

RE-254913-OLS-23- Weill Medical College of Cornell University

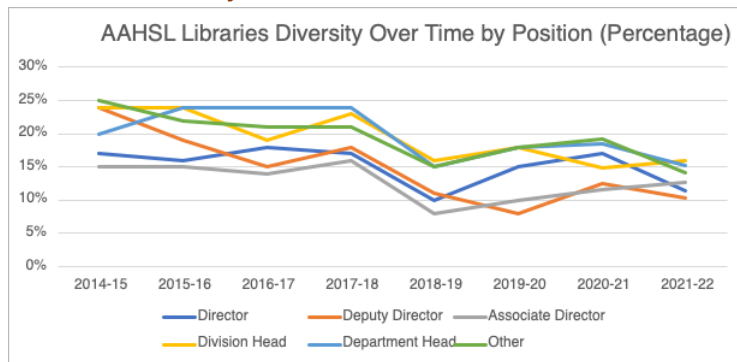
High School Push-In Program to Encourage Pursuit of a Career in Library Science

Project Justification

Proposed Program as Aligned with Laura Bush 21st Century Librarian Program Goals

Weill Cornell Medical (WCM) College of Cornell University's Samuel J. Wood Library and Mentoring in Medicine, Inc. (MIM) respectfully request \$149,277 from the **IMLS Laura Bush 21st Century Librarian Program** for a two-year **planning grant** that would lay a strong and engaging foundation for a national Library Pathway Program from middle school to career. The project will launch at the high school level and be sustained by development of an online toolkit of modules over time. With this planning grant, we will target high school students in an elective course to specifically introduce health sciences librarianship to this population. This planning grant supports the following **Laura Bush 21st Century goal and objective**: Recruit, train, develop, and retain a diverse workforce of library and archives professionals. **Objective 1.1**: Develop or enhance programs specifically to encourage students of diverse and underrepresented backgrounds at the middle school, high school, and postsecondary levels to pursue careers in library and information science.

Broad Statement of Need



Since 2017, the American Association of Health Sciences Libraries (AAHSL) annual survey shows a decrease in Black, Indigenous, and People of Color (BIPOC) library leaders across its member libraries. Health sciences librarianship needs a concerted effort to increase people of diverse and underrepresented backgrounds to better represent the constituents that this profession serves and to help decrease health disparities. With the overall racial and ethnic diversity of the country increasing, medical librarians must represent the diverse population we serve in order to promote a healthier and literate

country.

As of 2021, according to the Bureau of Labor Statistics, only 7.1% of librarians were Black. In 2021, almost 87% of librarians were white, which has remained the average since 2013 [1] This lack of diversity is likely hurting the library field and the communities the librarians serve. Research in healthcare has shown that poor medical workforce diversity hurts health equity, as racial concordance between patients and providers can improve patient experiences [2] as well as patient-reported clinical quality of care [3]. As health science librarians interact with patients and other healthcare providers, it stands to reason that a more diverse workforce in the library field would have a positive impact on the patron experience. These statistics illustrate that while a lot of funding and effort has gone into seeking to increase diversity in the library profession, the outcome has been less diversity rather than more diversity. Most of the diversity efforts targeted career level librarians. A few targeted undergraduate programs.

Proposed Project Rationale

Our research found that few programs which introduce students to the discipline of library science are implemented at the high school level and none at the middle school level, yet career decisions can be made at a young age[4][5-9]. Previously WCM and MIM have worked together to evaluate diverse college students' health literacy and knowledge of librarianship as a career. In March of 2022, a survey was administered. The survey results indicated that 16% (n=44) of the diverse college students surveyed thought that popularity of a website indicates reliability and credibility. Additionally, only 20% knew that a graduate degree is required to become a librarian. These statistics indicate we need to educate this population *prior to* college. The dearth of students from diverse and underrepresented backgrounds interested in seeking careers in health sciences librarianship is alarming.

Project Aims

The program aims include: (1) increasing the number of students interested in librarianship from diverse and underrepresented backgrounds through exposure to this field while in high school, (2) informing youth of how to combat misinformation and disinformation, and (3) teaching reliable health information in order to combat health

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disparities and support improved health literacy in underserved communities. The first project aim addresses the LB21 Objective 1:1 by developing a program specifically to encourage students of diverse and underrepresented backgrounds at the high school level to pursue careers in library and information science. The second aim addresses the “infodemic” of misinformation and, the more recently termed, disinformation in our country. The World Health Organization, the United Nations, the United States (US) Surgeon General, and several other global organizations have stated that health misinformation is a serious threat to public health and have urged national governments to “empower communities to develop solutions and resilience against” misinformation such as scientific and health literacy training [10,11]. In particular, misinformation leads to vaccine hesitancy or refusal [12], in turn resulting in lower vaccination rates and outbreaks of preventable disease [13]. A recent national survey found that distrust in COVID-19 vaccines is associated with difficulty in understanding scientific information and mistrust in scientific research [14]. The proposal will educate high school students to identify misinformation along with disinformation as part of their health literacy training [15]. The third aim seeks to augment health literacy and, by extension, reduce health differences and improve health outcomes in underserved communities.

