

Undergraduate Research Success with a Three-Mentor Model: A Case Study of a McNair Scholars Program

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Abstract:

The McNair Scholars Program is one of eight TRIO Programs funded by the US Department of Education.¹ TRIO Programs were established in 1965 as a part of President Lyndon Johnson's War on Poverty. President Johnson argued throughout his presidency that education was a means to increasing social mobility for low-income families.² There were originally three programs created under his administration, generating the "TRIO" title.

The McNair Scholars Program, named in honor of Dr. Ronald E. McNair, a physicist and astronaut who was killed in the Challenger explosion, was established in 1986, shortly after his death. This federal TRIO program is intended to prepare low-income, first-generation college students or students from underrepresented minority groups with high academic potential for graduate studies. To participate in the McNair Scholars program, students must be either both first-generation and low-income students or they can be from an underrepresented minority group. When UNC Greensboro (UNCG) applied for and received the grant in 2017, there was a growing need to support students from these various backgrounds. In the fall of 2019, 31 percent of all undergraduate students at UNCG identified as first-generation.³ In fall of 2018, 7,9204 of 16,6415 undergraduate students (47 percent) met the US Department of Education's definition of low-income, and 43 percent of students identified as being from an underrepresented minority group⁶ (African American, American Indian/Alaskan Native, Hispanic/Latino, or Pacific Islander).

Keywords: undergraduate research | student success | academic librarianship | McNair Scholars | McNair Scholars program | case study

Article:

*****Note: Full text of article below**

CHAPTER 5

Undergraduate Research Success with a Three- Mentor Model: A Case Study of a McNair Scholars Program

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Introduction and Background

The McNair Scholars Program is one of eight TRIO Programs funded by the US Department of Education.¹ TRIO Programs were established in 1965 as a part of President Lyndon Johnson’s War on Poverty. President Johnson argued throughout his presidency that education was a means to increasing social mobility for low-income families.² There were originally three programs created under his administration, generating the “TRIO” title.

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ceived the grant in 2017, there was a growing need to support students from these various backgrounds. In the fall of 2019, 31 percent of all undergraduate students at UNCG identified as first-generation.³ In fall of 2018, 7,920⁴ of 16,641⁵ undergraduate students (47 percent) met the US Department of Education's definition of low-income, and 43 percent of students identified as being from an underrepresented minority group⁶ (African American, American Indian/Alaskan Native, Hispanic/Latino, or Pacific Islander).

The McNair Scholars program helps students complete an independent research project, hone their academic writing skills, complete a poster and manuscript, prepare applications for graduate school, and prepare for the GRE. Much of this work is accomplished during the Summer Research Institute (SRI) which most Scholars attend following their junior year.

Since receiving this grant, UNCG's McNair Scholars Program has established partnerships with departments and offices throughout the university. One of these campus partnerships is with UNCG University Libraries. Library mentors were written into the grant proposal, which meant that liaison librarians at UNCG would be compensated for serving as mentors to McNair scholars, each of which would have an assigned librarian. These mentors would provide one-on-one assistance for their assigned scholars, develop workshops for each cohort of scholars, and provide assistance in publishing if a scholar wishes to publish their work. This library mentor partnership makes up one part of the Three-Mentor Model, in which the scholar is supported by a library mentor, a teaching faculty mentor, and a mentor from the McNair staff. UNCG librarians play an important part in sustaining the Three-Mentor Model, and they now collaborate with the McNair Scholars staff throughout the academic year with each cohort of scholars. The library mentors are helpful when scholars begin formulating research topics and then continue to assist scholars through every step of the writing process.

