

# Supplemental Material

*CBE—Life Sciences Education*

Hayward *et al.*

## **Undergraduate Research Advisor Interview Protocol**

### **Interview questions**

Thank you for participating. The goal of the study is to understand better what goes on in students' undergraduate research experiences and how advisors work with undergraduates. We also want to help the [program] to improve these opportunities for students and improve their support of students' research advisors.

Your participation in this study is voluntary. You may refuse to answer any question at any time. Your responses are confidential. You will not be identified by name in any reports and findings will be reported in the aggregate. Please review and complete the informed consent form.

Do I have your permission to record the interview? Microphone ON.

### **Background Information**

- In which department do you work?
- What is your rank? (e.g., professor, assistant professor, graduate student, postdoc, etc.)
- How many people are in the lab group? (ask about: # undergraduates, # graduates and # postdocs)
- How many years/semesters have you worked with undergraduate research students?
- How many undergraduate research students are you currently supervising? How long have you worked with that student?
- Do you plan to continue serving as an advisor to [program] undergraduate research students? Why or why not?
- How did you “find” a [program] student to work with you on your research?

### **Nature of the Research Project**

- Give me a brief overview of the project that your undergraduate research student(s) has been working on – remember I am not a biologist! (or whatever)
- And how is that project going? Do you feel the student has made some progress?
- How much time does the student spend in the lab each week?
- What does the student do in the lab?

### **Student Gains from Research**

- What do you think undergraduates get out of doing research: personally, professionally and scientifically?

(e.g., listen for/probe for: skills, knowledge, thinking and working like a scientist, changes in how students learn, personal growth, self-confidence, perseverance, teamwork, career gains/plans)

### **The UR experience: Lab interactions**

We're interested in how the everyday work in your research group or laboratory took place.

- Tell me about the process of preparing your student to conduct research.  
Probe for: setting rules and expectations, teaching techniques, journal articles
- What kind of support did your student need at the beginning of the research experience? How did you provide that support?
- What kind of support does your student need now? How do you provide that support?
- Describe your interactions with your student. How often do you talk/meet? What do you discuss? (probe for: discussing data, interpreting findings, planning next steps, help with/reviewing posters, educational/career advice)
- How are interactions in the lab structured? Do you have regular meetings? How do lab members communicate with each other about their work?

#### Preparation for Advising

- How would you rate your preparation for advising undergraduate research students?
- In what ways do you feel well prepared to work with undergraduates?
- In what areas could you use more preparation or support?
- What has most helped your ability to supervise undergraduate research students?

#### [Program] Mentor Training

- Did you attend the [program] undergraduate research mentor training?
- Do you use anything from the training in your work with undergraduate students? What do you use? Can you give me an example?
- What did you learn from the training?
- What was most helpful to you about the training?
- What could be improved about the training?

#### Costs and Benefits of Advising Undergraduate Students

- What are the benefits of advising undergraduate students in the lab?
- Have you gained anything from working with undergraduates? (probe for personal, professional gains: mentoring or teaching gains, research productivity, patience, preparation for future faculty career, etc.)
- What are the costs, or drawbacks, to advising undergraduate students?

If a graduate student or postdoc, do you think your experience advising undergraduate researchers will be useful in your future career? Why or why not?

#### Advice

- If you could give advice to the people in your research group about how to work with undergraduates, what would you tell them?
- If you could give advice to the [program] staff about their program or training, what advice would you give?