Inequalities in undergraduate enrollment based on race, ethnicity, income, and other demographic characteristics ultimately affect diversity in the pipeline to graduate school (Ma et al., 2019; Perna & Kurban, 2013). Specifically, ethnic/racial minorities, low-income students, and first-generation college students are underrepresented in postsecondary education (Bragg, 2013; Okahana & Zhou, 2019). Further, college faculty and administrators are focused on supporting undergraduate student retention and completion, with less focus on postgraduation outcomes. However, the path to graduate school enrollment is often shaped by key undergraduate experiences and programs, and it is important that colleges are also able to adequately prepare students for graduate education.

Undergraduate research opportunities are one specific way faculty prepare students for graduate school, representing one of the top high-impact practices for promoting student success (Kuh, 2008). The Association of American Colleges and Universities recognizes 11 high-impact educational practices, including first-year seminars and experiences, common intellectual experiences, learning outcomes, writing-intensive courses, collaborative assignments, undergraduate research, diversity and global learning, ePortfolios, service-learning, internships, and capstone courses and projects. High-impact educational practices "are correlated with positive educational results for students from widely varying backgrounds" (Kuh, 2008, p. 1). Undergraduate
students who participate in these high-impact activities consistently persist at a higher rate, report higher rates of faculty and peer interaction, possess greater appreciation of diversity and diverse viewpoints, and demonstrate increases in critical thinking and writing skills (Brownell & Swanner, 2009). The challenge is the “majority of college students do not have the opportunity to participate in high-impact activities” (p. 26) and first-generation college students and Students of Color are less likely to participate compared to their continuing generation and White peers (Finley & McNair, 2013; Kuh, 2008).

Notably, undergraduate research is a key solution to increasing participation in graduate school, especially among poor, working-class, and underserved populations. Undergraduate research programs provide students with opportunities to work with faculty and peer mentors and to engage in research activities that lead to a deeper understanding of course content (Kuh, 2008). The goal of undergraduate research is “to involve students with actively contested questions, empirical observation, cutting-edge technologies, and the sense of excitement that comes from working to answer important questions” (p. 10). Students can find out about these opportunities through central offices of undergraduate research, a faculty member in their discipline, or through a targeted undergraduate research program. However, underserved populations (e.g., first-generation college students, Students of Color) are less likely to participate in high-impact practices, including undergraduate research opportunities (Finley & McNair, 2013; Kuh, 2008).

This chapter highlights a unique undergraduate research program for students from poor and working-class backgrounds and additional underserved student populations. The Ronald E. McNair Post-Baccalaureate Achievement Program, commonly known as the McNair Scholars Program, helps underserved students navigate the complex process of preparing for and enrolling in graduate school. In this chapter, we provide an overview of the McNair Scholars Program, highlight the program at Louisiana State University (LSU), explain how the program is a form of capital that helps underserved students, describe challenges and triumphs, and conclude with a discussion on how undergraduate research programs can be scaled to reach more working-class students in the future. As coauthors, we approached writing this chapter through the lens of our unique, yet collective, experiences; notably, all of us have worked with a McNair Scholars Program. Ashley Clayton has served as a faculty mentor to a LSU McNair scholar, Tiffany Davis is the former director of the McNair Scholars Program at Bowling Green State University, and Joe Givens is the current director of the McNair Scholars Program at LSU.
Overview of McNair Scholars Program

The McNair Scholars Program is a U.S. Department of Education–funded TRIO program (U.S. Department of Education, 2020a) designed for first-generation college students, students with poor or working-class backgrounds, or students who are from a racial/ethnic group underrepresented (e.g., African American, Latino American, Native American) at the doctoral level (U.S. Department of Education, 2020a). The program was named to honor the legacy of Ronald E. McNair, one of the astronauts who perished in the 1986 Challenger explosion. McNair was the embodiment of a scholar—a person with a love of knowledge, a tenacity for achievement, and a passion for life. In the 2019–2020 academic year, there were McNair Scholars Programs at 187 institutions in the United States serving 5,242 total students (U.S. Department of Education, 2020b). McNair programs exist across a variety of Carnegie classifications of institutional size, type, and research activity (for a full list of schools, see www.mcnairscholars.com). The program encourages students from underresourced and underrepresented populations to pursue graduate studies by providing opportunities to engage in undergraduate research experiences and develop the skills and student/faculty mentor relationships critical to success at the doctoral level. One of the long-term goals of the McNair Scholars Program is to prepare underserved students for graduate education and increase PhD degree attainment for individuals with underserved identities. Importantly, with increased doctoral degree attainment, the McNair Scholars Program hopes to help diversify the professoriate, which not only allows for more role models for poor, working-class, and underserved student populations but also the potential for more culturally responsive pedagogies in the classroom to educate an increasingly diverse student body.