Mentoring in Medicine is a Natural Partner to Achieve the Above Project Aims

Mentoring in Medicine, a 501c3 nonprofit organization, is an educational youth development program founded in 2007 with headquarters in the Bronx, NY. The mission of this continuity program is to inspire and equip students from underrepresented backgrounds to pursue health and science careers beginning in elementary school. MIM has developed school-based and after school programs with funding and technical assistance from the National Library of Medicine from 2008-2015. These programs have been replicated and sustained through strategic collaborations and diversified funding sources. The programs are currently in 30 middle and high schools in NYC and five in Roosevelt, Long Island [16]. In partnership with the National Library of Medicine and the National Institute of Minority Health and Health Disparities, MIM also pioneered Science Day for Students at NIH, a biomedical immersion fair for diverse students. For seven years, the MIM Team has hosted 500 DC public school students at the National Institutes of Health with the participation of up to 18 Institutes [17]. The work of MIM has been widely published in peer-reviewed journals and book chapters, including *Information Services & Use*, *Studies in Health Technology and Informatics*, *Annals of Emergency Medicine* and *Academic Emergency Medicine*. Through this planning grant, MIM will incorporate health sciences librarianship as another health sciences career in its portfolio, and educate students on key methods to recognize and utilize reliable information to improve the health of their communities.

Community Health Ambassador Program (CHAmP)

WCM and MIM propose to establish the Community Health Ambassador Program (CHAmP). CHAmP is a health information literacy program which will increase the exposure and training of diverse and underrepresented background high school (and in the future middle school) students to the field of health sciences librarianship. This planning grant will add health sciences librarianship to the cadre of health sciences professions that MIM introduces to its high school students. In order to increase students choosing a career in library science, they need early exposure to this field, and to librarians and health information professionals of similar underrepresented backgrounds, so they can be encouraged to consider the field of medical library science as they explore career options. MIM tracks students’ career choices to identify the success of their program. This student tracking will inform the success of the CHAmP program.

We will create, implement and evaluate the first five Library and Information Science (LIS) push-in modules which will be provided as open educational resources that can be used in-person or virtually. These modules cover aspects of LIS such as searching for and identifying credible health information, developing literacy in health terminology, recognizing misinformation, citing credible information resources, learning to critically read a scientific and lay article, and becoming familiar with asking questions of health professionals that can lead to informed health decisions and healthier lifestyles. Each module will consist of 10-15 minutes of instruction, followed by 30 minutes of three engaging activities with discussion that reinforce the initial instruction in a fun and meaningful way, and adheres to the educational standards of New York State. Key deliverables include five modules, each with three LIS activities, a CHAmP Certificate of Completion, and publicly accessible final report that synthesizes findings of our pre- and post-surveys and focus groups that evaluate

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the student experience with the curriculum. Learnings from this evaluation will be used in year two to improve the pilot curriculum before final release.

Target Groups

We are planning to launch the pilot in the Bronx and Harlem in order to culturally increase health literacy. Among 62 counties in New York State, the Bronx has ranked last in crucial health measures and outcomes for ten consecutive years [18]. In East Harlem, 23% of residents live in poverty with a 42% avertable death rate [19]. Both the Bronx and Harlem have been selected for the initial pilot due to the relationship of MIM with school leadership in this community. This grant, if funded, represents a concerted effort to increase the diversity of medical librarianship to represent a broader range of demographic user groups.

The push-in pilot program will be initially piloted in the Bronx at Mount Saint Michael Academy which is an all-male 6-12th grade Catholic school with a school population of 733 students comprised of 63.4% Black, 23.4% Hispanic and 0.4% Native Americans. The other pilot school will be Thurgood Marshall Academy for Learning and Social Change in Harlem, which is a 6-12th grade school with a population of 534 students comprised of 65% Black and 29.4% Hispanic. MIM currently has push-in health-related elective courses during the school day at both locations but wishes to expand by including new information science and medical librarianship to this interested self-selected audience. While the initial target groups are New York City (NYC) schools, the project will develop deliverables that can be used to raise students' awareness of and interest in careers in medical librarianship throughout the country along with improving their knowledge of information science.

Our Approach to Developing and Delivering CHAmP

The perspectives and contributions of the high school students from underrepresented backgrounds are critically important to the success of this program. To gather these perspectives, students will first be engaged in focus groups to learn what they know and what they want to learn about health sciences librarianship. We will then administer pre- and post-surveys before and after they engage with each module of the curriculum. At the end of the program, they will again participate in focus groups to evaluate the overall student experience. The first year of the grant will gather these perspectives, and the curriculum will be improved based on what we learn from the students before its final release in 2025. This process incorporates the perspectives and contributions of the target group into the curriculum, and as it is iterated in project evaluation phases, allows for external input, validation, and consensus building to drive curriculum development.

Our research revealed that students of diverse and underrepresented backgrounds gravitate towards careers where (1) they find role models or mentors of similar cultures or backgrounds to theirs [20], (2) they see a cohort of peers exploring a career together [21], (3) they have previously been exposed to library or information work [22], (4) personal contacts or friends have chosen this career [23][4], and (5) faculty of color are instructors [23,24]. This planning grant will incorporate these factors to increase our students' interest in the library science profession.

