Table S1. Chemtutorials Post Survey and Coding System.

Item number	Statement or question	Code
1	The chemtutorials project increased my awareness of issues related to diversity and inclusion in STEM.	Awareness
2	The chemtutorials project was inspiring and encouraging for me.	Inspiration
3	The chemtutorials project increased my awareness of what chemists actually do in their careers.	Awareness
4	The chemtutorials increased my awareness of the range of fields chemists can work in.	Awareness
5	The interview with my chemist(s) of color increased my motivation to persist in a STEM career.	Persistence
6	I experienced one or more inspiring moments during the chemtutorials project.	Inspiration
7	I have had major discussions about diversity in STEM in my other STEM courses.	Experiences
8	Before the completion of the project I was not interested in being required to complete a project relating to diversity in STEM.	Motivation
9	Before the chemtutorials project if I pictured a chemist in my mind they would have looked like me.	Belonging
10	I felt the class discussion was conducted well and allowed me to openly contribute and express my impressions and thoughts.	Experiences
11	After completing the chemtutorials project I feel more comfortable reaching out to a professional in a career area I am considering to seek out help and advice for my own career path.	Self-advocacy
12	The chemtutorials project increased my understanding of how the chemistry I am learning in the classroom is used to benefit society.	Awareness
13	The chemtutorials project increased my understanding of how the chemistry I am learning in the classroom is used to produce innovations in chemistry that have valuable real world impact.	Awareness
14	The chemtutorials project strengthened my feelings of belonging in STEM. §	Belonging
15	The chemtutorials project has changed my feelings of who belongs in STEM. §	Belonging
16	I felt the chemtutorials project was engaging. §	Engagement
17	I had anxiety about having a class discussion about diversity in a STEM classroom. §	Experiences
18	I was excited to complete the chemtutorials project. §	Engagement
19	I was surprised by the racial disparities in earned degrees in Chemistry or Nobel Laureates.	Awareness
20	I feel that that chemist(s) I interviewed really wanted to provide advice and guidance to help me successfully pursue a career in STEM.	Self-advocacy
21	I was surprised by the gender disparities in earned degrees in Chemistry or Nobel Laureates.	Awareness
22	I found that the advice the chemist(s) provided in the interviews were informative for my personal journey in STEM	Self-advocacy
23	I have experienced moments where I did not feel like I belonged in STEM.	Belonging
24	I have had experienced where someone told me by their actions or directly that I should not consider a career in STEM.	Micro-aggressions

25	I have experienced situations where I felt excluded in the STEM classroom.	Micro-aggressions
26	I will use the advice the chemist(s) I interviewed provided to foster my success in my chosen academic or professional career.	Self-advocacy
27	I would appreciate having more discussion about diversity in my STEM courses. §	Motivation
28	I would appreciate having more projects about diversity in STEM in my STEM courses.§	Motivation
29	After completing this project I would recommend that future students complete it as well. §	Motivation
30	If you could describe the chemtutorials project in one word, what would it be?	
31	Please list any other comments about the chemtutorials project that you would like to capture.	

§ Question was followed by "Please comment on why you selected your response"

Table S2. Interview Questions.

Can you tell us about your career and what a typical day looks like for you at work?
Can you tell us how you choose a career in chemistry and did you always see yourself as a chemist?
What accomplishments are you most proud of, and if you could pick one or two best, fun or inspirational moments from your career what would they be?
What challenges have you faced in pursuing a career in chemistry and how did you overcome them?
What have been some of the seminal resources that you have used to be successful in a career in STEM?
What do you enjoy most about your career and outside of your career in chemistry what other things do you participate in?
Group member question 1:
Group member question 2:
Group member question 3:
Do you have any advice and comments do you have for student pursuing STEM careers?

Table S3. Google Slides Questions.

Slide	Prompt
	Ground Rules
	We will have a respectful conversation
	It's okay to disagree but be cordial
	We will use I feel statement to provide our impressions
	We will discuss ideas, themes, and our observations
	We will listen and we will try to understand other students points of views
Groups	Each group needs a
	1. Time Keeper
	2. Writer(s)
	3. Presenter(s)
1	Define the following terms:
	Diversity,
	Belonging,
	Value
2	Our favorite part of the Chemtutorials project
3	3 new things we learned§
4	3 other facts I learned from researching
5	From interviews with my Chemists of Color I gained an appreciation for§
6	Before completing this project
	Had seen__Chemist of Color
	Had met__Chemist of Color
	Personally knew___Chemist of Color
7	Some common themes from the interviews we had were§
8	Before the Chemtutorials project I had conversations about diversity
	Often Sometimes Never
9	In what ways are we told that we BELONG in the room?
Day Two	Create a bumper sticker

§ Students were to list three things then provide further details about each topic listed

Table S4. Instructor developed bumper stickers presented to students.