The origins of the McNair Scholars Program dates back to the early 1980s, when there was concern among policymakers and academic leaders that a wave of retirements from an aging faculty population coupled with a bottlenecked pipeline to academia would cause a crisis of faculty shortages. Concurrently, there was a growing acknowledgment that, although the TRIO programs were effective at increasing baccalaureate degree attainment of low-income and first-generation college students, there was a concerning lack of support for the graduate school aspirations of these special populations.

The federal government holds a grant competition open to higher education institutions for McNair Scholars Program funding. According to the U.S. Department of Education (2020b):
All McNair projects must provide the following activities: opportunities for research or other scholarly activities; summer internships; seminars and other educational activities designed to prepare students for doctoral study; tutoring; academic counselings; and activities designed to assist students participating in the project in securing admission to and financial assistance for enrollment in graduate programs. McNair projects may also provide the following additional activities: education or counseling services designed to improve financial and economic literacy of students; mentoring programs involving faculty members at institutions of higher education or students, or any combination of such persons; and exposure to cultural events and academic programs not usually available to disadvantaged students. (para. 2)

**LSU McNair Scholars Program**

First funded through a TRIO grant in 1992, the LSU McNair Program has been the primary support system at LSU for low-income, first-generation, and historically underrepresented racial/ethnic students seeking to become involved in undergraduate research and develop the skills and knowledge to transition to graduate school. Housed under the umbrella of the University College, the primary advising unit for first-year students and students who are working to transition into a major college, the McNair Program is one of the retention-specific programs that focus on special student populations, alongside another TRIO program, Student Support Services (U.S. Department of Education, 2020b).

The LSU McNair Program staff organize their service delivery on a two-column model of focus, with one column being the foundations for rigorous research and the other column being the collective efforts to prepare students to be competitive graduate school applicants and successful graduate students. Managed by two full-time staff, a director and office coordinator, along with the support of a graduate assistant, the minimal staffing arrangement requires McNair staff to build capacity for student support through partnerships, alliances, and collaboration with countless faculty, staff, and graduate students (Davis, 2014).

The LSU McNair Program serves three cohorts of 11 students for a total of 33 students per year. The Delta cohort comprises rising sophomores and juniors who participate in interventions that are focused on the foundational principles of research and an introduction to healthy mentor relationships. After a student completes the research training and at least one semester of research activity, they join the Beta cohort, which is primarily composed of juniors. While in the Beta cohort, students produce a rigorous
research project while leveraging other undergraduate research resources. For example, they are co-advised through the research process by McNair staff and an Honors College adviser, who help the student to organize their work into a thesis and complete the milestones to graduate with honors. They also participate in the Distinguished Researcher Program supported by LSU Discover, an office that promotes undergraduate research. Students join the Alpha cohort within a year of their graduation. With their research essentially complete, they focus efforts on crafting applications for competitive fellowships (e.g., National Science Foundation Graduate Research Fellowship and Fulbright Scholars) and preparing their graduate school application packages. Spring semester activities for the Alpha cohort focus on transitioning to graduate school. Yosso's (2005) cultural wealth model is at the core of all program design and intervention decisions. The guiding principle for the LSU McNair Program is empowering students to leverage the gifts and capital they bring to the academic environment while working with campus partners to cultivate an environment at LSU that reinforces their cultural wealth.