Project Work Plan

Curriculum Overview

CHAmP, a high school push-in program will introduce students to health sciences librarianship through health literacy project-based learning, teaching them how to access reliable medical and public health information. This project will augment the fifteen-year successful [MIM curricular template](#) with five new LIS lectures and activities. WCM librarians, with the assistance of a MIM Educator and Youth Engagement Specialist, and incorporating feedback from the advisory board and high school students, will create a pilot CHAmP Internship curriculum of five lectures that will cover LIS topics such as 1) searching for and identifying credible health information, 2) literacy in health terminology, 3) recognizing misinformation and disinformation, 4) citing credible information resources, and 5) how to read lay and scientific articles and to ask questions of health professionals that can lead to informed health decisions and healthier lifestyles. After completing all five modules, the students should understand how to search, read, and cite medical information and how

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to identify reliable public health information from misinformation and disinformation. The process for creating the new innovative curriculum will include working sessions with the project personnel to identify five information science topics and corresponding age-appropriate activities. A critical component of this planning grant is the establishment of an external Advisory Board of highly respected BIPOC library leaders with significant experience in the field, which will provide ongoing feedback to project investigators on the choice of LIS modules. Additionally, the Advisory Board’s views and recommendations will be sought regarding the cultural awareness of the curriculum as it is developed. The Advisory Board will be discussed in further detail below.

This exposure to information science constructs will raise the high school students’ awareness of information science skills with a medical or public health application; thereby introducing information science and librarianship as a career pathway. Through pre- and post-surveys and focus groups we will evaluate the students’ experience. Success will be measured by increased awareness of information science career options, the ability to distinguish reliable health information from misinformation, and demonstrated health literacy. Results from this evaluation during the first year will drive changes to the curriculum which will be implemented in the second year and detailed in a final report. A “CHAmP Internship Certificate of Completion” will be awarded to students who complete the pilot and the evaluation. The program will be sustainable and have national reach through the development of the open educational resource toolkit. This toolkit will include the LIS modules that comprise the curriculum, the associated information science activities, the pre- and post-surveys, the final report summarizing the student experience as learned through the surveys and focus groups, and the CHAmP Internship Certificate of Completion. All will be available on a publicly accessible web portal. The project will have eight phases over two years and is described in the chart below.

Project Timeline

Phase	Outputs and Measures	Timeline
I. Meeting and Planning	<ul style="list-style-type: none"> • Advisory Board Convened • Roles Reviewed / Work Planned • Communication Channels established 	August 2023
II. Curriculum Development	<ul style="list-style-type: none"> • Conduct focus groups to learn what students know and what they want to learn • Draft Curriculum for five Library and Information Science (LIS) modules, incorporating what students want to learn • Draft pre-post survey questions and focus group questions • Advisory Board review and feedback (two weeks for Advisory Board to review) 	August – December 2023
III. Pilot Curriculum	<ul style="list-style-type: none"> • Bronx – Mount Saint Michael Academy • Harlem – Thurgood Marshall Academy for Learning and Social Change • Gather survey data before and after each module at both sites • Advisory Board and investigators are curriculum instructors to provide faculty of color and role models of similar cultures to the students • Conduct focus groups to learn if students liked curriculum or have changes 	January – May 2024
IV. Assessment and Refinement	<ul style="list-style-type: none"> • Evaluate survey feedback • Evaluate focus group feedback • Identify and make curriculum changes based on student feedback, ensuring content is age-appropriate and engaging for high school students, and is what they want to learn • Advisory Board review and feedback (two weeks for Advisory Board to review) 	May – August 2024
V. Dissemination	<ul style="list-style-type: none"> • Present at the annual meeting of the Medical Library Association (MLA) • Train the Trainer Webinar • Free webinar through MLA Caucuses and the Network of the National Library of Medicine (NNLM) 	May – August, 2024
VI. Revised Curriculum	<ul style="list-style-type: none"> • Bronx – Mount Saint Michael Academy • Harlem – Thurgood Marshall Academy for Learning and Social Change 	September-December 2024

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Piloted in Second Year	<ul style="list-style-type: none"> • Gather survey data before and after each module at both sites • Advisory Board and investigators are curriculum instructors 	
VII. Assessment and Refinement	<ul style="list-style-type: none"> • Evaluate survey feedback • Conduct focus groups • Identify and make curriculum changes based on student feedback, ensuring content is age-appropriate and engaging for high school students • Advisory Board review and feedback (two weeks for Advisory Board to review) • Final Report Drafted 	January – June 2025
VIII. Dissemination	<ul style="list-style-type: none"> • Publicly Post Curriculum (Recorded LIS Modules) • Publicly Post Final Report • Present at MLA • Train the Trainer Webinar • Free webinar through MLA Caucuses, NNLM, and the Friends of the National Library of Medicine (FNLM) • Peer-reviewed article on project • Web Portal hosting five-lecture LIS curriculum, pre- and post-surveys, & final report 	May – July 2025

Dissemination

The pilot will have a robust dissemination plan that will target educators, medical librarians, community librarians and school librarians. The didactic portion of each LIS module will be recorded and included in the tool kit. In May of 2024, the project accomplishments to date will be described at the Medical Library Association (MLA), and throughout these months a series of two free webinars/year sponsored through the MLA African American and Latinx Caucuses. The project will also be announced to the members of the Association of Academic Health Sciences Libraries (AAHSL) which was the community from which the initial statistics on lack of diversity in health sciences librarianship was gleaned.

