Intentional Inclusivity: Conducting a Diversity Audit on a STEM Monograph Collection

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Abstract

A diversity audit of the natural resources monographs took place in the spring and summer of 2022 at the California Polytechnic University, Humboldt Library. The goals of the audit were to construct a diversity audit that could be undertaken with very limited time and personnel availability. The findings have provided the library with important information about diversifying its science collections. This paper covers the audit methods, results, a discussion of the findings, and recommendations on best practices for diversifying science collections.

Keywords: Science librarianship, Diversity audit, Collection development, BIPOC students

Recommended Citation:

https://doi.org/10.29173/istl2775

Introduction

“...this idea of how our library collections, because they are written mostly by straight white men, are a physical manifestation of white men ideas taking up all the space in our library...”  
(Leung, 2019)

How can academic libraries better serve BIPOC students? This is by no means a new question for librarians but one with more to explore. It is further complicated by the fact that we are living in a time where there are campaigns that address equity issues within academia (https://www.citeblackwomencollective.org/), but, simultaneously,
academic programs that aim to decrease the opportunity gap are systematically disappearing under enactments of policy meant to maintain white supremacy (Garcia, 2019) such as the call for the removal of diversity-focused courses in higher education (Curran, 2023). The current complex socio-political climate demands that academic libraries not only explore creative options to repair the harm their institutions have historically done, purposeful and/or systemic, but also to center a reparative approach while doing so.

This paper explores the question posed through a diversity audit conducted in the spring and summer of 2022 of a print monograph collection of natural resources at the California Polytechnic University, Humboldt Library, which will now be addressed by its more common nomenclature Cal Poly Humboldt Library. The architect of the audit and the author of this paper are the same individual, and the constraints of venturing into a collections diversity audit as a solo project during a year-long contract will be described. In this paper I also detail the decisions behind how this particular audit came to be, the methodology used, and how the results of the audit were used to recommend changes to collection practices that center reparative measures; all in the service of increasing the sense of belonging of BIPOC students in STEM through collections diversity.

**What is Collections Diversity?**

Managing and developing the diversity of library collections remains a growing field of scholarship despite an established need for more research and action in this area. A long-standing concern is a lack of consensus on a standard definition for collections diversity. This lack could be one reason why the Ithaka S+R US Library Survey 2020 found that “... most libraries have not developed criteria for evaluating and making decisions related to the diversity of their collections” (Frederick & Wolff-Eisenberg, 2021, p. 2). How diversity itself is defined can also depend on the context of its employment, such as through the direct interpretation of providing variety, which libraries have traditionally valued through the acquisition of various perspectives across various subjects. What this latter approach can overlook are the institutional structures that uphold white supremacy within academia, publishing, and scholarship as a whole. This narrow approach ultimately fails as it sets up knowledge curation of diverse perspectives as the same as knowledge contribution from diverse perspectives (Espinal et al., 2018; Harris, 2020; Lee & Low Books, 2020; Santamaria, 2020). I will now focus on the other interpretation of diversity, the practice of inclusion. While diversity as equitable inclusion can be looked at through the characteristics of gender, queer identification, race and ethnicity, religious beliefs, economic status, immigrant status, and/or disabilities, this audit honed in on looking for inclusion through race and ethnicity. The decision as to why will be covered in more detail in the following section.

The scholarship on collection diversity audits remains an emerging topic. Publications from the 1990s saw the need to “take seriously the ethnic and racial dimension of the collection” through the gathering of empirical data on the matter and via the treatment of such collection building as a specialized approach (Trujillo & Weber, 1991). In the 2000s, the ALA’s (2006) Library Bill of Rights addressed collections diversity via its
standards and procedures, but notable for this conversation are the recommendations to:

- consider resources from self-published, independent, small, and local producers;
- seek content created by and representative of marginalized and underrepresented groups;
- evaluate how diverse collection resources are cataloged, labeled, and displayed;
- include content in all of the languages used in the community that the library serves, when possible.

