The IR+A Competition was held in conjunction with OSU's annual multidisciplinary undergraduate research forum with the final evaluation process limited to presenters and faculty judges. Organizing the IR+A Competition as a standalone event such as the Texas Student Research Showdown (Reichle 2019) is worthy of consideration. Establishing the IR+A Competition as a standalone event could potentially increase engagement by providing all university community members the opportunity to review submissions and cast their vote using a secure institutional platform. Other institutions should consider implementing an IR+A Competition to illustrate and celebrate undergraduate research diversity on their campuses.

References

Cuff, Alison, Ying Lou, Jiang Zhigang, Michel Baguette, Simon Blanchet, Jenny Clobert, Luke Jacobus, Jacqueline Mazzi, and Josef Settele. 2019. "BMC Ecology Image Competition 2018: The Winning Images." *BMC Ecology* 19:11. doi: 10.1186/s12898-019-0226-z

Office of Undergraduate Research & Creative Inquiry (UR&CI). 2020. Columbus: Ohio State University. Accessed October 16, 2020. https://ugresearch.osu.edu/our-ci-initiatives/initiatives-image-of-research-post-deadline-date

Reichle, Robert V. 2019. "Student Research Showdown: A Research Communication Competition." *Scholarship and Practice of Undergraduate Research* 2(3): 45–51. doi: 10.18833/spur/2/3/9

University of Leicester. n.d. "Images of Research." Accessed October 16, 2020. https://le.ac.uk/research/images-of-research

University of Saskatchewan. n.d. "Research in Images." Accessed October 16, 2020. https://research.usask.ca/our-impact/research-in-images.php

A Peer-Mentoring System as a Nontraditional Approach to STEM CUREs

Mark Lubkowitz, Cierra Pierce, and Tabitha Finch
Saint Michael's College/Vermont Biomedical Research Network, mlubkowitz@smcvt.edu

doi: 10.18833/spur/4/2/4

Most faculty members can still recount the summer or year when their lives changed as the result of working in the lab or field, and most are eager to provide similar opportunities for their students. It is well documented that research experiences are developmentally powerful, transformative, and significantly influence a student's decision to pursue graduate study and a STEM career (Eagan et al. 2013; Linn et al. 2015). The challenge is one of scale. At most institutions there is not enough lab space, equipment, faculty time, or funds for every student to engage in research. Course-based undergraduate research experiences (CUREs) address many of these limitations, as they are scalable and available to all students. However, the inclusive nature of CUREs lowers the quality of mentoring; it is, after all, harder to mentor twenty students than it is to mentor two.

At Saint Michael's College, a small undergraduate liberal arts institution, the challenge of quality mentoring inherent in CUREs is addressed using near-peer mentoring. Near-peer mentoring is when an individual completes a course and then serves as a mentor in subsequent iterations (McKenna and Williams 2017). In an undergraduate institution, this can be as simple as a third- or fourth-year student working with a second-year student. Through a CURE developed for a 20-person Molecular Genetics lab course, a widely adoptable model has been created for quality STEM mentoring.

Students enrolled in Molecular Genetics, mainly second-year students, are early in their development, and most of them are embarking on their first sustained research project. Over the course of the semester, many learn that they love bench work, whereas others discover that molecular lab work is not their vocation—these are both worthwhile outcomes. Invariably some students develop a hunger for lab work, and near the end of the semester, two to four are recruited to continue as independent researchers with the instructor over the summer and/or subsequent semester. After this duration of time in the lab, this cohort of researchers returns to the classroom to serve as near-peer mentors and teaching assistants (TAs) as well as to work alongside the professor. This annual developmental progression reinforces the learning of the advanced students, and their participation in the CURE provides considerably more opportunities for authentic mentoring through individual conversations, brainstorming, problem-solving, and role-modeling.

The addition of near-peer mentors as TAs increases the number of interactions in the lab course, because there are more teachers present. These students are effective as teachers because their narratives are generationally tangible and powerful, with their successes and struggles still fresh in their minds. Beyond clarifying content, these mentors inspire their fellow students, as noted by Cierra Pierce, a coauthor of this vignette and a near-peer mentor. She says, "At the beginning of my sophomore year, I looked up to my TA and thought, 'I can never do that,' but the way he interacted with us made me see him as a peer and think, 'I could do that one day, too.'" Her comment captures so much of what makes this approach work; the progression from student to researcher to near-peer mentor is an efficient, developmentally appropriate path that nurtures promising students while leveraging their experiences to effectively inspire an entire class as well as the next generation of peer mentors.