In May 2025, a final presentation of the project will be made at MLA, and two free webinars/year will again be held during the summer through MLA’s African American and Latinx Caucuses. These free webinars will describe the curriculum, the methods, the target population, and identify resources available. Further a train the trainer webinar for educators, community and school librarians will be offered through the Network of the National Library of Medicine (NNLM), which will raise awareness of the project, the available curriculum, and how to engage the target audience in one’s local area using the provided materials. AAHSL will make its members aware of this project and how to engage with its materials, as this association was the genesis of the statistics indicating this important need for greater diversity in health sciences librarianship. The Friends of the National Library of Medicine (FNLM) periodically offers its members timely webinars on topics of interest to health sciences libraries, and this project will be proposed to be highlighted by the Friends as well. Investigators and key personnel will draft a peer-reviewed journal article summarizing the project and its outcomes and submit to a well-recognized library journal. We expect that our toolkit will encourage reuse of the curriculum, coursework, and project findings and spur further steps by communities across the country to raise the awareness of high school students to the value of medical librarianship as a career.

Broad dissemination of this work will be realized through free webinars posted by the African American and Latinx Caucuses of MLA. We will also implement a train the trainer program for community and school librarians through the NNLM (see letters of support from NNLM Regions 1 and 7). A website that hosts the first five modules of the curriculum, surveys, Certificate of Completion, and final report will be publicly available, vastly expanding the program reach to be of national impact.

Project Roles and Responsibilities

Co-Investigators

Project Co-Investigator: Terrie R. Wheeler, AMLS, Librarian and Director, Samuel J. Wood Library. Wheeler has conceived this project with Lynne Holden and Diana Delgado and will oversee grant submission and IMLS communication. Wheeler

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has directed libraries for 35 years, and actively works to improve the lives of underrepresented communities in NYC. Her prior research on library leadership and information seeking behaviors has been widely published. Wheeler will be responsible to coordinate with investigators, MIM staff, and key personnel to evaluate results, share results with Advisory Board members, coordinate feedback, work with investigators to ensure dissemination, co-facilitate evaluation and focus groups, ensure Advisory Board approves revisions, co-drafts the final report and peer-reviewed article, and ensures dissemination as described. She obtained agreement from the NNLM Regions 1 and 7 to offer free train the trainer programs to the public to familiarize them with how to use the curriculum developed as part of this project.

Project Co-Investigator: Lynne Holden, MD, is a national thought innovator in mentoring students of underrepresented communities in health care professions, Dr. Holden's research over the last 30 years has explored how students from underrepresented communities can grow into health and science professionals that will make a major impact on the well-being of their communities. Dr. Holden is the Co-founder and President of MIM and a Professor of Emergency Medicine at the Albert Einstein College of Medicine. Since 2009, she has been a member of the Friends of the National Library of Medicine and serves on the Education Committee. Holden will be responsible for securing schools and students for the push-in program, co-developing LIS activities with WCM librarians and MIM staff, reviewing module pre- and post-surveys with MIM staff, co-facilitate evaluation and focus groups, periodically meet with Advisory Board, co-draft final report and peer-reviewed article, and participate in dissemination as described. Holden will request that the FNLM offer a webinar discussing the results of this project.

Project Co-Investigator: Diana Delgado, MLIS, Associate Librarian and Associate Director, Information, Education and Clinical Services, created and leads the Wood Library Anti-racism, Diversity and Inclusion Committee, has championed blinding applications for librarian positions at the Wood Library, and serves on the Weill Cornell Medicine Diversity and Inclusion Committee. Delgado serves as a mentor on BIPOC Become Librarians, a program dedicated to introducing undergraduate students who are BIPOC to careers in library and information science. Delgado has over 20 years of experience teaching faculty, students, and staff. As a member of the MLA African American and Latinx Caucuses, she may request that each caucus hold a free webinar on this project to disseminate results.

Key Personnel

WCM Library Key Personnel: Sarah Jewell, MLIS, Assistant Librarian and Assistant Director, Clinical Services, has written and spoken extensively on conducting systematic reviews. As the Equity, Diversity, and Inclusion Committee Chair for the Liberty Chapter of MLA, she leads DEI initiatives in medical librarianship. She has also published research on the effects of race and racial concordance in patient-physician communication.

WCM Library Key Personnel: Michael Wood, MLIS, Assistant Librarian and Head, Resource Management, has a keen interest in enabling diverse library professionals to thrive in their institutions and careers. A member of the Wood Library Anti-racism, Diversity and Inclusion committee, Wood has championed open access to publications whenever possible. Wood has designed curriculum and provided instruction to medical students.

WCM Library Key Personnel: Andy Hickner, MSI, Assistant Librarian and Education and Outreach Librarian, has extensive experience developing, delivering, and assessing curriculum-integrated instruction for students and trainees in the health sciences. As inaugural Co-Chair of the Weill Cornell Medicine Staff Equity and Inclusion Council, he has helped lead Weill Cornell staff efforts to promote a robust staff equity, inclusion, and belonging agenda across the institution.