This evolution of considering bias in the acquisition process gained momentum throughout the 2010s (Monroe-Gulick & Morris, 2023). One attempt to remedy this insufficiency has been through the efforts of numerous libraries working to address and fulfill collection diversity through a variety of practices and initiatives (Cruz, 2019; Mathews, 2021). Diversity audits, as one such tool, grew in number as a way for librarians to investigate how to disrupt the whiteness of their collections. More recent scholarship is looking beyond traditional types of academic materials and traditional methods of acquisition. As processes continue to become streamlined for the purposes of just-in-time and cost-efficient selection and acquisition, we risk the steps forward we have made in collections diversity (Monroe-Gulick & Morris, 2023). This potential for backpedaling progress because of changes is echoed by the need to critique and re-evaluate methods to curate diversity that Jahnke et al. (2022) in their article on structural barriers to collections diversity positions describe as “an ongoing pursuit” (p. 166).

Deciding what facet of diversity to focus on can also affect what category of materials are assessed or what they are assessed against. For many libraries, the criteria they employ can be differentiated based on their focus on strategic initiatives or their local demographics (Mortensen, 2019). The following examples list ways that libraries looked for content diversity. At the University of West Florida, looking for diversity (which consisted of race, ethnicity, gender, immigration, sexual identity, and more) in the content of their monographs was done by comparing their holdings “against Resources for College Libraries (RCL) core titles, using interdisciplinary RCL subjects and relevant LC classification ranges” (Gonzalez, 2023, Tab 2). Other libraries compared their holdings against diversity award lists (Monroe-Gulick & Morris, 2023), while an audit undertaken in the spring and summer of 2020 at the Cal Poly Humboldt Library examined materials within language and literature classifications (P-PZ) against “a small selection of diversity-related Library of Congress subject headings” (California Polytechnic University, Humboldt Library, personal communication, June 2022).

When it comes to looking at diverse authorship in particular, the methodology one follows can be tricky. This is because researching the demographic backgrounds of individuals is not a straightforward process. Mathews’ 2021 article highlights how some audits are at risk of “assigning an inferred characteristic if no positive affirmation is available” (p.101). Emerson & Lehman’s 2022 article on conducting diversity audits emphasizes the uncomfortable nature of assigning the predominately White lens concept of ‘diverse’ to a person. That said, several audits have gone the route of having authors self-identify their own diversity by inferring it from source materials such as
bios, interviews, obituaries, and more (Emerson & Lehman, 2022; Wells et al., 2023). There are also other methods for diversity audits that have yet to see much research. Ciszek & Young (2010) call out how standard bibliographies and core lists in general are not focused on BIPOC needs, and thus have not seen much movement as assessment methods for collection diversity audits.

The Cal Poly Humboldt Library has in recent years moved forward with a strategic approach for actively increasing collections diversity. They have developed a statement regarding collections diversity and integrated it into their collection development policy: “The Library is continuously seeking to diversify its collections through the acquisition of inclusive materials that represent the ever-growing community of… Library patrons” (California Polytechnic University, Humboldt Library, personal communication, June 2022). The library has actively sought and been granted funds for the purpose of diversifying the collection. One such grant sought to diversify the library print monographs collection more broadly, seeking patron-driven acquisitions through purchase suggestions and then displaying the items purchased through the Diverse Collections- Recent Acquisitions LibGuide (California Polytechnic University, Humboldt Library, 2022). The audit described here additionally marks the third collections diversity audit undertaken by the library. As the previous audits demonstrated a need to improve the inclusion of more diverse library materials, a hypothesis was formed that conducting a diversity assessment of a monographic print science collection would yield similar results. Thus, this audit could both further strengthen the library’s pathway to improving collections diversity and seek to further illustrate the importance of active change to practices and policy in order to gain and maintain momentum.

Focus on Print Science Monographs Collection

After gaining polytechnic status at the start of the year 2022, Humboldt State University has since become known as Cal Poly Humboldt. With such a designation there was planned growth in the breadth of academic science programs on campus. An addition of eight new bachelor’s programs and one new master’s program are to be added to the academic roster by fall 2023. They are as follows: Energy Systems Engineering BS, Mechanical Engineering BS, Data Science BS, Geospatial Analysis BS, Software Engineering BS, Applied Fire Science and Management BS, Cannabis Studies BA, Marine Biology BS, and Engineering and Community MS. Another fifteen additional programs in engineering, technology, and applied science disciplines are to be added by 2029. Although the campus had already established itself as a leader in STEM major enrollment in California and in diversifying the STEM workforce prior to its transition to polytechnic status, it is readily poised to explore further opportunities (California Polytechnic University, Humboldt, 2021).