In spring 2021, the McNair Scholars program required students to take an independent research course instructed by the faculty mentor supervising their research study. The goal of this independent study research course was to prepare scholars for the Summer Research Institute (SRI). During this independent study course, scholars worked with their faculty mentors to craft research proposals. Requiring scholars to work with their faculty mentors prior to SRI helps scholars and faculty mentors foster relationships before the more intensive work of SRI begins. Additionally, scholars were required to have several meetings with their faculty mentors and library mentors to discuss their research projects and submitted bi-monthly progress reports to update the McNair staff about their progress.⁷

To guide the scholars in completing a variety of assignments over the duration of the semester, scholars were required to attend weekly workshops where some were facilitated by library mentors. Students were required to complete the following assignments: research introduction, CITI Human Subjects Research

Training, literature review, graduate school identification worksheet, research plan, draft of an Institutional Review Board study submission, and a final research proposal.⁸

The Summer Research Institute mirrors graduate school in that students are required to work on an independent research project while taking other courses and attending workshops. The UNCG model requires scholars to dedicate twenty-five hours to faculty-directed research each week and submit a final research paper that matches the standards of their discipline but is ideally fifteen to twenty pages in length. At the end of SRI, scholars are required to present their research findings at the Annual UNCG McNair Scholars SRI Symposium in the form of either an oral presentation or poster presentation, with members of the university, their friends, family, and mentors all invited to attend.

Partnership

The idea for a partnership between the McNair Scholars program and the University Libraries was initiated by the then-interim dean of the University Libraries after seeing a presentation about the program at a Dean's Council meeting. The interim dean met with the PI to express her desire for librarians to be included in the grant since research is an important component of the program. She ultimately wrote a letter of support as part of the initial grant proposal which included a promise of library involvement with the program.

Once UNCG received the grant, planning for the first cohort of McNair Scholars began, including the development of the Three-Mentor Model (3MM), where each scholar would have a research mentor (a member of the teaching faculty), a library mentor (a library or archivist faculty member), and the McNair staff. Once each cohort is in place, the process of pairing students with mentors typically goes as follows:

- Students begin working with the McNair staff to discuss their goals for SRI. They also discuss how SRI can aid them in their graduate school application process.
- Students find research mentors based on their research interests and faculty connections, sometimes with the assistance of the McNair staff.
- The head of the libraries' liaison program works with the McNair director to assign students to appropriate library liaisons to serve as their library mentors.

The process of assigning library mentors can be more complicated than merely pairing scholars with the subject librarian for their major discipline. Serving as a library mentor can be a time-consuming endeavor, and some disciplines (like biology and psychology) are typically overrepresented among scholars. Those scholars are typically divided up among liaisons in similar disciplines, so other social science librarians in similar areas, such as education, may work

with scholars who are doing research in psychology. Also, sometimes a scholar's research may not align precisely with their major discipline. For example, if a scholar whose major is political science decides to use secondary data analysis for their research project, it may make more sense for them to work with the data services librarian rather than the political science liaison librarian. Also, scholars frequently have double majors or a major and minor, and their research projects can come from any of these disciplines. Library mentors are assigned with all these factors in mind.

With the first cohort of scholars, library mentors became officially involved at the beginning of the Summer Research Institute, but they quickly ran into difficulties, including scholars who had chosen research topics with little to no literature for them to draw upon or scholars who had missed important resources in their literature reviews. Some scholars had already established relationships with their library mentors, having worked with them in their major classes, but contacting library mentors before SRI was suggested, not required. Library mentors also led one workshop on finding library resources and using Zotero at the beginning of SRI.

In the second year, the McNair coordinator and library mentor coordinator decided library workshops should be held in the spring semester before SRI. That year, librarians taught two sessions: Introduction to Research Methods and Introduction to Zotero. (A third session, Writing Literature Reviews, has since been added.) Each session was taught twice in the same week to maximize the number of scholars who are able to attend.

The primary purpose of the Introduction to Research Methods session is to make sure all scholars have the same baseline knowledge of library resources and search strategies. Depending on scholars' majors and the general education courses they have taken, they may have had multiple course-integrated information literacy sessions in a variety of disciplines or none at all. This session starts with a Google Form (<https://forms.gle/TTKiXi4AMTF6yWLT8>) so the librarians can quickly assess scholars' comfort levels with the research process. Librarians show scholars how to find the most relevant research guide for their chosen research projects and provide an introduction (or in some cases, refresher) on keyword and search string formation. Librarians also talk scholars through the anatomy of a scholarly article and help students identify the research methodology in a scholarly article. Scholars also learn about the Sage Research Methods database, which is primarily used by graduate students and faculty. Supporting materials are available at <https://uncg.libguides.com/mcnair/methods>.

