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Final Report for VOICE Grant: Geology / Science & Civic Engagement

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Overview: This project focused on bringing together undergraduate students from both STEM and Humanities fields to discuss societal and ethical considerations at this intersection. The program evolved from a workshop series with assigned readings throughout the quarter to a book club. The students chose between two books, based on the themes, “mining and society,” and “astronomy, science and inclusivity.” These themes guided the discussion for each book, which consisted of Paying the Land by Joe Sacco and The Disordered Cosmos by Chanda Prescod-Weinstein.

An important component of our program was to provide students with physical books, so that even in a virtual environment, they would have a *tangible* connection to the program. Fortunately, this past fall, we were able to deliver in-person workshop meetings, which were well-attended and particularly appreciated by students who had been unable to enroll in a majority of in-person classes. In all, the students enjoyed the discussions and were relatively content with the program format, but most were unable to complete their books by the end of the fall quarter because of their other responsibilities. With our upcoming 2022 VOICE grant, we plan to continue these discussions and expand our program to include guest speakers and a reflections showcase.

Objective: The major goal of our book club was to initiate meaningful discussions around the central theme of *Science and Civic Engagement*, to engage undergraduates in these concepts and encourage them to question and challenge traditional approaches to science. These meetings were guided by graduate and postdoctoral mentors, who provided expertise, context and discussion questions.

Highlights: The students were strongly engaged in the discussions and brought novel and bold perspectives to the meetings. In general, our discussion regarding resource extraction centered on the need for mining and oil, alongside the responsibility of such industries to contain pollution, sustainably and responsibly extracting resources and positively supporting and investing in local communities, including indigenous societies. In discussing the dominant voices in science, students explored the racism, colonialism and sexism that is deeply embedded in many academic disciplines, and shared their frustrations with limited inclusivity and diversity, as well as ideas to improve accessibility. The major motivation for these conversations was to question scientific paradigms and approaches that rely on “facts” and “truth,” when so many of these are both shaped by scientists’ own opinions and experiences, and in turn, shape our society. As the majority of students in our program were first and second year undergraduates, many of them appreciated this unique opportunity to discuss these ideas, both outside of a formal teaching environment and more candidly that they felt possible in a classroom. These students also appreciated that we provided food at the meetings, as that was one less thing that they had to worry about during their day so that they had dedicated time to attend, and many students deal with food insecurity on a daily basis.

Challenges: Our first challenge in our program was recruiting students early enough in the quarter. With the excitement and logistics of returning to in-person, students had numerous opportunities. Our program had approximately thirty students by week four, and we remained open for others to join. Following distribution of books on campus, we held in-person meetings that were generally well-attended but difficult to organize around numerous student and mentor schedules. We therefore settled on multiple meeting slots each week, with an average of five to seven students in attendance at each meeting time. This model worked well and was preferable to meeting outside of class hours, e.g., late-evening or weekends. Another major challenge was sufficient time to read the books. As we had chosen to recruit at the beginning of the quarter, to ensure student retention (compared to recruiting in the summer), they had only part of the quarter to complete the book. To address this, we applied for, and were generously awarded, a continuing VOICE grant.

Future: We look forward to completing this program throughout the 2021-2022 academic year, which will allow students an adequate amount of time to read and discuss the books. As a year-long workshop, we also hope that students will develop lasting connections and friendships, and that become comfortable engaging in interdisciplinary conversations in their future endeavors.

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