90-92	3.7
B+	87-89	3.3
B	83-86	3.0
B-	80-82	2.7
C+	77-79	2.3
C	73-76	2.0
C-	70-72	1.7
D+	67-69	1.3
D	65-66	1.0
E/F	Under 65	0.0

Based on the 4-point scale, what was your GPA in Spring 2020 overall?

Were you conducting research during any point of the Spring 2020 semester, pre-COVID-19?

1. Yes
2. No

Has the cancellation of your research opportunity impacted you in any of the following ways? Check all that apply.

1. Lost my source of summer employment
2. Lost an opportunity to network with other students and professors

There is a special person who is around when I am in need.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
There is a special person with whom I can share my joys and sorrows.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My family really tries to help me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I get the emotional help and support I need from my family.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have a special person who is a real source of comfort to me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My friends really try to help me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I can count on my friends when things go wrong.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I can talk about my problems with my family.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have friends with whom I can share my joys and sorrows.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
There is a special person in my life who cares about my feelings.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My family is willing to help me make decisions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I can talk about my problems with my friends.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Do you have any of the following disabilities or medical conditions?

1. Learning disability (dyslexia, etc.)
2. Attention deficit hyperactivity disorder (ADHD)
3. Autism spectrum disorder
4. Physical disability (speech, sight, mobility, hearing, etc.)
5. Chronic illness (cancer, diabetes, autoimmune disorders, etc.)
6. Psychological disorder (anxiety, depression, PTSD, etc.)
7. Other
8. Not applicable

CLUSTERING VARIABLES

Please select your major from below.

1. Art, fine and applied
2. Classical and Modern Languages and Literature
3. English (language and literature)
4. History
5. Journalism/Communication
6. Media/Film Studios
7. Music
8. Philosophy
9. Theater/Drama
10. Theology/Religion
11. Other Arts and Humanities
12. Agriculture/Natural Resources
13. Animal Biology (zoology)
14. Biochemistry/Biophysics
15. Biology (general)
16. Ecology & Evolutionary Biology

17. Environmental Science
18. Marine Biology
19. Microbiology
20. Molecular, Cellular, & Developmental Biology
21. Neurobiology/Neuroscience
22. Plant Biology (botany)
23. Other Biological Science
24. Accounting
25. Business Admin. (general)
26. Computer/Management Information Systems
27. Entrepreneurship
28. Finance
29. Hospitality/Tourism
30. Human Resource Marketing
31. International Business
32. Management
33. Marketing
34. Real Estate
35. Other Business
36. Elementary Education
37. Music/Art Education
38. Physical Education/Recreation
39. Secondary Education
40. Special Education
41. Other Education
42. Aerospace/Aeronautical/Astronautical Engineering
43. Biological/Agricultural Engineering
44. Biomedical Engineering
45. Chemical Engineering
46. Civil Engineering
47. Computer Engineering
48. Electrical/Electronic/Communications Engineering
49. Engineering Science/Engineering Physics
50. Environmental/Environmental Health Engineering
51. Industrial/Manufacturing Engineering
52. Materials Engineering
53. Mechanical Engineering
54. Other Engineering
55. Clinical Laboratory Science
56. Health Care Administration/Studies
57. Health Technology
58. Kinesiology
59. Nursing
60. Pharmacy
61. Therapy (occupational, physical, speech)
62. Other Health Profession
63. Computer Science
64. Mathematics/Statistics
65. Other Math and Computer Science
66. Astronomy & Astrophysics
67. Atmospheric Sciences

- 68. Chemistry
- 69. Earth & Planetary Sciences
- 70. Marine Sciences
- 71. Physics
- 72. Other Physical Science
- 73. Anthropology
- 74. Economics
- 75. Ethnic/Cultural Studies
- 76. Geography
- 77. Political Science (gov't., international relations)
- 78. Psychology
- 79. Public Policy
- 80. Social Work
- 81. Sociology
- 82. Women's/Gender Studies
- 83. Other Social Science
- 84. Architecture/Urban Planning
- 85. Criminal Justice
- 86. Library Science
- 87. Security & Protective Services
- 88. Military Sciences/Technology/Operations
- 89. OTHER
- 90. UNDECIDED

What college/institution were you attending during Spring 2020?