The second library workshop is entitled Introduction to Zotero. Zotero is an open-source citation management program supported by the libraries. In this session, scholars set up accounts, download the program and browser extensions, learn how to add full-text articles and other types of citations, and see how it integrates with both Microsoft Word and Google Docs (UNCG is a Google campus). Supporting materials are available at <https://uncg.libguides.com/zotero>.

In the third workshop, Writing Literature Reviews, librarians talk students through creating a synthesis matrix and writing literature reviews in different fields. Supporting materials are available at <https://uncg.libguides.com/mcnair/lit>.

Since these workshops now take place in the semester before SRI, librarians typically spend time during the SRI working one-on-one with their scholars, helping them locate resources, assisting with Zotero and citation questions, and providing feedback on research paper and poster drafts.

Reflection

Working closely with the McNair Scholars program has been incredibly valuable for the library mentors. Liaison librarians typically have the opportunity to see a research project at one point in time, typically when the secondary research is happening. Once the research consultation is over, we may not see the student again. Having the opportunity to work with McNair Scholars throughout the research process, from formation of research topics to poster presentations, is immensely rewarding. These relationships have also extended beyond the Summer Research Institute into the scholars' major classes and, in some cases, into graduate school. McNair Scholars are bright, motivated, and a pleasure to work with.

Beyond the rewards of working with scholars directly, working with the McNair Scholars team has been a valuable experience. From the beginning, they have been open to trying new things and making changes in order to make sure the scholars have the best possible experience. This is the ideal environment for collaborating and was the result of open communication on both sides.

As with any new initiative, there were a few bumps in the road. It took time to determine how best to incorporate library mentors into the McNair Scholars program and when to do so, but thanks to the open communication and shared focus on the success of the scholars, these issues were resolved. We also continue to debrief after each Summer Research Institute to determine how to improve for the next class of scholars.

COVID-19

Prior to March 2020, all McNair workshops and advising meetings were held in person, but due to COVID-19 and social distancing guidelines, this was changed. Workshops were typically held every week on the same day and time—for example, every Wednesday at 5:00 p.m., with the exception of library workshops, which were held twice in the same week at different times. After March 2020, the UNCG McNair Scholars program went completely virtual. Due to being virtual, several adjustments were made to SRI programming, but this did not impact

scholars' ability to meet with their library or faculty mentors or McNair staff. The shift by most university offices to virtual operations allowed for more flexibility in programming and meetings. Due to the shift, the McNair staff required scholars to meet with their library mentors more frequently. Before COVID-19, library mentors provided assistance to scholars by email, but most meetings were face-to-face, which resulted in logistical difficulties given the scholars' complex schedules. Scholars also discovered the value of meeting with their faculty mentors and library mentors at the same time. These meetings would have been very difficult to schedule in person due to complicated schedules.

Moreover, scholars in the past reported not being able to attend workshops due to outside time constraints but having workshops over Zoom allowed scholars to view recordings of meetings they were unable to attend. Several scholars took advantage of the workshops offered and others reviewed the recordings and planned to review them over the summer and SRI for a refresher. The library workshops continued to be offered twice in the same week for students who wanted to attend a live session. One scholar who missed the Presenting Research workshop stated, "Again, another great presentation I regret to have missed. I will also be referring to this video over the summer." Other workshops were not suited for Zoom. These workshops would have benefited from being held in the teaching computer lab in Jackson Library. For example, the Zotero citation manager workshop was harder to administer over Zoom because librarians were not able to walk around and view student computers to troubleshoot any issues they were having or to show them individualized tips or tricks that might be helpful. Library mentors also had discussions and interactive elements built into the in-person workshop sessions that did not translate easily to Zoom.

Decisions have not been made regarding what McNair operations will look like in the future. As of this writing, social distancing guidelines are still in place for schools and universities in North Carolina. The McNair Scholars program will look at ways that they can use a hybrid workshop method in the future to allow for the recording of workshops for scholars who are not able to attend due to work or academic constraints. Library mentors will continue to be an integral part of the McNair Scholars program. More and better emphasis is being put on the Three-Mentor Model and requiring scholars to set up additional meetings between their faculty mentor, library mentor, and themselves.