Challenge the messages you have been sent in who belongs in the room
What you are learning right now is real and can be used to have a VALUABLE impact on society
Chemists do a LOT of really cool things!
Find a support structure, resources, and <u>many</u> mentors to help foster your success
Diversity matters and that means we have to be intentional in fostering it
Know that STEM can be very hard, but that doesn't mean you can't do it
Know that YOU BELONG in the room!

File S1. Methods for Chi-Sqaure analysis

Analysis of the Chemtutorials post survey was completed using R version 4.0.3. Survey results were analyzed to determine associations between gender, race, Hispanic ethnicity, and first generation-student status and students' feelings of belonging in STEM after completing the Chemtutorials project. Chi-squared ($\chi 2$; Yates correction applied where appropriate for cell frequencies < 5; tests of association were used to identify relationships between categorical responses and selected demographic characteristics [1]. Statistically significant chi-squared test results ($p < .05$) indicate that there is some association between the demographic variable and a set of survey responses. Additional Fisher's exact tests of independence were performed for chi-squared tests results reaching statistical significance ($\chi 2$ with $p < .05$). Similar to chi-squared tests, Fisher's exact tests of independence use observed proportions to determine whether there is an association between the demographic variables and survey responses. The combination of chi-squared and Fisher's exact tests allow us to identify instances in which variation in observed survey responses are statistically significantly different based on demographic group. Due to the small sample size (n=29), the data at hand did not meet key assumption conditions required for other statistical significance testing. Thus, survey responses were not assessed for differences in mean survey responses (t-test of means), Pearson's R correlation coefficients, or using any principal component analysis for thematic effects. Higher level tests of statistical significance will be possible with the additional collection of data from a follow up study.

For association tests, questionnaire items were collapsed to indicate either disagreement or neutrality ("Strongly disagree," "Disagree," "Neither disagree nor agree"), or agreement ("Agree," "Strongly agree") in response to the presented survey prompt. Demographic variable were used only as a means to assess if differences based on demographics identities were present in response to the chemtutorials project, and are not meant to represent identity of male, White, or CGC as the norm for comparison. All positive responses are of interest to the authors. Demographic variables were grouped as follows in Table S5:

1. McHugh, M.L. The chi-square test of independence. *Biochem. Med.* **2013**, *23*, 143–149.

Table S5. Sample Demographics.

Demographic Variable	**n**	**Percent**
Female	19	67.9
Male	9	32.1
Total	***28***	***100.0***
Non-White/BIPOC	12	44.4
White only	15	55.6

Total	***27***	***100.0***
Hispanic/Latino	5	17.9
Non-Hispanic/Latino	23	82.1
Total	***28***	***100.0***
First-generation College Student	4	13.8
Non-First-generation College Student	25	86.2
Total	***29***	***100.0***

*Note:*Percentages exclude respondents with no response to demographic questions

[1]Footnote 1: Demographic categories may not sum to 100.0% due to rounding error.

Table S6. Responses to Select Survey Questionnaire Items (n =29)

Questionnaire		Responses (as %)					
Category	**Prompt**	**Strongly Agree**	**Agree**	**Neutral**	**Disagree**	**Strongly Disagree**	**Total**
Awareness of Diversity, Chemistry, and Challenges	Increased awareness of what chemist actually do in their careers	**55.2**	**37.9**	**6.9**	**0.0**	**0.0**	**100.0**
Providing Inspiration	Chemtutorials project was inspiring and encouraging	34.5	34.5	20.7	10.3	0.0	100.0
	Experienced one or more inspiring moments during Chemtutorials project	13.8	51.7	24.1	6.9	3.5	100.0
Belonging and Experiences	Chemtutorials project strengthened feelings of belonging in STEM	27.6	37.9	31.0	3.5	0.0	100.0
	Experienced situations of feeling excluded in STEM classroom	20.7	20.7	17.2	31.0	10.3	99.9

Note: Responses exclude n=10 students in Chemtutorials Project who did not completed the exit survey.

[1]Footnote 1: Response categories may not sum to 100.0% due to rounding error.