Delgado, Hickner, Jewell, Wheeler and **Wood** will all be responsible to co-develop one module each, pre- and post-surveys, coordinate with team to evaluate results, meet with Advisory Board members as needed, work with investigators to ensure dissemination, co-revise two modules as deemed appropriate according to feedback, participate in evaluation and focus groups, co-draft the final report and peer-reviewed article, and ensures dissemination as described. In addition, **Delgado, Jewell,** and **Wood** will also be responsible to develop and co-present two modules.

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The MIM Educator, Jessica Boyle is a Bronx high school science teacher. She will be responsible for providing a template for the development of each new module and LIS activity, will review and approve each module, along with editing the five core LIS lectures for posting on the toolkit.

The MIM Youth Engagement specialist, Andrew Morrison, is an engineer, motivational speaker and youth development leader. He will review and update as appropriate each of the modules, ensuring that modules developed are age- and interest-appropriate for students. This individual will accompany the lecture instructors on each instructional activity, will interact with students to ensure their learning is maximized, and provide expertise in module development. Investigators and key personnel can provide him a rough draft of each module and this person will finalize it to best suit the needs and interests of students, while achieving expected learning outcomes. Further, he will be responsible for monitoring the focus group and distributing pre- and post-surveys to students.

Advisory Board

A critical component of this planning grant is the establishment of an external Advisory Board of highly respected BIPOC library leaders with significant experience in the field, which will provide ongoing external input, validation, and consensus building among themselves and the project investigators to ensure that this proposal is constantly reviewed and improved based on their expertise as BIPOC health sciences library leaders navigating the field of health sciences librarianship. A distinguished group of experienced LIS researchers has already agreed to review our curriculum content, approaches, and delivery, making culturally sensitive recommendations. In addition, they will participate as faculty of color for the high school students. Our Advisory Board is comprised of the following individuals: **Kawanna Bright**, PhD, Assistant Professor, East Carolina University; **Pamela Espinosa de los Monteros**, MLIS, Assistant Professor, Ohio State University; **Sandra Franklin**, MLS, AHIP, FMLA, Professor, Emory University; **Shannon Jones**, EdD, MLS, M.Ed, AHIP, Professor, Medical University of South Carolina, Director Region 2, NNLM; and **Barnaby Nicolas**, MSIS, AHIP, New York University Langone Health.

Diversity Plan

To ensure that we are culturally sensitive, and to hear the voices of librarians of underrepresented backgrounds, significant effort was put into cultivating a national Advisory Board comprised of health information and library thought leaders in diversity, equity, and inclusion who are distinguished health sciences library leaders and LIS researchers of color. This Advisory Board has agreed to review our curriculum content, approaches, and delivery, making culturally sensitive recommendations. In addition, they will participate as distinguished faculty to deliver one lecture and to be role model library leaders of color for the students. Each lecture will be recorded to include in the tool kit. Advisory Board members are listed above.

The specific activities in the proposal that will contribute to practices of diversity, equity and inclusion are as follows:

- Cohort formation for high school students allow them to explore the field of health sciences librarianship together, with colleagues from similar cultures and backgrounds, so they do not feel alienated, or on their own exploring a career where they may not find many who share their heritage.
- Provision of mentors from similar cultures and backgrounds so that these role models can affirm health sciences librarianship as a rewarding career choice for students from underrepresented backgrounds.
- Students will be rewarded for their participation with a CHAmP Internship Certificate of Completion.
- Students will engage with the constructs of information science and learn the skills to identify valid public health information, giving them wisdom to share with peers from their same culture or background, and confidence to master these skills.
- We will gather student feedback on their experiences throughout the project via pre- and post-surveys and focus groups. This will drive the curriculum and ensure that it is culturally sensitive, maximizing their learning experience.
- The curriculum and its deliverables will be made publicly available for all to use and continue to develop.
- Students will be tracked and those who go on to pursue a career in health information science will contribute to the diversity of the profession and receive information about resources to support career development.

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- Future grant applications will be sought after this is completed to extend the pathway program to undergraduate, graduate school, and first professional position, as well as to start in middle school.
- The dissemination of the project results will be through MLA's caucuses of color: African American and Latinx Caucuses, the MLA Liberty Chapter, and the NNLM thereby raising awareness in these communities of this work and engaging more librarians of color across the country.

The project investigators have included the Advisory Board and the specific schools in Bronx and Harlem in order to include all relevant participants and communities in this proposal. Over time as this pathway program foundation is laid through this planning grant, the project is expected to significantly strengthen the field of health sciences librarianship's commitment to diversity, equity and inclusion by contributing new cohorts of students from underrepresented backgrounds to the recruitment pool.

Project Results

Performance Measures (detailed in the Performance Measurement Plan)

This planning grant will incorporate **performance measures** such the data we collect from students in pre- and post-surveys and focus groups. Our effectiveness will be measured by how well we incorporate the feedback of our students and our Advisory Board into the curriculum in both year one and year two. Efficiency will be measured by how quickly we return the curriculum to the students, and their subsequent feedback on our efforts. The quality of our curriculum modules will be determined by how well the content suits our target group of high school students. The timeliness of this planning grant will be determined by how well we stick to our schedule of completion.

