

Supplemental Material

CBE—Life Sciences Education

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Table S1. Example assessment approaches for experiential learning (EL) activities

Job Simulations	Site Visit	Shadowing	Internship	Alumni Facilitators
<p>Virginia Tech, Job Sim (multiple career paths), Quantitative (Data Collection) Prospective Assessment of 101 attendees: 40% of attendees participated in more than one job simulation 4 job simulation attendees went on to pursue more extensive summer or part-time internships</p>	<p>UC Davis, Site Visits (Industry and Government), Quantitative Survey Reflective Survey, 5 point Likert scale (n = 15) 77% agreed that "This trip increased my interest in industry careers" 77% agreed that "This trip increased my confidence in pursuing an industry career" 93% agreed that "After this trip, I am more aware of the career prospects available to me" 100% agreed that "Overall, I found this trip informative"</p>	<p>UC Davis, Shadowing, Qualitative Survey Reflective Q: What were your key takeaways from the experience? Quote #1: "I want to work in an industry-based lab instead of an academic lab. The job shadow gave me a taste of the difference between industry research and academic research." Quote #2: "I have been able to determine I want to work in a research lab and not a service lab.... I also have a better understanding for the importance of the service side as a revenue generation stream."</p>	<p>UNC Chapel Hill, Internship, Qualitative (Focus Group) Prospective Focus group feedback Quote: "I feel like everybody's internship experience is going to be a little bit different and it's kind of on the participant to craft their own route. What IMPACT is really there for is to set up those connections and set up the relationships, or help you initiate relationships with businesses that are interested in you training with, because every intern is going to want something different out of their experience...And in some ways it's your duty to craft that for yourself."</p>	<p>UC Davis, Alumni Facilitator Survey, Qualitative Reflective Q: What activities have you enjoyed as a FUTURE partner? Quote #1: "I found out that my FUTURE seminar was one reason a student applied for the science policy fellowship I discussed. It was great to see that he pursued it and is now positively impacting California through his work on state legislation." Quote #2: "I really enjoyed fielding questions big and small from the entire group during a FUTURE program workshop. The energy and thoughtfulness in the room was quite the thing to experience. It's rewarding to get to know and help out these future colleagues and collaborators."</p>
<p>Virginia Tech, Job Sim (multiple career paths), Quantitative Survey (Data Collection) Experiential, Reflective, Prospective Survey, 5 point Likert scale (n = 20 trainees, 3 job sims): 100% of respondents reported increased understanding of job duties, culture, and skills required to pursue the career path of focus. (experiential) >85% of respondents reported that the activities help them determine if the career was a good fit, and provided them with tools for next steps in pursuing that career path. (reflective) >90% reported they would pursue additional professional development training as a result of their experience. (prospective) 100% would recommend the mini-internship to a colleague or classmate</p>	<p>Vanderbilt, Site Visits (Industry), Qualitative Survey Experiential, Reflective Q: What were the most valuable things you learned/gained from this program? Quote #1: "Being able to gauge the culture of a company in person - it's one thing to read about these companies, but it's completely different interacting with the scientists and seeing how the scientists interact with each other first hand." Quote #2: "I learned that I would rather work for a large pharma company than a start-up which I did not previously realize and that the need for a post-doc seems to be very company specific." Quote #3: "The very valuable thing I learned from this program is that not all industry/pharmaceutical companies are the same. I felt like every company we visited was very different from the others. We saw a variety of cultures, interests, flexibility on innovation, automation, etc. This helped to enlighten me on the field and help narrow my interests..."</p>		<p>Vanderbilt, Internship, Qualitative Survey Experiential, Reflective, Prospective Q: What valuable things did you learn from this internship experience? Quote #1: "I learned about the importance of patient advocacy especially when it comes to government funding. I also was able to experience the passion and drive patients and families have to contributing to research." Quote #2: "I learned from observing great organizational and leadership techniques." Quote #3: "How to reframe my researching skills to evaluate policy data versus scientific data. Many policy programs are tracked and reported on using statistical methods similar to scientific reporting. I learned how to summarize this often dense information for my colleagues" Quote #4: "This internship also helped me develop useful soft skills for successful negotiation." Quote #5: "Planning a course so that the students actually learn, interact and apply."</p>	
<p>Cornell, Job Sim, Qualitative Survey Experiential, Reflective Q: Please give us a short summary/write up about your experience and what you got out of the program Quote: "Apart from the knowledge and hands-on experience, the completion of the program really helped boost my confidence in exploring areas outside my "comfort zone."</p>	<p>Vanderbilt, Site Visits (undergraduate teaching, pharmaceutical industry, STEM policy in DC, 2018), Quantitative Survey Formative Number of respondents/participants varied: 88% of participants responding rated their overall experience as excellent with the remaining 12% rating it "good" (n=17) (Choices: excellent, good, fair, poor) 94% of participants who responded strongly agreed that the program was a valuable use of their time (n=75) (Q: The program was a valuable use of my time: strongly agree, agree, somewhat disagree, disagree) 100% of participants who responded reported the program met their expectations (n=17) 100% of participants who responded indicated they would recommend the program to others (n=75)</p> <p>Cornell, Site Visit, Qualitative Survey Reflective, Prospective Q: Please tell us how your participation in this activity...?: Quote: "At the start of my academic career, I never considered that entrepreneurship could be an option for someone like me. ...being a Black woman, I saw few examples of people who look like me pursuing careers like these. I have become enamored with the idea of pursuing academia and entrepreneurship concurrently and participating in the BEST Silicon Valley Entrepreneurship Trek gave me a clearer idea of what this could look like and where I would start. [It] was extremely inspiring and opened up my career path to a whole new dimension."</p>	<p>Rutgers, Shadowing, Qualitative Survey Experiential, Reflective Q: Please comment on how your skill level has changed due to these relationships Quote #1: "My overall knowledge of Med Affairs and in terms of a pharma company has significantly improved. Learning from classes and books doesn't do it justice. Hands on learning was more valuable to me and opened my eyes to the positions I would like to do." Quote #2: "My skill level has greatly improved and I feel much more confident after spending time in the field with biosafety professionals that this is a long term career that I would like to pursue. I found that after shadowing, that I learned a great deal about how to handle difficult situations and communicate more effectively both in a meeting environment and in a training environment."</p>	<p>UCSF, Internship, Survey Prospective Q: What were the most valuable things you learned/gained from this experience? Quote #1: "One thing I learned from this experience is the variety of fellowships that PhD grads can apply for if they are interested in science policy... Working primarily in research, knowing what other career opportunities exist or what they might look like is invaluable, and everyone we met seemed like they would be great to reach out to with questions navigating a science policy career in the future. And I think the number one key takeaway was: There is no one set path to a career in science policy." Quote #2: "The UCSF Career Exploration trip to DC was incredibly valuable for my professional development. I learned more about the field of science policy in just a few days than I would have in a year of self-guided career exploration. In particular, I gained a lot of insight into the federal government framework, and the wide breadth of science policy positions."</p>	<p>Rutgers, Unsolicited Feedback Qualitative Quote #1: "It was also really fun to meet others who had pivoted into policy work, and refreshing to speak with graduate students interested in exploring policy/advocacy. Thank you so much for all your efforts in organizing this event and always encouraging us to explore!" Quote #2: "I have already had a few of the attendees reach out to me on LinkedIn to connect! I also want to thank you for bringing the PhD's in to us for the visit. I was very impressed with their interest in the industry and how engaged everyone was. As I mentioned, I will definitely be sharing our experience with the PhD's with my management to see if there is any interest in starting a post-doc program."</p>