



Creating a STEM Diversity Collection in an Academic Science and Engineering Library

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Introduction

Historically excluded populations are underrepresented in STEM disciplines [1-3]. One action that academic science and engineering libraries can take to address this inequity is to adopt policies and follow through on efforts to diversify their collections by purposefully acquiring items that spotlight the stories and contributions of historically excluded communities in STEM fields.

This article describes the efforts at Arizona State University to create a STEM Diversity Collection at their academic science and engineering library using the seed money from a donation. In addition to describing the creation of this collection, this article describes the challenges and lessons learned along with the development of a collection development philosophy for maintaining and growing the collection.

Background

Academic libraries are vital to supporting the goals of equity, diversity, and inclusion (EDI) in higher education [4]. Diversity and inclusiveness are operational values and goals in virtually all United States research libraries [5]. Indeed, leaders in academic libraries see themselves as personally responsible for encouraging EDI initiatives in their libraries [6]. Similarly, academic organizations, including the Association of College and Research Libraries (ACRL) [7] and the American Society for Engineering Education (ASEE) [8] recognize the importance of diversity to not only libraries but also entire professions. Publicizing EDI initiatives in libraries is important as it “projects that the library or organization is working toward a climate of trust, collaboration, productivity, innovation, shared power, and creativity” [9].

One way in which libraries effect these goals is through their collection development policies [5]. A good collection development statement is essential to creating a robust collection that considers both its users’ needs and the mission of the institution [10]. If diversity is to be a key part of collection development, then a separate statement outlining what constitutes a diverse collection is similarly needed [10]. Libraries will frequently label them as “collection development diversity policies,” “collection development diversity statements,” or similar language. These diversity statements can include language simply acknowledging the value of diversity in library collections [11] or contain references to ACRL’s standards for the cultural competency of librarians [12]. Some even incorporate bold language about direct actions the library will take to diversify their collections by “acquiring and promoting content created by historically oppressed, underrepresented, and underserved communities that support and honor the diversity in the university and the larger global society” [13].

In addition to collection development diversity statements, librarians can promote diverse resources through library guides. For STEM librarians, this can be an important tool. Suggestions for diverse STEM readings and resources can be found as part of larger library guides about

general engineering resources [14], about equity, diversity, and inclusion in science and engineering [15], and about diversification and decolonization of the curriculum [16].

Beyond support through policy statements and library guides, librarians have also taken analytical roles in evaluating the diversity of their collections. These efforts to identify the diverse nature of collections include examining LGBTIQ+ representation [17], auditing a collection of play scripts [18], analyzing the representation of indigenous and global south populations [19], and transforming a children's literature collection [20]. STEM librarians have also incorporated principles of DEI into their library instruction [21].

Despite the desire to diversify collections, academic librarians encounter a number of barriers to their goals including inequities in the publishing industry, their own biases, and a lack of time and money [22]. The catalog itself can be a barrier as it lacks sufficient information to determine what material would be considered diverse within the library's specific definition [10] or even provide so much information that sifting out the relevant material is difficult to perform due to the imprecision of cataloging and keyword schemes [23,24].

The importance of science and engineering librarians' undertaking DEI initiatives should be manifest. Even with recent efforts and gains, historically excluded populations—Black/African American, Hispanic/Latinx, and Native American/Alaskan/Hawaiian—show persistently lower retention and degree attainment in STEM fields than Asian and white students [2]. This disparity in degree advancement is consistent for both undergraduate and graduate students [1,2]. Because we, as librarians, “play a vital role in supporting strategic goals for diversity,” we should use whatever tools are available to us to play this role effectively [4]. One of the tools that we can control and directly influence is collection management and development [4]. Let us examine one small effort to effect this change.

Creating the STEM Diversity Collection

In March 2021, Arizona State University received a targeted donation of just under \$1,500 for the purchase of “monographs” for Noble Library, the science and engineering library on its Tempe campus. Instead of using the money to purchase a few new print volumes for the library, we elected to use the funds to create a curated collection for the library spotlighting the contributions and experiences of scientists, researchers, engineers, and technologists from historically excluded communities and populations.

Communication and soliciting suggestions

After making the decision to go forward with the creation of the STEM Diversity Collection, our first step was to notify the broader library community of the effort and to solicit suggestions for the collection from the entirety of library staff, including our student workers. The development of the collection was announced through multiple channels including regular meetings for all librarians, regular meetings for all staff, through our library's newsletter, and through an all-library e-mail. Each of these avenues of communication included a description of the collection and the link to an open Google Sheet to accumulate the suggestions from library staff and students. Every communication emphasized the philosophy that governs the development of the

collection: it is a curated collection with a focus on BIPOC and LGBTQ+ authors whose contributions and achievements have been historically minimized and even ignored. The initial solicitation period given for suggestions was one month.

Creating a work flow

While the suggestions were being accrued, a specific work process for adding material to the collection was developed. Because the collection was intended to be presented together, it could not simply be shelved in with the general collection as using call numbers would result in its being dispersed not only throughout the science and engineering library but also among other libraries on our large campus due to the division of collections by call number.

Consequently, the STEM Diversity Collection was given its own location code which correlated to a physical display being planned for Noble Library. In addition to ensuring the collection was physically located together, we also wanted to ensure the collection would be eye-catching. Thus, we needed to make sure that any book jackets were preserved for display with the books to allow books of emphasis to be displayed with their fronts facing outward.

Because the funds for the purchase of the collection were originally coming from endowed funds, a new fund code had to be created to track the purchases for the collection. Having allocated funds for diversity-related collections has been identified as a recommended practice [10]. Additionally, the processing of the collection would be taking place at a different library than where they would be displayed. On top of that, the items in the collection would not be placed on display as they came in, but would be held back until a designated time for the debut of the collection.

In order to keep all of these working parts moving together, specific language was developed to put into the purchase orders for the books in the collection. This language allowed our acquisitions department to target these books specifically and put them into their specific work flow. With the workflow agreed upon by departments ranging from acquisitions to stacks management, the initial purchasing could begin.

Selecting the material

In order to select material for the collection, I reviewed each book in the Google Sheet. The initial pass was used to identify duplicates, to determine whether any of the suggested books were already in the library's physical or electronic collection, and to ascertain current prices for each book. One of my first concerns was that the number of suggestions, over 70 unique items, would result in the budget for the initial collection being exceeded.

This fear did not come to fruition, however, as twelve of the suggested items were already in the library's physical collection. There were some items also in our electronic collections, but I decided to acquire the physical copies of the books due to the nature of the collection. In addition to excluding items already in the library's physical collection, I made the decision to defer the purchase of three children's books as we have a children's collection located in a separate library and not purchase one suggested DVD.

Ultimately, 56 new items—listed in the Appendix—were incorporated into the STEM Diversity Collection. The total cost of these items slightly exceeded the donated amount and the difference was made up through general funds available for collection purchases. The average cost of the collection was \$27.89 per item with a median cost of \$21.69.

An initial target date of October 1 was set for the collection to debut on the floor of Noble Library. In anticipation of this, I created a library guide to list the items in the collection along with descriptions of each item [25]. In addition, I began a word-of-mouth campaign with a number of student organizations and partnered with the Fulton Peer Mentors program to talk about the STEM Diversity Collection during an evening presentation at Tooker House, our residence hall dedicated to undergraduates in engineering majors.

Unfortunately, challenges due to the pandemic affected both work schedules and supply chains so that the books we did receive before October 1 could not all be processed and we did not receive the dedicated display shelving for the collection until well after our October 1 planned debut. Instead, the collection was first made available in early December 2021, underscoring an important lesson to not announce the debut of a collection until all contingencies have been eliminated.

Creating a new physical collection in a science and engineering library with a small budget was definitely a challenge. Conventional wisdom holds that not only do STEM disciplines use monographs less than other disciplines [26] but also dollars spent on STEM monographs don't go as far as in the humanities as their monographs and textbooks generally cost more [27-30]. By creating a substantial collection in a STEM library with such a small budget, we certainly were able to demonstrate that STEM collection development can be done without breaking the bank. One initial takeaway from this experience is that budget discipline is key to making this a success.

The biggest challenge is publicizing the collection and integrating into coursework at ASU. Certainly, the logistical issues that delayed its debut were an issue. Librarians who wish to duplicate—or, even better, improve—our efforts would be wise to ensure that schedules are locked down to prevent early publicity from fading out before the debut of the collection.

Future Actions

What comes next for the STEM Diversity Collection? Simply put, we intend to keep growing it. We still solicit contributions for additions to the collection from internal and external library constituencies, including scholars at our institution whose research encompasses diversity, equity, and inclusion in STEM education. Patron-suggested acquisitions that are directed to our STEM Division are evaluated for inclusion in the collection. And we review the lists and bibliographies compiled by others to ensure our collection remains vibrant.

To monitor the use of the collection, I will be examining the circulation stats to see how the collection compares to general usage of materials in the library. I will also be expanding the library guide on the collection to incorporate more than just newly-purchased books and include selections from our current physical holding—which may end up collocated with the

collection—and our electronic books. Finally, I would like to have librarians develop outreach programming and instructional tools that incorporate and emphasize the STEM Diversity Collection in order to ensure it reaches a broader audience. I am certainly looking forward to seeing what the collection can become and inspire in the future.

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Appendix

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