**Nurturing Cultural Wealth Through the McNair Scholars Program Experience**

Yosso's (2005) community cultural wealth model represents an antideficit framework based in critical race theory (CRT; Solórzano, 1998) which argues that Students of Color possess cultural knowledge, skills, and abilities in the form of six types of capital: aspirational, familial, linguistic, social, navigational, and resistant. Yosso argued these six forms of capital are dynamic processes that build upon and interact with each other to form the cultural wealth that Students of Color possess and bring with them into the collegiate environment. Her model has been used by higher education administrators as a strengths-based approach to not only acknowledge the cultural wealth of minoritized communities outside of historically underrepresented racial/ethnic populations, including those from poor and working-class backgrounds, but also to identify how institutional agents can nurture these forms of capital. In this section, we provide a brief description of each of the forms of capital included in Yosso's (2005) cultural wealth model and how the McNair experience serves as a pathway to nurture underresourced students. Further, we provide supporting quotes from current LSU McNair scholars, who we interviewed as part of a larger study.

*Aspirational capital* is about how minoritized communities maintain hopes and dreams for their futures despite the barriers that may exist for themselves, whether real or perceived. As two-thirds of McNair Program
participants must be both first-generation college students and come from low-income backgrounds, most of the scholars will be the first in their family to graduate from college. Yet despite the educational inequities resulting in numerous barriers accessing and transitioning into higher education, McNair Scholars are high-achieving and highly motivated students who have already demonstrated academic success. An LSU McNair scholar explained how the program supports their aspirations: “I know the goal of McNair is to increase the number of PhDs among underrepresented populations. That kind of inspired me in a sense. I could be that person.” McNair faculty mentors play a vital role in nurturing scholars’ aspirations through one-on-one research guidance and academic advising which promotes the desirable outcomes of undergraduate research, such as clarification of future career choice, seamless transition to graduate study, and increases in interest and motivation for students’ academic fields (Pascalella & Terenzini, 2005; Seymour et al., 2004).

*Linguistic capital* refers to the skills—intellectual and social—that minoritized populations attain through their communication experiences and the ability to communicate through visual art, music, storytelling, and poetry (Hudson, 2018). Undergraduate research opportunities are often situated in the “hard science” disciplines as a result of the National Science Foundation’s (NSF) Research Experiences for Undergraduates (REU) Program (Merkel, 2003). However, McNair Programs embrace the entire spectrum of undergraduate research and creative inquiry by encouraging students to engage in social science and arts-based research projects that cultivate diverse and inclusive methodological approaches perhaps better aligned with and supportive of students’ communication strengths.

*Familial capital* is “cultural knowledge(s) nurtured among *familia* (kin) that carries a sense of community history, memory, and cultural intuition” (Yosso, 2005, p. 79). McNair Programs actively involve family in their students’ educational journeys and successes through sharing newsletters and inviting families on campus for students’ research presentations, which are often informed by their cultural heritage and lived experiences. This form of cultural wealth also encompasses the idea of kinship ties to include family outside of the traditional notion of the nuclear family, such as friends. One LSU McNair scholar explained how the cohort model helped her: “I wanted a sense of community more than anything … just like having people like me who are underrepresented, into research, and [we] kind of all can connect.” When McNair students join the program, they are not only joining their campus-based cohorts, they are connecting with an expansive network of nearly 5 million TRIO alumni achievers (see www.coenet.org/alumni). McNair Scholars, therefore, can and do develop kinship ties that extend beyond the campus and undergraduate experience, as the Council
for Opportunity in Education's TRIO alumni initiatives provide leadership and social opportunities for connection and further development of social capital.

*Social capital* are the networks of peers and community resources that provide practical and emotional support to assist minoritized communities in navigating social institutions, including education. Being named a McNair scholar connects students within a campus-based cohort of like-minded peers, but also a national network of scholars and faculty allies through participation in research conferences, graduate school visits, and TRIO educational meetings. These collective research and learning opportunities shape the McNair experience as students provide peer mentorship and support; faculty mentors serve as role models, coaches, and sponsors within the discipline; and institutional agents who serve in gatekeeping functions provide assistance and advocacy in securing financial resources that help to decrease the barriers to applying for and attending graduate school (e.g., GRE and application fee waivers). An LSU scholar shared that the McNair Program helped me meet more people, more adults who could be on my team and support me if I needed it, just have my back and fight for me. So I'm really grateful for McNair, and I think about that all the time, because I've made other connections through it. And now I do have more than just myself backing me up.

Yosso (2005) further explained that minoritized communities then share the information and resources that they have received with their social networks, embodying the "lift as you climb" and collectivist ethos common in historically underrepresented populations. For example, McNair scholars are often the primary reason later cohorts of students find out and apply for the program (Avital-Longmire, 2019). In addition, they not only serve as informal mentors to younger cohorts of McNair scholars but also serve in tutoring and mentoring roles for other TRIO programs, such as Student Support Services and Upward Bound.