Ultimately, what this meant for the Cal Poly Humboldt Library varies across several library departments, but the focus here will be on collection development. With so many incoming science programs, there arose an opportunity for a project to assess and audit science collections. I undertook this audit as a temporary, year-long employee. Some of the realities of this audit process were heavily shaped by the constraints I was working under, including the status of my contract, and that while I was encouraged to
pursue this project by the Cal Poly Humboldt Library, I was not given any project partners and needed to work alone.

Journal articles dominate the literature used by scientists and purchasing journals likewise dominates library collection development budgets. Trying to audit a large swath of journal articles, however, was not an undertaking that could be pursued with the constraints in which I was working. Print science monographs that the library owned, which returned fewer results in a catalog search than journal articles on sample science topics (Biology, Environmental Science, and Physics) were much more viable to pursue for this audit project. I could focus on a specific subset of print science monographs to audit that fit within the time limit of my contract.

While print monographs are not the science literature that students make the most use of, their tangibility still has important uses in an academic library. In Herrera’s 2016 article, a study of undergraduates in 2014 looked at the usage of e-resources and checkouts of physical materials at the University of Mississippi Libraries and found that of the 10% that checked out physical materials, more African American, Asian, and Hispanic students used the print collection compared to the control group. While this average seems small, it still highlights an area of usage that is important to BIPOC students. As physical items, monographs are a physical representation of knowledge deemed important enough to be collected by an academic library. Reflecting BIPOC voices in the library space also makes it easy to use monographs for display or programming activities, such as providing role models in professions for aspiring BIPOC students (Mathews, 2021).

Historically, the development of print science monograph collections at the Cal Poly Humboldt Library has by and large focused on the retention and weeding of materials based on age and relevance to ongoing academic programs via program reviews. The emphasis on these characteristics ties into the principles of the current collection development policy of Cal Poly Humboldt Library:

1. Informed selectivity
2. Timely acquisitions
3. Dynamic collection building
4. Reliance on consortial and lending partnerships
5. Space needs

Between the principles stated above and the precedent for assessing science collections through limited though no-less important lenses, a trend of relying on primarily usage-focused metrics for developing science collections is observed. Because of these precedents for collection development, there was a high probability that the science collections were not assessed with diversity in mind.
BIPOC students as a whole make up a sizable portion of the overall student population at Cal Poly Humboldt University. According to the Enrolled Students Demographic Report, within the years 2019-2021 BIPOC students made up an average of 47% of the enrolled students on the university campus (California Polytechnic University, Humboldt, n.d.). As this data was pulled from institutional reports, it must be noted that this average is based on students’ self-reporting of their demographic information with the institution. The information is further limited by the data collection instrument’s lack of more categories for identification. Students are only given the space to identify their race and ethnicity markers through the categories of American Indian, African American, Hispanic/Latino, Asian American, Pacific Islander, Two or More Races, and Unknown. Additionally, there is a marker for Nonresident Alien for demographic purposes, but it does not reflect the racial and/or ethnic markers of those particular students. More on this gap will be touched on in the findings.

Regardless, the number of BIPOC students on campus on average is high enough for the university to have gained the designation statuses of Hispanic-Serving Institution (HSI) and Minority-Serving Institution (MSI). As such, the university has established a commitment to closing the opportunity gaps that BIPOC students face in higher education. In Becoming Hispanic-serving Institutions: Opportunities for Colleges and Universities, Garcia (2019) argues that for HSIs to implement a Latinx-Serving organizational identity, institutions must not only enroll at least 25% of Latinx students but also enact a culture that enhances “the racial and cultural experience of Latinx students” (p. 49) and makes further arguments for how this also serves all minoritized students. To build on this premise, one way academic libraries have been known to enhance the experiences of students has been to center events and activities around the theme of belonging. To hone in on the importance of this idea, I turned to scholarship from BIPOC scholars in STEM for guidance.