References

Eagan, Kevin M. Jr., Sylvia Hurtado, Mitchell J. Chang, Gina A. Garcia, Felisha A. Herrera, and Juan C. Garibay. 2013. "Making a Difference in Science Education: The Impact of Undergraduate Research Programs." *American Educational Research Journal* 50: 463–713. doi: 10.3102/0002831213482038

Linn, Marcia C., Erin Palmer, Anne Baranger, Elizabeth Gerard, and Elisa Stone. 2015. "Undergraduate Research Experiences: Impacts and Opportunities." *Science* 347: 627–633. doi: 10.1126/science.1261757

McKenna, Lisa, and Brett Williams. 2017. "The Hidden Curriculum in Near-Peer Learning: An Exploratory Qualitative Study." *Nurse Education Today* 50: 77–81. doi: 10.1016/j.nedt.2016.12.010

"Calling an Audible": Reflections on a Student-Created Sports Podcast

Danielle Johannesen
University of Minnesota Crookston, johan259@crk.umn.edu

doi: 10.18833/spur/4/2/10

In American football, "calling an audible" refers to a quarterback spontaneously changing a play at the line of scrimmage. When successful, calling an audible may enable a team to seize an unexpected opportunity. An element of risk is involved, but the rewards can be tremendous. In spring 2018, a group of students in the author's Writing in Your Profession course at the University of Minnesota Crookston became interested in podcasting. Two students, Zach Greenberg and Greg Johnson, envisioned a sports-themed podcast recorded on campus. They felt that a show written and hosted by college students would appeal to college-aged listeners and others. They saw potential for the podcast continuing in future years, with new students hosting the show. The author, who specialized in writing, felt confident mentoring and assessing the students in the storytelling, content writing, and oral communication skills required for a podcast. However, she had no experience in recording, producing, or editing a podcast. Nevertheless, the project, dubbed "Calling an Audible," proceeded.

A small grant was secured through a campus-level program, the Crookston Student Research and Creative Works Fund, which supports undergraduate research. The funding application included research outcomes focused on oral communication strategies, storytelling, and the podcasting medium, with students leveraging that research in an applied setting. James Pogatshnik, a campus Media Services professional, was consulted. Pogatshnik supported the project and suggested using the campus audio booth to record episodes. He offered to help the students edit and produce professional-quality episodes for online streaming or download. The author helped the students craft a mission statement, write content, develop hosting personas, and promote the show, and Pogatshnik emerged as a significant mentor for Greenberg and Johnson as well. Both students described working with Pogatshnik as "eye-opening" in terms of learning about audio production and technology.

Since spring 2018, the students have recorded a season of episodes each semester (see Greenberg and Johnson 2020). Each episode runs about 30 minutes, and the students record one episode every one or two weeks. Research is critical in the students' episode preparation; they spend hours researching sports stories and analyzing statistics. The author worked with Greenberg and Johnson to design business cards for distribution at a campus research fair during the spring 2019 semester. Greenberg and Johnson worked with another student to design a logo for the show and developed a Twitter page to advertise the podcast. Recently, Crookston's Liberal Arts and Education Department agreed to sponsor the podcast so that the program could continue. This sponsorship requires about $100 in hosting fees per year, illustrating that, with support from campus media staff, undergraduate projects such as this one require minimal financial resources.

"Calling an Audible" sparked opportunities for team members and the campus more broadly. Although recent pedagogical scholarship has documented the benefits and occasional drawbacks of using podcasts as teaching tools, scholars have few examples of original, multiseason podcasts created by university students. "Calling an Audible" is unique as an ongoing, multiyear project aimed at a real audience. As new students host the show, episodes can be used as artifacts to qualitatively analyze student learning over the course of many years. Hosting platforms allow for tracking numbers of listeners; this metric is one way to measure the success of the show. For example, as of October 2020, the number of all-time listeners was 243, with 57 percent of listeners from the United States. The students track and document this data. The goal is to gather and analyze five years of data in a larger, student-led research project. The podcast project also reveals the powerful potential of collaboration among faculty, staff, and students. These groups are absolutely essential to the project. Simply asking questions and learning more about talents of non-instructional staff led to the emergence of an audio booth on a small campus in northwestern Minnesota as a laboratory for high-impact learning, where "Calling an Audible" became both a sports podcast and a pedagogical mind-set.

Reference

Greenberg, Zach, and Greg Johnson. 2020. *Calling an Audible*. https://callinganaudible.podbean.com/