Published in final edited form as:

Soc Work Health Care. 2009 October ; 48(7): 653–664. doi:10.1080/00981380902921641.

A Major Role for Social Work Input during Development of an Innovative Post-Baccalaureate Research Education Program in a Medical Center Environment

Terry Ann Krulwich, MS, PhD

Sharon and Frederick A. Klingenstein-Nathan G. Kase, M.D. Professor and Professor of Pharmacology & Systems Therapeutics at Mount Sinai School of Medicine, New York, NY

Abstract

The Post-Baccalaureate Research Education Program (PREP) at Mount Sinai School of Medicine targets participants from groups that are underrepresented in biomedical research careers. During its first 5 years, Mount Sinai PREP has sent over 70% of the PREP scholars to an excellent array of PhD or MD/PhD programs. Over 90% of those students are progressing well in their doctoral studies and report important contributions of PREP to their success. Social work and educational psychology principles inform strategies used to identify and address gaps or impediments that would otherwise diminish the potential of Mount Sinai PREP scholars to succeed in cutting-edge research careers.

Keywords

Research training; underrepresented minorities; stereotype threat; post-baccalaureate

Introduction

In 2000, the National Institutes of General Medical Sciences of the National Institutes of Health (NIH) issued an announcement of a new program within the Minority Opportunities in Research Division of the Institute (NIGMS PAR-00-139). The program, named Post-Baccalaureate Research Education Program (PREP), was targeted to students from minority groups that are underrepresented (URMs) in a broadly defined array of biomedical research fields. Specifically, the target population was URM students who had completed their bachelor's work recently and had shown aptitude for, and interest in, subsequent PhD work. The long-term goal was to entice and enable such students to successfully build careers that involve cutting-edge biomedical research. Mount Sinai PREP was among the first group of PREP efforts to be funded as part of this new initiative. The funding provides financial support for the PREP scholars during their programs, supports the tuition costs and the cost of travel to scientific meetings. Mount Sinai augments the funding from the NIH grant and makes student housing available to those PREP scholars who choose near-campus institutional housing.

Mount Sinai PREP goals, in consonance with the NIGMS Program mandate, have been to: (i) recruit cohorts of talented URM college graduates who are strongly considering PhD or MD/PhD work in biomedical sciences; (ii) provide the PREP scholars with a challenging and stimulating 1-2 year-long research experience coupled with course-work, individualized guidance and interventions that maximize the scholar's chance of entering excellent doctoral

programs; (iii) foster scholars' ability to succeed at a high level in those programs so that a significant number of them will go on to independent research careers; (iv) support and expand scholars' interests in serving their own communities through their sensitivity to research problems and other activities in which they can have an impact; (v) guide each PREP scholar throughout their program toward the decision, application, acceptance and choice of their next step so that future success in a biomedical career is optimized for each scholar.

What is the problem that led NIH to initiate PREP and that our Program and others seek to address? NIH first initiated research training programs targeting URMs in 1972 (NIH, 1993). In recent years, an average of about 15,000 trainees per year, at different career stages, has been supported. NIH began an assessment of NIH Minority Research Training in 1992, the final phase of which was completed in 2005 by a committee of the National Research Council (NRC) of the National Academies (NIH, 1993, 1997; NRC, 2005). The committee report noted that NIH minority research training programs have had a direct effect on increasing URM entry into the "biomedical workforce". However, while there have also been "moderate improvements in recent years in the number and proportion of Ph.D. degrees earned by underrepresented minorities, there has not been a marked increase in the number of minorities who have been successful in securing mainstream NIH research grants not specifically targeted for minorities" (NRC, 2005), i.e. in establishing competitive independent research careers. These observations are echoed by the 2006 report of the National Science Board of the National Science Foundation (NSB, 2006) and are widely recognized by active biomedical researchers and their professional societies (Jackson, 2002).