BIPOC scholars in STEM fields have long called for more diversity and broader perspectives in science. More specifically there’s been a call for diverse perspectives that come from scholars from different cultural backgrounds (Massey et al., 2021). The call is also meant to address the need to increase the sense of belonging of BIPOC students in STEM (Arif et al., 2021; Litzler & Samuelson, 2013; Massey et al., 2022). Where that need cannot be met by having more faculty of color at the institution, other avenues must be sought (Halsey et al., 2020). One approach is to connect students to research and scholarship by BIPOC authors in STEM (Bevan et al., 2020). It paves the way to show students that they can link their personal and culturally-valued perspectives to their STEM work (Estrada et al., 2016). Libraries thus have the opportunity to support this call. Library personnel may not have the ability to recruit BIPOC STEM faculty to campus, but they can bring in and highlight BIPOC scholarship for BIPOC students in STEM to connect with.

By focusing on how a print monograph collection can be used as a tool from which to build a sense of belonging with students, it also became a natural segue to use the representation of BIPOC students on campus as a mirror to compare the number of BIPOC-authored monographs in our science collection. These findings have the
potential to highlight disparities in monographic authorship representation in a STEM collection in this library and the possible need to look at building and maintaining science collections with diversity in mind.

Mirroring collection demographics to student demographics, in part, addresses a reparative approach. There has been a movement in higher education to center equity initiatives via a reparative justice model. The New England Board of Higher Education’s (n.d.) website defines reparative justice as “...a way of thinking about justice (a mindset) that centers those who have been harmed and focuses on repairing past harms, stopping present harm, and preventing the reproduction of harm” (para. 1). All academic libraries need to be mindful of what our collections reflect to BIPOC students. Our choices impact how students perceive what is deemed as scholarship and who gets to engage in knowledge production. In a presentation at the Scholars for Social Justice Conference, Ta-Nehisi Coates (2019) addresses reparations in higher education when he states, “It’s in the scholarship and the literature where dehumanization begins” (8:43). Although he was talking about how the academy’s aim has historically been formulated to justify and enact violence in the name of white supremacy, one of the by-products of that history in the academy is a continued lack of published research from BIPOC folk. In turn, this affects BIPOC student’s sense of belonging not just in the library but also in their field of study.

Libraries are a part of this as the field itself is permeated by Whiteness, a statement that has been highlighted both as an immutable fact and as a growing field of research for LIS scholars (Hathcock, 2015). White supremacy is entrenched within all the relational systems of academia, publishing, and librarianship and all serve to reinforce that system. Because of how that system of reinforcement works, it highlights the dominant structure in which serving BIPOC students through collection development is situated. If changes made are not active and targeted, because of this system in which they take place, any changes to enact diverse initiatives will remain surface-level, and the same issues will inevitably be unearthed again in the future. Matching library resources to the student population in terms of representation and access is a step toward repairing that harm.

Before moving on, as this audit focuses on issues of diversity, it is important to situate my own positionality. I self-identify as a Latinx individual and this means that while conducting the audit I have more familiarity with looking for Latinx, Latin@, and Latine-identifying markers over those of other racial and ethnic groups. Thus, where direct information of an author’s background is lacking, I could potentially still infer indirect markers of identity for any individuals with a similar background to my own. While this is a statement of self-recognition, I will still seek to only include racial/ethnic information of authors that is directly identifiable.

**Methods**

The methods for this audit were carried out in two parts, first by refining the collection via focus and sample size, and secondly, by how authors were to be assessed for BIPOC representation. The decision to draw an inductive generalization about the collection from a sample size was largely influenced by my needing to keep the scope of the
project small due to my temporary contract, and because I wanted to provide an example of a quick audit that can be applied to other science-focused collections. As the sole team member, I took careful note of problems that arose throughout my work on this project and the time I spent. The audit began in February of 2022 and was completed in July of 2022, amongst my other duties. The amount of time I set aside each week to work on the audit varied, but overall I calculated about 71 hours total spent on the audit portion itself.