Key Deliverables (detailed in the Digital Products Plan)

We plan to make the five LIS course modules available on a publicly available website. Another deliverable is a final report that synthesizes findings of our pre- and post-surveys and focus groups that evaluate the student experience with the curriculum. Content will have a Creative Commons International License (CC BY-NC-ND 4.0) allowing for others to freely use and share the content with proper credit given to WCM and IMLS as the funding agency. These modules will not contain any personally identifiable information or culturally sensitive material.

Goals

Our goal is to eventually build a sustainable school-based Library Pathway Program from middle school to career for students of diverse and underrepresented backgrounds to learn about medical librarianship and be equipped to make career decisions to pursue this field of study. Additionally, students will learn how to combat misinformation and help to improve health literacy in their communities. This planning grant will serve as the foundation to provide a meaningful and engaging introduction to health sciences librarianship for students of diverse and underrepresented backgrounds as part of a high school curriculum both as a push-in concept and as an open educational resource toolkit developed to reach students throughout the country.

We believe this pilot will yield the evidence needed to implement this curriculum in school systems nationally. What we learn from the students in the pilot program will help us develop and refine the curriculum. The final curriculum will enable educators and information professionals across the United States to use it to introduce myriads of other students from underrepresented backgrounds to the field of health sciences librarianship and encourage them to consider a career in this important field. The project deliverables will be easily adapted to high school students anywhere in the country and can be used by healthcare or public health institutions among various ethnic or cultural communities. Each person who does pursue a career in health sciences librarianship is another potential medical library leader who will add diversity to the field and accomplish the ultimate goal of this planning grant. Each student who works through this curriculum will have a greater and more mature understanding of the constructs of LIS as it is applied in public health and healthcare today.

The benefits to society that would be realized by a federal investment in CHaMP include increasing the health literacy of high school students who engage with this curriculum. Through the students' activities that accompany each module

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they will serve as conduits to increase the health literacy of their communities. High school students will build a skill set to identify credible medical information and misinformation. Finally, the students will gain a broad awareness of health sciences careers generally, and of health sciences librarianship in particular.

Sustainability

The MIM Team has experience with building the sustainability of our programs. Through seeking diversified funding sources and forming strategic partnerships, MIM has demonstrated the ability to sustain and replicate several key initiatives. The National Library of Medicine funded development of the MIM school based and after school program (2008-2015) has grown by partnering with various school districts in NYC. From 2018-2021, MIM expanded its programs to a school in Harlem and two schools in the Bronx with the My Brother's Keeper Model School and Exemplary Programs Grant. In 2022, MIM was the recipient of a NYS 21st Century five-year grant to implement our program in Roosevelt, Long Island. Embedding content in the school curriculum and training key stakeholders to deliver the material ensures the largest audience with a reliable way to follow the students career path. We are currently in discussion with New York State education leaders who enthusiastically support this innovative project and the potential for replication per the attached letter of support.

The development of a toolkit will also sustain the project. User-friendly, engaging content with prerecorded lectures and added classroom activities will provide content for programs. The Friends of the National Library of Medicine (FNLN) supports the efforts of MIM to diversify the health care workforce. The toolkit certainly aligns with this mission. It is our hope that, if funded, the culmination toolkit of the pilot project will be posted on key websites such as the WCM, MIM, NNLM, and FNLN and its availability marketed through social media.

Conclusion

As a planning grant, the two-year timeframe, the investigators and key staff, the funding, and the five LIS modules we will develop are appropriate as described here to accomplish the goals of the project. MIM has established long-standing relationships with the schools' principals and staff which will expedite the program's implementation. The collective expertise of the investigators, advisory board and key staff are culturally symmetric with the student participants. They also have experience in youth development, health careers, and technology. The delivery of the program will be during the school day and will help us maximize our reach.

This two-year planning grant is intended to lay the strong foundation for creation of an innovative national Library Pathway Program from middle school to career. The project will launch at the high school level with five LIS modules and be sustained by development of an online toolkit of additional modules over time. Our future plans include applying for additional funding to establish (1) completion of the high school modules based on the 10 organ systems with library science projects; and (2) an age-appropriate program for middle school students in a similar manner to this grant. Through the middle school and high school work we would leverage relationships established with local library and information science schools to create training and internships for undergraduate students. This would be followed by graduate level training and student fellowship work to gain greater exposure to the work of health sciences librarianship. The last pillar of this program would be for entry level career professionals. If funded, this planning grant will help to establish a baseline of partnerships which will ensure the sustainability of the project.