It is also widely agreed that educational gaps are a large factor in undermining the attraction and retention of potentially qualified URM students in a biomedical research career path. The NRC and numerous other reports endorse a broad range interventions at different developmental stages, including: changes in pedagogy in K-12; outreach to K-12 science teachers in schools with high student diversity; continued refinement of best practices and pedagogy in URM-targeted undergraduate programs; bridging and PREP-type programs that prepare students for doctoral programs; and changes in the environment of the research training settings that enhance the social-academic integration of URM students (BEST, 2004; George et al, 2001; Matyas, 1994; NRC, 2005a; Sax, 1994; Woodrow Wilson Fdn, 2005). In spite of an increase in URM enrollment in pre-doctoral research training programs (NRC, 2005; NSF, 2004), these numbers are eroded by the significantly higher attrition of URM students than other students (Denecke & Frasier, 2005; NRC, 2005a; NSF, 1997, 2004) and are further eroded because those who complete doctoral training continue to "leak from the pipeline" that leads from the PhD degree to leadership of a funded, independent research program (Kuh, 2001; NRC, 2005; NSF, 2004).

There follows an early progress report from Mount Sinai PREP, summarizing the experience with 34 PREP scholars over a 5-year period, with an emphasis on how the Program has been enhanced by the growth in our understanding of: (i) the gaps and impediments that remain among successful URM college graduates who are contemplating careers in biomedical sciences; and (ii) the importance of reflective input from the social work and educational psychology perspectives in developing strategies to address those gaps and impediments.

Development of Mount Sinai PREP

Program Design

PREP scholars pursue a 1 or 2 year program, depending upon their needs and goals. Most of a Mount Sinai PREP scholar's time is spent in mentored research in an active research laboratory. They choose the laboratory after a guided process of orientation to the Mount Sinai research faculty. The PREP Director and PREP scholar then refine the list together and the

PREP Director alerts the listed faculty so that they are reminded about the program structure and have some background information about the PREP scholar who will contact them. Conversations between the PREP scholar and faculty members then take place and usually lead to a good match within a few weeks of Orientation. PREP scholars are expected to integrate fully into the life and work of the laboratory, including hands-on participation in a project, exposure to the primary literature and attendance/presentations at lab meetings and journal clubs. Only four of the total thirty-four PREP scholars to date have chosen to switch to a new research mentor during their program. In addition to their research work, PREP scholars take a required research ethics course, Responsible Conduct of Research (RCR), with entering PhD and MD/PhD students. All PREP scholars also engage in monthly PREP works-in-progress/seminars that enhance their presentation skills. These meetings sometimes feature guests who offer models of career development.

PREP scholars are offered the opportunity to participate in the biochemistry section of the Summer Enrichment Program (SEP) that has been offered for decades at Mount Sinai for interested students in diverse programs of the Medical and Graduate Schools. Participation is strongly encouraged for PREP scholars whose undergraduate science grades were not consistently outstanding. SEP provides review and re-enforcement of the underpinning for the fall Molecules and Cells (Medical School course) or Core I: Biochemistry and Molecular Biology (PhD course). Most PREP scholars pursue one or more graduate level courses from either the PhD or MD course curricula, although the course-taking patterns are highly individualized. Some PREP scholars take no formal courses, focusing only on research. Others are not yet ready for rigorous doctoral level courses. These PREP scholars pursue special tutorial work, English as a Second Language, or courses that address particular analytical skills to better prepare them to succeed for later doctoral work. All PREP scholars are encouraged to attend a "Dean's Lecture" series that exposes them to research presentations for a general scientific audience that are given by outstanding Mount Sinai and outside scientists. They are also strongly encouraged to attend Grand Rounds and participate in out-reach projects sponsored by Mount Sinai's Center for Multicultural and Community Affairs (CMCA); many PREP scholars participate in community outreach through these or other programs in their own neighborhoods. Most PREP scholars engage in preparation for standardized tests that will be needed for their applications for graduate work, MCAT and/or GRE examinations.

The PREP leadership consists of a Program Director and a Steering Committee of diverse scientists and educators, including the directors of the CMCA and of the SEP. Each PREP scholar interacts regularly with the Program Director, meets occasionally for luncheons or celebrations with the whole Steering group, and also has an advisor from the Steering Committee who adds to the individual input provided by the Program Director and the scholar's research research mentor.

