

Supplemental Material

CBE—Life Sciences Education

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Appendix A: The PITS Survey

Project Ownership Content and Emotion

Rate the degree to which you agree or disagree with each statement

| | Strongly Disagree | Disagree | Neither Agree nor Disagree | Agree | Strongly Agree |
|---|-----------------------|-----------------------|----------------------------|-----------------------|-----------------------|
| My research will help to solve a problem in the world | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| My findings were important to the scientific community | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I faced challenges that I managed to overcome in completing my research project | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I was responsible for the outcomes of my research | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| The findings of my research project gave me a sense of personal achievement | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I had a personal reason for choosing the research project I worked on | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| The research question I worked on was important to me | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| In conducting my research project, I actively sought advice and assistance | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| My research project was interesting | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| My research project was exciting | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

In the table below you will find 5 different emotion words from a standardized emotion index. Think about the laboratory course you participated in and wherever relevant please indicate the extent to which each word describes your experience of that course

| | Strongly Disagree | Disagree | Neither Agree nor Disagree | Agree | Strongly Agree |
|------------|-----------------------|-----------------------|----------------------------|-----------------------|-----------------------|
| delighted | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| happy | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| joyful | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| amazed | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| surprised | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| astonished | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Self-Efficacy

Rate the degree to which you agree or disagree with the following statement concerning your confidence in your abilities to function as a scientist in your area.

| | Strongly Disagree | Disagree | Neither Agree nor Disagree | Agree | Strongly Agree |
|---|-----------------------|-----------------------|----------------------------|-----------------------|-----------------------|
| I am confident that I can use technical science skills (use of tools instruments and techniques) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I am confident that I can generate a research question to answer | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I am confident that I can figure out what data/observations to collect and how to collect them | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I am confident that I can create explanations for the results of the study | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I am confident that I can use scientific literature and reports to guide my research | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I am confident that I can develop theories (integrate and coordinate results from multiple studies) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Networking

Rate the degree to which you agree or disagree with the following statements dealing with the discussion of your research

| | Strongly Disagree | Disagree | Neither Agree nor Disagree | Agree | Strongly Agree |
|---|-----------------------|-----------------------|----------------------------|-----------------------|-----------------------|
| I have discussed my research in this course with my parents (or guardian) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I have discussed my research in this course with my friends | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I have discussed my research in this course with students who are not in my class but in my institution | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I have discussed my research with students who are not at my institution | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I have discussed my research in this course with professors other than my course instructor | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Intent to Stay in the Sciences

Rate the degree to which you agree or disagree with the following statements concerning your future intentions and career choices

| | Strongly Disagree | Disagree | Neither Agree nor Disagree | Agree | Strongly Agree |
|--|-----------------------|-----------------------|----------------------------|-----------------------|-----------------------|
| Following this course, I intend to enroll in similar laboratory research courses | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| In the future, I intend to enroll in a science related graduate program | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| MY future career will involve collecting, analyzing and reporting scientific data. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I intend to pursue a science related career | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| In the future, I would like to be a research scientist | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |