The Mid-Atlantic Center for AIDS Research Consortium Scholars Program: A Multi-Institutional Approach to Mentoring the Next Generation of Underrepresented Scientists

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Background: There is an urgent need to intentionally develop and expand mentoring for junior faculty from underrepresented communities in the area of HIV research. Such a goal is increasingly recognized as essential across all scientific fields because profound disparities exist regarding which doctorally-prepared individuals ultimately end up entering research fields in academic settings. The purpose of this article is to describe a novel inter-Center for AIDS Research (CFAR) program designed to support underrepresented scientists in research to address the HIV epidemic in the Mid-Atlantic region.

Methods: Three CFARs in the Mid-Atlantic region (the District of Columbia, Johns Hopkins University CFAR, and University of Pennsylvania CFARs) developed a Scholars program designed for underrepresented minority scholars interested in studying the HIV epidemic in the region. The program provided resources for scholarship as well as cross-institutional mentoring and training.

Results: Scholars in the first cohort have been successful in implementing novel research that informs our understanding of the HIV epidemic in the region as well as increasing skills, publications, and grant submissions and funded applications. Lessons learned from the first cohort will inform future years of the MACC Scholars Program.

Conclusions: The MACC Scholars Program offers a model for other inter-CFAR collaborations wishing to find novel ways to support the next generation of scientists.

Key Words: mentoring, underrepresented scientists, HIV/AIDS, training, postdoctoral education

BACKGROUND

Numerous calls have been made to intentionally develop and expand mentoring for junior faculty from underrepresented communities1 in the area of HIV research. Such a goal is increasingly recognized as essential across all scientific fields because profound disparities are more widely recognized regarding which doctorally-prepared individuals ultimately end up entering academic settings (rather than corporate, governmental, or nongovernmental).3 This is underscored by the disproportionate number of underrepresented communities progressing to tenured full-professor status or leadership positions.4 To overcome profound racial, ethnic, and sex disparities found in places of higher learning5 and in grants (ie, the NIH),6 dedicated mentoring programs7 are urgently needed. Such mentoring incorporates didactic facets,8 support,9 and integration of scientists who may lack access to the training and scientific

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indoctrination that their counterparts in other races, ethnicities, and sexes may possess. Programs need to be designed and thoughtfully implemented to intentionally overcome barriers to junior faculty participating fully in the academic and research enterprise.

Several programs exist in the United States with the goal of providing dedicated mentoring and other resources to underrepresented scholars. The HIV Prevention Trials Network (HPTN) Scholars program is one excellent example of a program that for the past 10 years has provided mentorship and access to multisite clinical trials’ data for their awardees.9 HPTN Scholars work directly with a specific analytic question and HPTN study data set, and receive multidisciplinary mentoring support from investigators around the world, as well as resources for travel and salary coverage. The mentorship also provides access to group meetings, analytic support, and the ability to, as Scholars progress through the program, publish with study groups and mentor subsequent HPTN Scholars cohorts. The HIV Vaccine Trials Network (HVTN) has a similar program, the Research and Mentorship Program (RAMP) Scholar Awards, which in addition to mentorship found in the aforementioned HPTN Scholars Program, also offers a budget for independent research.10 Individual academic institutions often offer faculty-specific awards for seed money or access to professional development resources, which may or may not be specific to junior faculty seeking to overcome challenges in development of their academic careers. Many conferences have dedicated mentoring days created to mentor junior scientists by providing travel support to the conference, review of research proposals, and seminars toward professional development. An excellent example of this type of mentoring workshop is the Centers for AIDS Research (CFAR) Social and Behavioral Sciences Research Network (SBSRN). The SBSRN has been meeting annually since 2006. Each meeting begins with a mentoring day devoted to providing early career HIV investigators with expert guidance on the application and publication process and an opportunity to present their research concepts for critique by established investigators from across the CFAR network and NIH program Officers. The scientific meeting that follows includes a poster session highlighting mentees’ research and provides mentees with multiple opportunities for interactions and networking among established investigators and NIH officials.11 Finally, the UCSF Mentoring the Mentors Workshop has, since 2012, taught senior faculty new techniques for mentoring junior faculty.12 Although this program is not specific to underrepresented scientists, the techniques taught in that workshop are clearly applicable to their unique set of mentoring needs.