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Table 1: Year 1 Phases, Outputs and Measures

Phase	Outputs and Measures	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24
I. Meeting and Planning	<ul style="list-style-type: none"> Advisory Board Convened Roles Reviewed / Work Planned Communication Channels established 												
II. Curriculum Development	<ul style="list-style-type: none"> Conduct focus groups to learn what students know and what they want to learn Draft Curriculum for five Library and Information Science (LIS) modules and LIS activities for 10 organ modules, incorporating what students want to learn Draft pre-post survey questions and focus group questions • Advisory Board review and feedback (two weeks for Advisory Board to review) 												
III. Pilot Curriculum	<ul style="list-style-type: none"> Bronx – Mount Saint Michael Academy Harlem – Thurgood Marshall Academy for Learning and Social Change Gather survey data before and after each module at both sites Advisory Board and investigators are curriculum instructors to provide faculty of color and role models of similar cultures to the students Conduct focus groups to learn if students liked curriculum or have changes 												
IV. Assessment and Refinement	<ul style="list-style-type: none"> Evaluate survey feedback Evaluate focus group feedback Identify and make curriculum changes based on student feedback, ensuring content is age-appropriate and engaging for high school students, and is what they want to learn Advisory Board review and feedback (two weeks for Advisory Board to review) 												
V. Dissemination	<ul style="list-style-type: none"> Present at MLA Train the Trainer Webinar Free webinar through MLA Caucuses 												

Table 2: Year 2 Phases, Outputs and Measures

Phase	Outputs and Measures	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24	Jan-25	Feb-25	Mar-25	Apr-25	May-25	Jun-25	Jul-25
IV. Assessment and Refinement	<ul style="list-style-type: none"> Evaluate survey feedback Evaluate focus group feedback Identify and make curriculum changes based on student feedback, ensuring content is age-appropriate and engaging for high school students, and is what they want to learn Advisory Board review and feedback (two weeks for Advisory Board to review) 												
V. Dissemination	<ul style="list-style-type: none"> Present at MLA Train the Trainer Webinar Free webinar through MLA Caucuses 												
VI. Revised Curriculum is Piloted in Second Year	<ul style="list-style-type: none"> Bronx – Mount Saint Michael Academy Harlem – Thurgood Marshall Academy for Learning and Social Change Gather survey data before and after each module at both sites • Advisory Board and investigators are curriculum instructors 												
VII. Assessment and Refinement	<ul style="list-style-type: none"> Evaluate survey feedback Conduct focus groups Identify and make curriculum changes based on student feedback, ensuring content is age-appropriate and engaging for high school students Advisory Board review and feedback (two weeks for Advisory Board to review) Final Report Drafted 												
VIII. Dissemination	<ul style="list-style-type: none"> Publicly Post Curriculum (Recorded LIS Modules) Publicly Post Final Report • Present at MLA Train the Trainer Webinar Free webinar through MLA Caucuses and the Friends of the National Library of Medicine Peer reviewed article on project Web Portal hosting five-lecture LIS curriculum, pre and post surveys, & final report 												

DIGITAL PRODUCT FORM

SECTION I: INTELLECTUAL PROPERTY RIGHTS AND PERMISSIONS

The web portal created for this project and all the materials hosted on the site will be freely available. The intellectual property belongs to Weill Cornell Medicine (WCM), which will also hold the copyright. We will assign digital products a Creative Commons Attribution - NonCommercial-NoDerivatives 4.0 International License (CC BY-NC-ND 4.0). This will allow others to freely use and share our work, with proper credit given to WCM. Content cannot be reused commercially or be changed in any way. This will allow for anyone to access and share this information without using it toward financial gain. We also do not allow any altering of the final product, in that the message/information therein may no longer be reliable. The final products hosted on the web portal will be owned by WCM. Anyone with internet access can access the material on the site for free. The final, publicly available products hosted on the web portal will not contain any private information, personally identifiable information, content requiring use permission, or culturally sensitive material.

SECTION II: DIGITAL CONTENT, RESOURCES, OR ASSETS

We will create a web portal (HTML) that hosts the five modules of the curriculum, the pre- and post-surveys (2, DOCX), 1 Certificate of Completion (DOCX), and 1 final report (MS Word). The five modules of the curriculum will include a yet-to-be-determined number of handouts and worksheets (DOCX), presentation slides (PPTX), and recordings of didactic lectures (MP4).

The web portal will be created on either the Wood Library's Drupal website or the Library's LibGuides instance. Curricular handouts and worksheets, surveys, certificate, and final report will be created in Microsoft Word, Google Docs, and/or Canva. Slide content will be created in Microsoft PowerPoint or Google Slides. Recordings and transcription of didactic lectures will be created using Zoom and hosted on either Panopto or YouTube.

We will strive to ensure the final published digital objects are accessible to people with disabilities by checking each object for compliance with current [Web Content Accessibility Guidelines \(WCAG\)](#). We will check each object using a standard accessibility checker for its filetype (e.g. SiteImprove or WAVE for web pages; the built-in accessibility checkers in Microsoft Office), and remediate any errors. Published video recordings will be close captioned.

We will evaluate and revise the content of the educational modules during the annual Assessment and Refinement phase of the project, as described in the Performance Measurement Plan.

The Wood Library website is hosted and managed by WCM Information Technology Services (ITS); the Wood Library LibGuides are hosted by the LibGuides vendor, Springshare, and managed by the Library webmaster. Both platforms allow for the daily backup, restoration, versioning, sharing, and permissioning of content which includes videos, documentation, PDFs,

images, and all digital assets. ITS and Springshare provide the technical documentation for their respective systems. Neither platform will involve any migration in the foreseeable future. No organizational funding will be required for purposes of this project, since the website and LibGuides are both separately funded by the Library.