**Part 1. Refining the Collection and Sample Size**

The Cal Poly Humboldt Library is small compared to other 4-year academic libraries in California. As of summer 2022, there were over 468,000 print monographs housed among its library materials (California Polytechnic University, Humboldt Library, personal communication, 2022). Within this context of items available through the ILS, I used exclusion criteria to narrow down to a science collection that was manageable to work with. In the next section, I summarize how the specific science collection audit was refined.

I chose to use the catalog search method as the way to find the materials I wanted to assess because I wanted to mimic the way students were most likely to discover and access titles for themselves (Walters, 2023). I used Ex Libris' Primo, the library’s discovery service, as the vehicle from which to pull the titles to be assessed. Additionally, Ex Libris’ Primo was also chosen because of the ease of exporting a list of titles. The titles were saved from Ex Libris’ Primo to Zotero and then exported into a Google sheet for auditing.

Next followed the decision of which print science monograph collection to focus on. Taking inspiration to focus on subject headings from the library’s previous diversity audit, I tested retrieval returns across several science-focused subject headings. The one that was ultimately decided upon was the subject heading of “Natural Resources.” It was a common subject of study across several of the science disciplines at the institution. The retrieval of titles with this subject heading returned under 2,000 materials, making it several times smaller than the number of materials coming back from a broader discipline subject heading such as Biology. As I would also only be looking at a sample size of a collection, I calculated the number of possible materials against the number of allowable hours I could feasibly dedicate to the audit during that time period and found this number to be feasible to work with.

Last were the resource type and location of the materials. The purpose of tying the diversity of representation of the authors to the diversity of representation of the students on campus influences the parameters of the audit. Print monographs were chosen as the resource type because I wanted to focus on materials the students could have physical access to without needing to request an interlibrary loan, and thus the location was set to the library. The first modified retrieval of titles are as follows:

- Subject Heading- Natural Resources
- Resource Type- Print books
- Location- held by the library
I needed to have a more manageable number of titles as a key goal of this project was to outline a quick audit process. I believed that having a quick-audit model as an assessment would make it more approachable for other librarians who wanted to conduct a diversity audit of discrete portions of their print monographic science collections. As a result, additional exclusion criteria were considered. Several factors led to having the publication date as another modifier. One, I looked at some of the materials with older publication dates and found that demographic information through research was sparse or not at all findable for these titles. Thus, I knew I should look for newer materials first, as newer titles were more likely to have author information online. Two, I needed to find a date range that would retrieve a sample of the size I wanted to work with, that size being approximately 25% of the original set of titles retrieved. Various date ranges were attempted, until I found that the publication range of 2000 to 2022 returned close to the target number of titles. With the exclusion criteria for publication date added, the search parameters were as follows:

- Subject heading- Natural Resources
- Resource Type- Print books
- Location- held by the library
- Publication date- between 2000-2022
- Conducted March 2, 2022
- Returned 508 books total, 26% of the total initial collection

At this stage, I conducted a preliminary examination of the content. Due to the nature of the authorship of scientific publications in the natural resources, I wanted to examine how many titles retrieved identified only governmental, non-governmental, and other organizations as authors. Further analysis of the titles led me to make a note of different factors for removing or not removing titles from the sample based on whether they were ‘auditable.’ The additional inclusion/exclusion factors are as follows:

- Titles authored by organizations would be removed where individual authors were not named and thus could not be audited. Some examples include the United States Bureau of Land Management and the US Fish and Wildlife Service.
- Books on reserve or in special collections were not removed as students could still access these titles.
- Books that listed only editors and no authors were not removed as long as the editors were listed by name in the catalog.
- Authors who had more than one title within the collection had their other titles removed from the audit. There was an exception for when an author had more than one title, but other titles included other authors. In this case, all titles were kept, but the author was only audited once.

This left 294 total print books, from which 502 individual authors were extracted for the assessment.
Limitations of Exclusionary Criteria Used

The following table provides an impact of inclusion and exclusion choices. Table 1 is included to be transparent about the limitations of this audit.

<table>
<thead>
<tr>
<th>Exclusion criteria</th>
<th>Impact of Exclusion</th>
<th>Impact of Inclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resource Type - Digital items</td>
<td>Digital science literature resources dominate usage statistics.</td>
<td>Their inclusion would have resulted in an audit of more used materials.</td>
</tr>
<tr>
<td>Publication Date - items published before 2000</td>
<td>The full racial and ethnic make-up of the collection will be skewed by only looking at a sample size of the newer quarter of materials.</td>
<td>More likely to find demographic information about the authors if they have published more recently.</td>
</tr>
<tr>
<td>Authorship - Removal of Organizations</td>
<td>Many monographs in the sciences include authorship by organizations. Removing them drastically reduces the number of titles for assessment.</td>
<td>Individual authors are named and thus eligible for assessment.</td>
</tr>
<tr>
<td>Authorship - Removal of Repeat Authorship</td>
<td>Removes more of the overall authors from the assessment and thus the percentage of representation found can be slightly skewed.</td>
<td>Grants an assessment of authors represented in the collection on an individual level.</td>
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</table>

Part 2. How Were Authors Assessed for Representation?

Methods for assessing identity are imperfect at best. Initially, I planned to email a survey to every author about the study and ask if they’d like to self-identify. There were several factors to weigh here. Asking the scholars to identify themselves would garner the most accurate representation of an individual’s racial and ethnic background(s). However, this method would rely on responses to be timely (if they were to respond at all), and the request to self-identify personal information for the purpose of a study merits its own complexities. I ultimately chose to disregard this method after reviewing the literature and finding a qualitative approach employed in an audit that also collected information about an author’s race and/or ethnicity (Emerson & Lehman, 2022). Information was derived from avenues where authors were likely to self-identify such as bios, personal websites, interviews, and social media. It is important to note that I was looking for two indicators of information: was the individual BIPOC? and if yes, did they further identify themselves by race and/or ethnicity? For the answer to the former, I wanted to compile a quick look at the overall racial representation within the collection. The categories for BIPOC identification thus consisted of “yes,” “no,” or “unknown.” Race and ethnicity responses were to be matched against the same demographic categories as the students in the California Polytechnic University, Humboldt enrolled demographics report.

Limitations of Representation Audit

As stated earlier, assessing identity is an imperfect process, and while the methods were detailed, there remains the need to discuss the weaknesses of the approach used. To start, the categories of racial demographics are not exhaustive of all possibilities. The
predetermined racial categorizations of the demographic information collected through the university’s institutional research lack a clearer view of the racial/ethnic diversity of the student population on campus. For example, the category used for Asian-Americans encompasses a vast variety of ethnic categories that the university does not display in its research. Thus, this lack also carries over to the representation of BIPOC authors as those limited categories were used for that dataset too.

Results

Of the 502 individual authors who were assessed, 30 authors were found to identify as BIPOC (Figure 1).

![Figure 1. BIPOC representation of authors in natural resources print monographs](image)

The monographic sample that was audited makes up about a quarter of the entire collection of monographs with the natural resources subject heading. Within the sample that was audited, BIPOC authors only make up 6% of the authors in this pool of monographs. Given the history of exclusion of BIPOC scholars from academia, there is a high probability that if the entire collection was audited, which includes publications dating back to 1868, the percentage of BIPOC authorship would skew even smaller. Thus the 6% of BIPOC authorship is merely a generous interpretation of representation. Even with the potential for inaccuracy due to the “unknown” category (representing 2% of the authorship pool) added to the mix, BIPOC author representation cannot be summarized as anything other than poor.

Next, the demographics of the author pool were compared with the student population on campus (see Table 2). For the most part, these results show that the author’s demographics failed to match the diversity of the student body. Overall, BIPOC students (those falling under the African American, American Indian, Asian American, Hispanic/Latino, Pacific Islander, and Two or More Races categories) enrolled during 2019-2021 made up 47% of enrolled students while BIPOC authors of print monographs in natural resources made up 6% of overall authors. When looking at the breakdown by race and ethnicity, there were only two cases of overrepresentation, where Asian
Americans were overrepresented in the collection by 1% and Whites were overrepresented in the collection by more than 45%. There was one case, Pacific Islander, where the author and student demographics matched up. All other cases showed underrepresentation in the collection, with the extreme case of underrepresentation within the Hispanic/Latino category where the authors were underrepresented by 32%.

