

# Supplemental Material

*CBE—Life Sciences Education*

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## **Faculty Interview Protocol**

- What is your teaching philosophy?

### **Comparison of Semesters**

- Comparison of present semester to past semester
  - Curriculum
  - Pedagogy
  - Assessment

### **General Reflection on the current Class**

- In present semester, what went well? What were the challenges?
  - Student preparation
  - Student resistance/engagement
  - Student cohesiveness in groups
  - Timing
  - Student comprehension of material
  - Difficulty of GAE tasks
  - Social/technical/pedagogical challenges
  - Getting students to think quantitatively
  - Use of excel
  - Internet issues in the large lecture hall
- Please comment on the following:
  - Videos/slide content students watched to prepare for GAEs
  - Pre GAE quizzes
  - Assigning roles in the groups
  - Whole-class discussions at the end of GAEs
  - Contributions of GTAs, UTAs, GSS students

### **Questions about GAEs and lecture?**

- Which of the following classroom activities did you use, and in what ways (examples)?
  - Memorization vs conceptual understanding
  - Developing critical thinking
  - Developing and Using Models
  - Planning and Carrying out Investigations
  - Analyzing and Interpreting Data
  - Using Mathematics and Computational Thinking
  - Constructing Explanations
  - Engaging in Argument from Evidence (Decision making based evidence)
  - Obtaining, Evaluating, and Communicating Information
  - Work in groups
  - Scientific writing
  - Understand the dynamic nature of science
  - Connection to everyday life
  - Scientific reading
  - Develop creativity and innovation
  - Develop interdisciplinary nature of science
  - Understanding of what scientists do
  - Historical views

- Motivation to continue in the field

### **General Questions about the Class**

- What kind of social interactions do you aim to establish in the class? Explain briefly how you are doing each type.
  - Instructor-student (individual)
  - Instructor-student (group)
  - Student-students (group)
  - Student-students (whole class)

### **Questions to You as an Instructor**

- How do you build the course assessments? Do you use any alternative assessment?
- Did your love for teaching increase or decrease with implementing new techniques?
- Did you use any resources inside or outside of the university to learn skills to enhance your teaching? Explain.
- Do you belong to any community around teaching in the university or outside of the university?
- How do you divide your time between research and teaching? Are you concerned about being able to do a good job at both?

### **Comparison of Semesters**

- What would change about the course in a future semester?
  - Curriculum
  - Pedagogy
  - Assessment

### **More questions to consider if not addressed during the interview:**

- How do instructors go about implementing student-centered teaching approaches in auditorium settings in large-enrollment courses?
- How are they supported in doing so?
- How are issues of student resistance addressed?
- How are concerns from students and instructors addressed in revisions to the course?
- How are organizational problems related to the experimental setting and the innovative nature of the activities addressed?

### **Is there anything else you would like to comment on?**