Since 1988, the NIH CFAR program has supported a network of institutions that strive to provide key administrative and shared research infrastructure that is needed to conduct high-quality, cutting-edge HIV research. In addition to support of shared research infrastructure and expertise, the CFAR programs foster collaboration of investigators within each CFAR. One of the many ways this is done is through pilot awards for early-stage investigators. The developmental award processes for early-stage investigators vary by CFAR but typically provide seed funds for pilot projects that generate data needed for subsequent R-series or K-series awards. A codified mentoring process is built into the developmental award programs with the intent to build the next generation of HIV researchers with successful NIH-funded portfolios. In addition to local opportunities, inter-CFAR collaborations are quite common across the CFAR network and encouraged as a further means of leveraging resources and enhancing impactful HIV research. One such inter-CFAR collaboration is the Mid-Atlantic CFAR Consortium (MACC) initiated in 2014. The MACC is a geographically based collaboration in the Mid-Atlantic region between the District of Columbia CFAR (DC), the Johns Hopkins University CFAR (JHU), and the University of Pennsylvania CFAR (UPenn). Together, these 3 CFAR grantees identified shared features of their local HIV epidemics, in particular among Black and Latinx populations. As the MACC expanded to work with a variety of research questions and populations, it became increasingly clear that there was inadequate diversity among the researchers at the table, and too few new scholars in the pipeline representing those communities. The potential for a shared mentorship program within the MACC was identified as a means of engaging more new underrepresented researchers to access CFAR resources.

THE MACC SCHOLARS PROGRAM

After discussion with CFARs participating in the MACC (ie, DC, JHU, and UPenn) and guidance from the participating Cores within each CFAR (Clinical and Population Sciences Core, Prevention Core, and Prevention Sciences and Community Engagement Core, respectively) and Community Advisory Boards of each CFAR, the MACC Scholars Program was launched in 2017. This program required a financial commitment from all 3 CFARs as well as devotion of mentoring services, administrative time, and time from leadership faculty at each CFAR. The goal of the MACC Scholars Program is to support the development of junior researchers with research interests in HIV among underrepresented populations in the Mid-Atlantic region as well as members of the underrepresented communities themselves, and encourage their development as HIV investigators. Like other mentoring programs, the goal of the MACC Scholars Program is to allow scholars to learn from mentors and from each other, collaborate on publications and grants, and conduct a funded pilot research study on a topic that embraces populations at risk for HIV in the Mid-Atlantic Region. Ideally, the MACC Scholars Program will prepare junior faculty at CFAR institutions or junior scientists at affiliated CFAR community-based organizations to write competitive CFAR developmental pilot proposals, K- or R-series, or join other mentorship programs such as postdoctoral T32s or other mentoring programs with additional funding.

THE FOUNDING COHORT

The first MACC Scholar cohort began in 2018 and includes junior faculty from all 3 CFARs, with each scholar
receiving mentorship from faculty located across the 3 CFARs. Types of mentoring and support are described in Table 1. To facilitate learning and mentorship, regular calls are held with discussion of research in progress. These are focused primarily on updates but also give a chance for mentees to obtain advice or guidance about their pilot study’s implementations. For example, overcoming IRB and data access challenges, methods for recruitment, or analytic concerns. Although local mentees at each CFAR are also available beyond the calls, the regular all-mentor call is useful to expand the multidisciplinary nature of the mentorship and study-specific guidance. Because there is shared geography across all the projects, mentors, and mentees, a unique opportunity exists to provide insight into specific challenges, particularly regarding recruitment because in the Mid-Atlantic region, many of the issues are the same. There is also time to assist mentees in applying for funding and drafting manuscripts. This program also supports all the scholars to attend mentoring day at the annual meeting of the SBSRN. This approach has also led to new collaborations across the mentees, as well as the sharing of resources, as the mentees are now working on developing grant proposals and writing manuscripts together. As a part of the program, time and resources are allotted to ensure that mentoring occurs mentor to mentee as well as mentor to mentee, as we hope that the first cohort of scholars will also serve as mentors to the next cohort.