<table>
<thead>
<tr>
<th>Table 2. Comparison of student and author demographics</th>
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<tbody>
<tr>
<td><strong>Student Demographics</strong></td>
</tr>
<tr>
<td>African American</td>
</tr>
<tr>
<td>American Indian</td>
</tr>
<tr>
<td>Asian American</td>
</tr>
<tr>
<td>Hispanic/Latino</td>
</tr>
<tr>
<td>Non resident Alien</td>
</tr>
<tr>
<td>Pacific Islander</td>
</tr>
<tr>
<td>Two or more races</td>
</tr>
<tr>
<td>White</td>
</tr>
<tr>
<td>Unknown</td>
</tr>
</tbody>
</table>

*Note.* All findings in this table were rounded to the nearest 0.25%. Student figures were pulled from the 2019-2021 averages of the student enrollment demographic report (California Polytechnic University, Humboldt, n.d.).

Earlier, I alluded to problems within the descriptors for the racial and ethnic categories that are captured by the Cal Poly Humboldt University. One problem is that student demographics included categories for “two or more races” and “nonresident aliens,” but these demographics were not apparent for any of the individual authors. The “nonresident alien” category is also a complicated measure as people in that category would still have racial and/or ethnic demographic information that is not being captured. It is further problematized as a political term that came from tax terminology (Internal Revenue Service, 2023) that is no longer preferred. While students at the institution may have chosen the label due to the lack of a better category, outside of such confines it is unlikely to be used. For example, none of the authors used such a descriptor.

**Discussion**

The initial hypothesis was that the Cal Poly Humboldt Library’s print monographic natural resources collections would reflect a lack of BIPOC authorship representation. The results show that this is the case. Based on these findings, combined with the findings of the previous diversity audits the Cal Poly Humboldt Library conducted, and the literature on collection diversity, it is likely that repeating this audit among other science-related subject headings in the library’s monographic collection will yield similar results. These findings reinforce the argument that libraries need to make active, targeted, and policy-driven changes to fulfill collection diversity goals. The following section will discuss several potential root causes for the lack of diversity in the print monographic natural resources collection. Then I will follow up with key recommendations for reparative work to improve the collection.
Root Causes of the Lack of Collection Diversity

There are several root causes for the lack of BIPOC author representation within this collection. A key component to address is how diversity can be treated as a category of work instead of a fundamental framework in which to pursue library work. This treatment of diversity as a category of work, or as Hathcock (2015) puts it, “diversity is approached as a problem that must be solved” (para. 7), can impact how a library approaches it and how it is impacted by other library work. For example, the Cal Poly Humboldt Library has had to contend with a slashed budget for monographs year after year since the rise of e-books (California Polytechnic University, Humboldt Library, personal communication, 2022). This funding constraint limits the funds necessary to devote to the acquisition of materials by diverse authors. Compound this diminishing resource with an overall falling library budget, the treatment of diversity work as additional work, and issues with staff retention, and then we see that this “additional” work simply can’t be completed as it could be.

All of these underlying causes of poor collections diversity is further complicated by factors peripheral to academic libraries, such as a lack of BIPOC representation within academia and thus within the academic publishing industry. According to the National Center for Education Statistics (2023), in the fall of 2021, BIPOC full-time faculty (those who would be most incentivized to publish) made up about 26% of full-time faculty. The smaller representation of BIPOC faculty in academia can directly translate to a smaller pool of scholarship published by BIPOC authors, which calls into question whether mainstream publishing as it is can even assist in collections diversity (Blume & Roylance, 2020).

Key Recommendations

These recommendations seek to disrupt processes that remain preferential to White scholarship. They were chosen as measures with reparative justice in mind- to not only fix a problem but to pave the way to prevent it again in the future. By no means are they all-inclusive of the steps that can be taken and explored, but they are put forward as first-step recommendations for diversifying the monographic science collections at the Cal Poly Humboldt Library specifically and are supported by what other libraries either have implemented or are looking to implement as part of their efforts to work on collections diversity.