*Navigational capital* refers to the acquired skills that are necessary for minoritized populations to navigate social institutions not designed with them in mind, such as American higher education institutions founded for the purposes of educating wealthy White men for political and religious offices rather than People of Color and low-income populations (Patton, 2016). McNair Program administrators rely on campus and community champions to partner with them to offer summer research institutes, educational workshops, and individual advising that assist scholars in navigating institutional structures and culture, some that may even be unsupportive or
hostile. McNair staff openly address critical topics such as navigating cross-cultural student—faculty interactions within the mentoring dyad (Davis, 2014), demystifying the process of applying to and thriving in graduate school, honing academic research skills, and developing resiliency, perseverance, and grit.

*Resistant capital* refers to the knowledge and skills that minoritized people possess as a result of engaging in behaviors that challenge inequity and inequality. The McNair Program cultivates this form of capital in diverse ways. To start, as a TRIO program, scholars and alumni actively engage in educational policy and advocacy work by writing letters to legislators, attending the Council for Opportunity in Education’s Annual Policy Seminar, and by serving as TRIO ambassadors. Furthermore, Yosso (2005) has discussed how resistant capital is manifested when individuals pass along the knowledge of community and cultural wealth to ensure that their communities resist the status quo. Lastly, McNair scholars often enact resistant capital through the research they undertake (Avital-Longmire, 2019)—applied research that purposes to inspire social change.

The McNair student experience is comprehensive and dynamic. One LSU student explained that the McNair Program “definitely pushed me over the fence to, ‘yes I’m going to graduate school and yes I’m getting a doctorate.’ It’s not even a question in my head anymore.” Although McNair programs have proven to be successful in helping to increase graduate school aspirations and attendance while broadening the pipeline to the professoriate, it is not without its challenges.

**Challenges and Triumphs**

Two of the most pressing issues for higher education professionals in the 21st century are scarcity of resources and changing demographics. College affordability is a constant concern of LSU McNair students, and financial insecurity is an ever-present distraction that shifts focus from their academic path. In a 2019 survey of LSU McNair scholars, 90% of the students worked at least 20 hours per week. Concurrently, a quality undergraduate research experience should be at least 15 hours per week. The program is challenged to develop a support system that considers work schedules and commitments outside the academic setting. The LSU McNair Program has developed strategies to be more accessible to students with difficult work and research schedules. Through the use of remote technology like Zoom, McNair staff provide advising, feedback, and writing support without time and location
constraints. The McNair staff has also developed key partnerships with other undergraduate research initiatives to allow the students to layer experiences and reduce duplication of requirements.

Students are not the only stakeholders feeling the pressure of rising costs of higher education. Administrators are managing a decade of historic disinvestment in education, and scarcity of resources, coupled with changing enrollment trends, are constricting capacity for efforts to support undergraduate research and postbaccalaureate aspirations of underrepresented students. Anticipating the enrollment decline caused by shifting demographics and increased diversification, LSU began an effort in 2017 to aggressively recruit first-generation college students and historically underrepresented racial/ethnic students. Admirably, their efforts led to record numbers of first-generation, low-income, and historically underrepresented racial/ethnic students, which catalyzed an interest in programs and interventions that focus on these students. However, there is often more focus on prioritizing the acute concerns of retention and near-term success over rigorous and time-intensive high-impact practices like undergraduate research.

In 2008, the LSU McNair Program was one of numerous programs that provided undergraduate research funding, mentoring, and academic support to underserved students. Over the past decade, as state funding for higher education has declined, several undergraduate research programs were defunded and shuttered. Because of the uncertainty in funding for undergraduate initiatives that target underresourced students, it is essential that advocates for those students work to build capacity for them in spaces that were not specifically charged with supporting poor and working-class students, first-generation college students, and historically underrepresented racial/ethnic students.

