Student demographic information.

	2018 CURE cohort (*n* = 19)	2019 CURE cohort (*n* = 21)	2020 CURE cohort (*n* = 22)	2020 comparison group (*n* = 26)
Gender				
Female	14	11	19	21
Male	5	10	3	5
Race				
White	11	10	9	16
Asian	4	6	6	5
Latino	3	4	5	3
Black	0	0	1	1
Multiracial	1	1	1	1
STEM major*				
Biology	8	7	13	9
Biochemistry	4	2	3	3
Chemistry	0	1	0	0
Computer science	1	2	0	4
Exercise science	0	0	0	1
Mathematics	1	2	0	0
Physics	0	3	0	2
Psychology	2	3	2	6
Other/Undeclared	3	1	4	1

*Primary major reported (many students reported an additional major/minor).

TABLE 2

2020 CURE students' responses on the Lab Course Assessment Survey (Corwin, Runyon et al., 2015).

	Strongly agree or agree (%)	Mean (SD)
Collaboration subscale *"In this course, I was encouraged to …"*		
Discuss elements of my investigation with classmates or instructors.	95.24	4.71 (0.56)
Reflect on what I was learning.	100	4.71 (0.46)
Contribute my ideas and suggestions during class discussions.	95.24	4.76 (0.54)
Help other students collect or analyze data.	80.95	4.19 (0.87)
Provide constructive criticism to classmates and challenge each other's interpretations.	90.48	4.61 (0.67)
Share the problems I encountered during my investigation and seek input on how to address them.	100	4.81 (0.40)
Discovery/Relevance subscale *"In this course, I was expected to …"*		
Generate novel results that are unknown to the instructor and that could be of interest to the broader scientific community or others outside of class.	71.43	4.10 (1.25)
Conduct an investigation to find something previously unknown to myself, other students, and the instructor.	85.71	4.62 (0.86)
Formulate my own research question or hypothesis to guide an investigation.	100	4.76 (0.44)
Develop new arguments based on data.	95.24	4.62 (0.59)
Explain how my work has results in new scientific knowledge.	90.48	4.38 (0.80)
Iteration subscale *"In this course, I had time to …"*		
Revise or repeat work to account for errors or fix problems.*	71.43	4.16 (0.90)
Change the methods of the investigation if it was unfolding as predicted.	61.90	3.68 (1.29)
Share and compare data with other students.	80.95	4.19 (1.12)
Collect and analyze additional data to address new questions or further test hypotheses that arose during the investigation.	33.33	3.00 (1.30)
Review or repeat analyses based on feedback.	71.43	3.85 (1.09)
Revise drafts of paper or presentation about my investigation based on feedback.	100	4.57 (0.51)
Overall subscale comparisons		
Collaboration subscale (Cronbach's α = 0.65)	n/a	4.63 (0.36)
Discovery/Relevance subscale (Cronbach's α = 0.63)	n/a	4.50 (0.53)
Iteration subscale (Cronbach's α = 0.80)	n/a	3.90 (0.75)
LCAS total score	n/a	4.35 (0.43)

Note. Data are from 21 of the cohort students who responded to the scale. All response options used a 5-point scale (strongly disagree to strongly agree).
*used the same question stem as Discovery/Relevance subscale.

TABLE 3

CURE student responses on STEM Community of Practice Index items.

Item ("To what extent …")	Pre-CURE	Post-CURE	p value
Do you feel you understand the scientific method? (Practice)	5.37 (1.09)	6.45(0.71)	0.000
Do you feel connected to the scientific community at the college? (Community)	4.39 (1.45)	5.94 (0.94)	0.000
Are you confident in your ability to be academically successful in your STEM major? (Domain)	5.63 (1.12)	6.19 (0.70)	0.000
Are you enthusiastic about pursuing your STEM major? (Domain)	6.13 (0.98)	6.45 (0.86)	0.017
Are you confident in your ability to conduct scientific research? (Practice)	5.02 (1.17)	6.06 (0.85)	0.000
Are you enthusiastic about conducting scientific research? (Practice)	6.13 (0.98)	6.45 (0.86)	0.011
Are you interested in pursuing a career in science? (Domain)	6.11 (1.07)	6.44 (0.83)	0.006

Note. Data combined from 2018, 2019, and 2020 CURE students, $N = 62$. All items measured on a scale from 1 (not at all) to 7 (very much). Community of practice elements that correspond to each item are listed in parentheses after the item. Values represent means and values in parentheses represent standard deviations. *P* values are from paired-samples t-tests comparing pre-CURE and post-CURE means. These analyses only include students from the cohort that had complete data at both time points.

TABLE 4

Relation among all outcome variables post-CURE.

	1. STEM CoP Index	2. Belonging to school	3. Science self-efficacy	4. Science identity	5. Intention to stay in STEM
1. STEM CoP Index	--				
2. Belonging to school	0.50***	--			
3. Science self-efficacy	0.69***	0.50***	--		
4. Science identity	0.71***	0.32*	0.35*	--	
5. Intention to stay in STEM	0.66***	0.33*	0.34*	0.61*	--

Note. 2020 CURE students, n = 22. †p ≤ 0.10 *p < 0.05 **p < 0.01 ***p < 0.001