Video recordings will be hosted on YouTube. All other digital products will be available indefinitely as hosted on the web portal. Backups of all files will be preserved on the WCM instance of the cloud service SharePoint, which is licensed for institution-wide use by WCM ITS. WCM's instance of SharePoint is hosted and managed by WCM Information Technology Services (ITS) and allows for the daily backup, restoration, versioning, sharing, and permission of digital assets hosted on it.

We will publish the final outputs (educational modules, final report, and survey instruments) on eCommons, Cornell University's institutional repository, and assign metadata using Dublin Core. In addition, if the web portal is hosted on LibGuides, all LibGuides pages are assigned Dublin Core metadata by default. We will assign relevant subject and descriptive metadata from the [ERIC thesaurus](#). Metadata will be preserved in the eCommons record, as well as LibGuides if that is selected for the web portal. The digital content will be published on the open web, which will enable indexing of metadata by web crawlers on search engines such as Google and Bing, and linked from other dissemination products (e.g. publications). The web portal and digital products will be public and freely accessible via any standard web browser to anyone with an internet connection across the world. The content will be mobile-device compatible. There are no special software tools needed in order to use the content. Previous examples of digital content we have created are available at:

- Wood Library website: <http://library.weill.cornell.edu>
- Wood Library LibGuides: <http://med.cornell.libguides.com>

SECTION III: SOFTWARE

No new software will be developed.

SECTION IV: RESEARCH DATA

Our project does not constitute human subjects research, as it is not a systematic investigation designed to develop or contribute to generalizable knowledge. As such, this project will not involve collection or generation of research data.

Weill Medical College of Cornell University High School Push-In Program to Encourage Pursuit of a Career in Library Science

Weill Cornell Medicine

Established in 1898, Weill Cornell Medicine (WCM), Cornell University's medical school located in New York City, is committed to excellence in research, teaching, patient care, and the advancement of the art and science of medicine, through the maintenance of scientific and clinical scholarship. Centered in the heart of the Upper East Side's scientific corridor, WCM also has locations in Queens, Brooklyn and Lower Manhattan. Our key partners, collaborators and affiliates include NewYork-Presbyterian, The Rockefeller University, Memorial Sloan Kettering Cancer Center, Hunter College/CUNY, and The Hospital for Special Surgery.

In 2021-2022, WCM saw 2.81 million annual patient encounters with 1,718 physicians at 166 sites throughout New York with an average 95.9% Press Ganey patient satisfaction score. Research by faculty and graduate students at Weill Cornell Medicine is collaborative, groundbreaking and always patient-focused. 2020-2021 saw 1,071 National Institutes of Health awards, 3 new start-up companies, 395 active U.S. patents, 912 active clinical trials, and 4,013 published peer-reviewed journal articles. Weill Cornell Medicine is among the nation's top- ranked medical and graduate schools, striving for excellence in its education of the world's future healthcare leaders, with 12,802 total faculty and staff, 24% of all medical students underrepresented in medicine and 69% receiving scholarships.

WCM began its commitment to diversity and inclusion in 1969, when it established strategic programs and policies to promote diversity in science and medicine. In 2022, WCM was awarded the Health Professions Higher Education Excellence in Diversity (HEED) Award by INSIGHT Into Diversity Magazine for the fifth year in a row.

Some 524,000 people live in the WCM/NYP area, which includes the Upper East Side of Manhattan, East Harlem, and northwest Queens. 25% of the WCM/NYP region is of Hispanic descent, with 11% African American and 11% Asian/Pacific Islander. 31% of the population in this region is foreign born. While English is the most common language, 22% report Spanish as their primary language. There are 125,000+ people on Medicaid in the WCM/NYP area, and 13% do not have health insurance.

Samuel J. Wood Library and the C.V. Starr Biomedical Information Center

Founded in 1959, the Samuel J. Wood Library and the C.V. Starr Biomedical Information Center offers 24/7 access to 160,000+ eBook titles, 40,000+ e-serials and 500+ databases. In addition, WCMC-Qatar, Memorial Sloan Kettering Cancer Center, The Hospital for Special Surgery, The Rockefeller University and Cornell University in Ithaca collaborate to share databases, journals, and resources, effectively expanding access to available information. The librarians are faculty who offer consultations on locating the best biomedical evidence in peer-reviewed sources and instruction in evidence-based medicine. The Library also includes the Myra Mahon Patient Resource Center, which is commissioned to serve the healthcare information needs of patients, families, and caregivers who visit WCM/NYP.

Mentoring in Medicine

Mentoring in Medicine (MIM) is a national 501 (c)(3) non-profit organization based in the Bronx that works with underprivileged students from elementary school through career. Its mission is to engage, educate and empower disadvantaged and low-income students to become health care and science professionals through academic enrichment, leadership development, civic engagement and mentoring programs. MIM also helps meet the nation's healthcare and science needs by diversifying the biomedical workplace. Since 2007, more than 62,000 students, parents and educators have participated in an MIM Program or Event.