In the design of the 2017–2022 grant, the LSU McNair director reached out to stakeholders in the campus departments responsible for promoting undergraduate research, including the LSU Honors College and LSU Discover. The partnership with the Honors College allows students to retroactively join the college and take advantage of the wealth of resources and support provided to honors students. Additionally, there was an alignment of requirements for the honors thesis and McNair Program thesis, so every McNair scholar concurrently works toward an honors thesis. The McNair Program director serves on the LSU Discovery Advisory Board and advises the LSU Discover staff about strategies to make their efforts more accessible to first-generation, low-income, and historically underrepresented racial/ethnic students. LSU Discover and McNair cosponsor workshops
and work together in recruiting efforts. In 2018, LSU Discover developed a "Distinguished Researcher" graduation medal acknowledging undergraduates who complete specific benchmarks and present their research, and McNair scholars who complete their research project are eligible to graduate as distinguished researchers. These partnerships not only provide a more fruitful research experience for the McNair scholars but also ensure the large-scale undergraduate research initiatives on campus are responding to the needs of poor and working-class, first-generation, and historically underrepresented racial/ethnic college students.

The LSU McNair Program's proficient approach to the changing dynamics of higher education ensures that it maintains a record of success and contributes to a more inclusive campus community. These strategies have resulted in an 84% graduate degree attainment rate and a 30% doctoral degree attainment rate within 10 years of scholars receiving their baccalaureate degree.

**Future of McNair and Undergraduate Research Programs**

This chapter provided a broad overview of undergraduate research opportunities and, more specifically, the McNair Scholars Program. As a high-impact practice, undergraduate research opportunities are a key experience promoting undergraduate student success, as well as preparing students for graduate studies (Kuh, 2008). Importantly, the McNair Scholars Program focuses on providing underresourced students with research opportunities in order to increase diversity in both graduate school and professoriate pipelines. Aligned with the focus of this book, McNair is a great example of a social class academic and learning support for poor and working-class students. We provide three recommendations for how undergraduate research programs, such as McNair Scholars Programs, can be scalable to reach more underresourced students in the future.

First, institutions without a McNair Scholars Program should consider submitting an application during the next invitation for new grant awards. Every 5 years, the U.S. Department of Education holds a competition for new awards. In 2017, new grant applicants (without a current McNair program) were required to serve at least 25 students with a maximum award of $226,600 (U.S. Department of Education, 2017). Institutions should prepare several years in advance for the grant competition and work collaboratively across departments to meet all grant requirements. It is critical that new applicants carefully read the application instructions and follow all grant guidelines (e.g., budget, participants, length of proposal) to avoid
being disqualified. Importantly, new applicants are encouraged to reach out to the program specialist assigned to their state, who can answer specific grant application questions.

Second, we recommend that institutions invest in more organized undergraduate research programs. As a high-impact practice, increasing opportunities for students to participate in research during their baccalaureate program will ultimately support student success (Kuh, 2008). With less than 200 institutions offering the McNair Scholars Program, colleges can consider developing their own programs designed to increase the graduate school pipeline for underresourced and underserved student populations. Further, institutions can use the required activities of McNair as a guide to providing resources for poor and working-class students. Specifically, universities should be intentional about making undergraduate research, scholarly activities, summer internships, graduate school preparation, tutoring, and faculty mentorship more accessible to students who are low-income and/or first-generation college students (U.S. Department of Education, 2019).

Third, we recommend that faculty intentionally encourage underresourced and underserved students to engage in research projects. As faculty provide undergraduate research opportunities, they should advertise them broadly. Students who are first-generation college students or come from poor or working-class backgrounds might need additional encouragement and support to participate in research. These research opportunities can help build confidence in students and encourage them to see graduate school is a realistic option. Further, although many faculty members invite graduate students to work with them on research projects and grants, there are likely many opportunities in which undergraduate students could join a project. There might be an opportunity for an undergraduate student to join a grant project, to work as a research assistant, or to write a thesis. Faculty are in a unique position to help undergraduate students cultivate graduate school aspirations and influence more underserved populations to further their education.

In closing, institutions need to purposefully provide underresourced students with undergraduate research opportunities and graduate school preparation. The pipeline to the professoriate starts with increasing participation in graduate education. Ultimately, we argue that research opportunities and mentorship through the McNair Scholars Program is an effective way to increase diversity in doctoral programs and eventually the professoriate. Although institutions are often focused on more short-term student success measures of retention and completion, they play a critical role in preparing students for postbaccalaureate opportunities.
References


SOCIAL CLASS SUPPORTS
Programs and Practices to Serve and Sustain Poor and Working-Class Students Through Higher Education

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