# Supplemental Material CBE-Life Sciences Education

Hanauer et al.

### **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	0	0	0	0	0
My findings were important to the scientific community	0	<b></b>	0	0	0
I faced challenges that I managed to overcome in completing my research project	0	©	•	0	0
I was responsible for the outcomes of my research	0	0	0	0	0
The findings of my research project gave me a sense of personal achievement	0	0	0	0	0
I had a personal reason for choosing the research project I worked on	0	0	•	0	0
The research question I worked on was important to me	0	0	0	0	0
In conducting my research project, I actively sought advice and assistance	0	0	•	0	0
My research project was interesting	0	0	0	0	0
My research project was exciting	0	0	0	0	0

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

		Neither Agree nor							
	Strongly Disagree	Disagree	Disagree	Agree	Strongly Agree				
delighted	0				0				
happy	0				0				
joyful	0				0				
amazed	0		0		0				
surprised	0				0				
astonished	0								

### 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)	•	0	0	0	0
I am confident that I can generate a research question to answer	•	©	•	©	0
I am confident that I can figure out what data/observations to collect and how to collect them	•	<b>©</b>	•	©	
I am confident that I can create explanations for the results of the study	•	0	•		
I am confident that I can use scientific literature and reports to guide my research	•	©	•	©	
I am confident that I can develop theories (integrate and coordinate results from multiple studies)	•	•	•	•	•

### Science Identity

## Rate the degree you agree or disagree with the following statements concerning your sense of yourself as a scientist who undertakes research activities

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
I have a strong sense of belonging to the community of scientists	0	0	0	0	0
I derive great personal satisfaction from working on a team that is doing important research	©	©	0	<b>(</b>	©
I have come to think of myself as a 'scientist'	<b>O</b>		0		
I feel like I belong in the field of science	<b>O</b>		0	0	
The daily work of a scientist is appealing to me	0		0		

### Scientific Community Values

Please read each description and think about how much each person is or is not like you. Check the answer that best reflects how much the person in the description is like you.

	Not like me at all	Not like me	A little like me	Somewhat like me	Like me	Very much like me
A person who thinks discussing new theories and ideas between scientists is important	0	0	0	0	0	0
A person who thinks it is valuable to conduct research that builds the world's scientific knowledge	•	©	0	•	0	0
A person who thinks that scientific research can solve many of today's world challenges	0	©	0	•	0	0
A person who feels discovering something new in the sciences is thrilling	0		0	0		

### 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)	0	0	0	0	©
I have discussed my research in this course with my friends	0	0	0	0	0
I have discussed my research in this course with students who are not in my class but in my institution	©	0	0	©	•
I have discussed my research with students who are not at my institution	•	0	0	<b></b>	
I have discussed my research in this course with professors other than my course instructor	•	0	0	<b>(</b>	©

#### 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	0	0	0		0
In the future, I intend to enroll in a science related graduate program	•		•	•	
MY future career will involve collecting, analyzing and reporting scientific data.	©		•		<b>©</b>
I intend to pursue a science related career	0		0		0
In the future, I would like to be a research scientist	0		0	0	0