## WEAKNESSES AND STRENGTHS

As a new program, the MACC Scholars Program shares typical challenges found in any new program. These include administrative responsibilities and logistics, which are of amplified complexity across 3 institutions. Obtaining applications for the program initially was overburdened by a two-phase process (a letter of intent followed by a full application) that was somewhat too involved and served as a barrier to applicants. Although 5 mentees began the program, only 4 continued past the first quarter. One mentee left the program due to challenges related to study recruitment and limited capacity. Future iterations of the MACC program will use a more streamlined process and try more active outreach to garner more interest in the program. The amount of funds available was perhaps also a barrier. With the intent as a pilot program to start, and as a precursor program to scholars who ultimately will ideally apply as early-stage investigators at their respective CFARs, only $15,000 was allocated per scholar. This amount necessarily could fund only minimal research activity and time devoted to the mentoring program. In the future, additional resources might make the program more appealing. Finally, finding times where busy mentees and busy faculty are able to all meet regularly is a banal yet very real challenge.

The program has several strengths and successes as well. Scholars have been able to secure additional research funding, have authored presentations at international conferences, peer-reviewed publications, and collaborative grant proposals, and 2 of the scholars have already achieved promotions at their current institutions; we anticipate more accomplishments are forthcoming. Among the initial cohort of scholars, NIH successes have included a CFAR developmental award, access to CFAR databases, appointment to a research faculty position, and an application for CFAR supplemental funding as part of the NIH Ending the HIV Epidemic initiative. Leveraging the expertise at 3 CFARs allowed scholars access to a rich pool of collaborators and support. Scholars are now working with mentors at other institutions, which opens up not only avenues for professional growth but also attempts to share with and instill in scholars comfort in moving beyond their home institutions. This may be useful in the future as they seek more senior faculty jobs, letters of recommendation, or building their own portfolios with multidisciplinary researchers.

| TABLE 1. Description of the MACC Scholars Program |
|-----------------------------------------------|
| Category                          | Item                                                       |
| Specific MACC scholar resources      | Funding for small pilot study                               |
|                                  | Resources for travel, conferences, and publication fees     |
|                                  | Some salary support                                         |
|                                  | Field trips to participating CFARs                          |
|                                  | Regular calls with local mentors                            |
|                                  | Regular calls with MACC mentors                             |
|                                  | Availability to attend events at all CFARs                  |
|                                  | Access to core services at all CFARs                        |
| Funded study-specific guidance      | IRB support                                                |
|                                  | Study implementation                                        |
|                                  | Analysis                                                   |
|                                  | Manuscript preparation                                      |
|                                  | Abstract review                                            |
| New study guidance                 | Grant proposal review                                       |
|                                  | Identification of optimal funding mechanisms                |
|                                  | Other training opportunities                                |

## FUTURE DIRECTIONS

Ideally, the MACC Scholars Program will continue to evolve in the years to come. It is unique in its approach to bringing together junior scientists as they are beginning their careers and engaging them not only in their home CFAR but within 3 CFARs in a shared geographical region with common characteristics of their HIV epidemics. The MACC Scholars Program will continue to track outcomes associated with the program and identify new methods to support the careers of the founding Scholars cohort, as well as all future cohorts. As the program becomes more codified over time, ideally, the program will add a new and geographically specific form of mentorship to innovative scientists as they are beginning their HIV research careers. Furthermore, the MACC Scholars Program offers a model for other inter-CFAR collaborations wishing to find novel ways to support the next generation of scientists.
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