While these recommendations are made in no particular order this first one is important to the success of the others — making sure all library personnel are involved. Doing any kind of reparative work in the library will need both change and buy-in. Whether large or small, change often necessitates individuals across several departments working together to implement it. In Mortensen’s 2019 article about the Skokie Public Library, they stressed the importance of sharing the results of their audit with the library and having continuous discussions about potential changes as a library to ensure any changes to their framework when selecting materials in the future with diversity in mind would sustain longevity.
The other recommendations are more directly actionable. As there is a need to play catch-up with diversifying collections, creating a diversity line item may help. Having a set budget line item for diverse materials sets a marker to aim for, such as described by the Madison College library, “When ordering new titles for the library each month, we have set a minimum target of 20-25% to include works written by diverse authors or about diverse topics” (Castrillo, 2021, p. 1). Other libraries adapted this method as well, as seen as the Iowa State University Library, where they implemented several budget line items for diverse materials across several subjects (Vega Garcia, 2002). Another actionable item is working to improve the discoverability of BIPOC authors in a collection. As the library purchases titles from BIPOC authors, it is important to make them easy to discover in a collection that is vastly non-BIPOC. Creating a set of internal tags or internal subject headings can make anything in a low percentage easier to find, as the Darien Library explored when trying to make their BIPOC adult biographies more discoverable (Wood, 2021).

Something that was not covered in this discussion but that is just as important is the follow-up steps to conducting a diversity audit and the acquisition of new materials, such as the highlighting of said materials. Whether it is done through displays, partnership programming, or otherwise- drawing attention and letting students know of particular resources meant to serve them makes a difference. The impact of diversity audits and actions taken is an area of research with potential exploration.

**Conclusion**

“The list of things to do may be daunting, and for good reason: it’s no easy task to upturn the entrenched system of white supremacy that permeates every part of our culture.”

(Espinal et al., 2018, p. 159)

In this paper, I explored a few first steps the library can take to do reparative work on a print monographic science collection. A bonus of constructing an audit that could be done with limited personnel and resources is that a similar type of audit can be conducted across other print monographic science collections, or with adaptations to assess a digital collection. Developing a collection audit that could be carried out by one individual in a short time frame was done in response to the university’s numerous incoming science programs. The choice to conduct a diversity audit that focused on BIPOC authorship within a monographic STEM collection was made to address the question posed at the beginning of this article -- what can academic libraries do to support BIPOC students in STEM disciplines? As explored in this work, one step academic libraries can take is to support these students by seeking out and providing access to books by BIPOC authors, as we know that students do better academically when they can see themselves reflected in scholarship.

This project unearthed some gaps in monographic collection practices that require further exploration. While libraries must do their part in providing access to BIPOC scholarship to their campus communities, librarians also have the responsibility to advocate with publishers for more scientific print monographs by BIPOC authors. In addition, advocacy at the campus level is needed for BIPOC faculty not just to be hired
and retained but to be given status that privileges the pursuit of writing monographs. As these systems all have a relationship with each other’s processes, movement in one area alone is not enough.

Another takeaway is to acknowledge that it can still be easy for diversity initiatives to be taken on as ‘important yet additional work.’ There is more recognition that ‘we should do this’ rather than ‘we must do this.’ Making headway in diversity measures requires “a set of strategies, implementation of those strategies, and mechanisms for measuring change and maintaining accountability” (Frederick & Wolff-Eisenberg, 2021, p. 8). Until integrating diversity efforts as a core and fundamental part of library work is better addressed it will remain ongoing work that needs to be caught up on.

Acknowledgments

Writing this article could not have happened without the people who supported and helped me. Thank you to Hannah Gascho Rempel and Edward Eckel for their expert editorial guidance and polishing of my ideas. Thank you to the formal peer-reviewers for their clarification and development. Lastly, thank you to my previous colleagues, the librarians at California Polytechnic University, Humboldt who encouraged this project and edited early drafts; with special thanks to Brianne Hagen, Naomi Hill, Carly Marino, Garrett Purchio, Kimberly Stelter, and George Wrenn.

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Issues in Science and Technology Librarianship No. 106, Spring 2024. DOI: 10.29173/istl2775