Assessment

Every year after the Summer Research Institute, McNair staff solicit feedback from everyone involved in executing SRI. Based on this feedback, several changes have been made. In previous years, library mentors were introduced to scholars later in the SRI process. For the 2020–2021 school year, library mentors were introduced to scholars at the beginning of the independent study course tak-

ing place in the spring, prior to SRI, based on past recommendations. Previous scholars who completed SRI were asked about their experiences with library mentors. Several scholars mentioned how they wished they had reached out to their library mentor more or known more about library resources sooner.

Library mentors can help scholars at any stage of their research process. Based on feedback and recommendations from scholars and library mentors, scholars were required to meet with their library mentors at least once a month, as they would with their faculty mentors. Scholars were required to meet with their library mentors, faculty mentors, and McNair staff at least one time during the semester to discuss their research project—in addition to having at least two meetings with their faculty and library mentors together during the semester. This was added in hopes of making sure that all members of the Three-Mentor Model team were on the same page regarding scholars' research projects. One of the components of the independent study course was weekly workshops. As discussed in the earlier section, library mentors hosted several workshops for SRI scholars. Library mentors took on a more active role this year in terms of preparing students for SRI.

As discussed previously, library mentors hosted multiple workshops to prepare scholars for SRI and future research projects. After each workshop, scholars were asked to fill out reflection forms. The reflection forms followed a 3-2-1-1 method where scholars were asked to describe three ideas/learnings/concepts from the presentation, describe two examples of how they can use what they learned for their research or graduate studies, describe one question or unresolved area they plan to discuss with their faculty mentors, library mentors, or McNair staff mentor, and describe the best part of this experience or areas of improvement.⁹ For many scholars, the workshops led by library mentors were their first introduction to library resources and services. Scholars discussed how they would utilize these resources with future projects. One scholar stated, "I love how detailed they [library mentors] were in breaking down the UNCG library website and how to use the database search engines. I stink at using keywords, so this will really help!"

Recommendations and Best Practices

The collaboration between the McNair Scholars program and the University Libraries at UNCG is different from many traditional faculty/librarian research collaborations because the collaboration is not facilitated by an academic department. When UNCG applied for and received the initial McNair Scholars grant, the office was housed in Enrollment Management, which is not a typical area ripe for library collaboration. (It has since been moved to the Division of

Undergraduate Student Success, which is part of Academic Affairs.) Since librarians had established relationships with colleagues in that area through other projects, the libraries were seen as potential partners when the initial grant was conceived. This underscores the importance of establishing relationships across campus and outside of traditional Academic Affairs units.

Maintaining communication throughout a project is also an important key to success. Librarians have been treated as partners in the McNair Scholars grant project from the beginning, so they have been able to work together to tweak the librarians' involvement to be most beneficial to the scholars, based on their individual areas of expertise. Library mentors and scholars should be connected with each other as soon as possible. When library mentors are included in the project starting with the research design phase, they are better able to assist scholars and it is easier for the library mentor to build rapport with the scholar. The McNair Scholars program treating librarians as formal mentors, who are present from the beginning, allows for more lasting relationships to be formed. Assigning library mentors based on the topic of the student's project instead of automatically assigning them based on their major discipline has been a valuable learning experience because it has served as a reminder that the best person to help a student may not always be their liaison librarian.

Library mentors' work with the McNair Scholars program has also improved how they work with other students. This sustained involvement with the scholars' research projects has given mentors valuable insight into how students approach the research process and how librarians can be beneficial from beginning to end, and not just at the literature review stage.

Conclusion

Mentoring of any type is widely viewed as beneficial for all college students, but especially for first-generation students and students from underrepresented backgrounds.¹⁰ Implementing the Three-Mentor Model in the McNair Scholars program at UNC Greensboro has been beneficial to all parties: students, faculty mentors, McNair staff, and library mentors. The presence of multiple mentors in the program gives students ample opportunity to find a mentor who resonates with them while also providing them with a network of people with varying backgrounds who can support them as they progress through college and toward graduate school. The Three-Mentor Model in the McNair Scholars program at UNC Greensboro can serve as a model for library integration with other undergraduate research programs by showing that research mentors can come from a variety of places across the university. Libraries can take the lead in establishing mentoring networks for students who undertake undergraduate research by forming relationships with campus undergraduate research offices and other student support offices on campus.

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