The PREP Scholar Cohorts

A total of 34 PREP scholars have entered the Mount Sinai Program in summers 2001-2006. PREP scholars are chosen after a process that involves submission of an application, transcripts and references, followed by a day-long interview at Mount Sinai. The Program sets a high priority on the motivation and apparent potential for later research training at the doctoral level. The size of the entering groups has varied from 4 (in the first two years) to the most recent entering group of 8. Overall, there have been: 79% women and 21% men; 59% African-American, 35% Hispanic and 6% Pacific Islander. They come from diverse undergraduate schools (TABLE 1; italicized numbers are numbers of scholars from each institution) where just over half of them were in NIH-supported undergraduate programs for URM students. About half of the PREP scholars have pursued, or are pursuing, a 2-year program.

Social Work Input

During the first year of Mount Sinai PREP, Program leadership was concerned by the extent to which entering PREP scholars were daunted by the medical center setting. They often felt alienated when taking classes with a larger group of medical or doctoral students and found it difficult to find points of entry into activities with other student groups. Even more striking was their greater sensitivity than other new researchers-in-training to small failures in mastering concepts or techniques in the lab. Moreover, they were reluctant to approach either their research mentor or Program Director as a supportive ally. This first PREP group did not participate in the Summer Enrichment Program, which later ameliorated some of the initial reaction, and their start in PREP was complicated by the effects of September 11, 2001 on all programs in New York City. Nonetheless, the “entry problem” was pronounced and the Program Director sought expert advice. The assistance came from Myrna Lewis, Ph.D., a social worker, psychotherapist and teacher who had worked with groups of women trainees and women faculty in addition to making major contributions in areas of gerontology at Mount Sinai and beyond (Lewis & Butler, 1974; Amer. Soc. Aging, 2005). During that particularly challenging initial PREP year and throughout the following two years, Dr. Lewis' work with PREP leadership and PREP scholars played a major role in the success of the effort. At off-campus pizza dinners with the first group of PREP scholars, she gained their trust and provided them with insights into the new environment that they had entered. She became familiar with the individual goals and concerns of each scholar, giving them a “safe haven” in which these concerns could be expressed. With that and subsequent groups, she made herself available for periodic brain-storming support sessions with the full PREP group as well as for individual meetings with PREP scholars who sought her advice and help. Feedback to the Program Director about individual PREP scholars only occurred with permission of the scholar in those few situations in which Dr. Lewis found a scholar in need of a referral for educational evaluation or psychological counseling. On the other hand, Dr. Lewis provided regular and critical advice to the Program Director on program development that quickly enhanced the community of trust between PREP scholars and leadership and the ease with which scholars interacted with their research mentors.

During the first three years, Dr. Lewis' work with Mount Sinai PREP led to mechanisms of ongoing Program evaluation and to the involvement of the PREP scholars in developing the Program. PREP scholar involvement was spear-headed by a meeting in year-3 in which Dr. Lewis chaired a joint session of all the PREP scholars, the PREP Director, Steering Committee, several faculty research mentors and the Graduate School administrator who worked most directly with PREP scholars. This meeting resulted in an ongoing series of efforts to ensure development of PREP itself into a community that provides strong support of each scholar as well as the greater integration of PREP scholars into the diverse student communities at Mount Sinai. The meeting became a prototype of interactive feedback sessions that were augmented by questionnaires, exit interviews and other opportunities to elicit constructive criticism and evaluation of the program. Subsequently this was extended to an on-line feed-back site for PREP alumni and regular email solicitations of alumni feedback and news. By the time of Dr. Lewis' untimely death, the larger critical mass of PREP scholars, the greater insights of the PREP Director and Steering group and the recruitment of additional advisors from the social work and educational psychology community at Mount Sinai enabled the Program to continue to develop increasingly successful and early intervention strategies with the PREP group as a whole and the needs of individual scholars.

Mount Sinai PREP Outcomes at 5 Years

Five Year Summary of Accomplishments

During the first 5 years, there has been no attrition from PREP itself. The research efforts during their PREP years have earned co-authorship for PREP scholars on over a dozen manuscripts that are published (10) or submitted (3). Several PREP scholars have won travel awards to present their work at scientific meetings.

For the 2006/2007 year, there are 4 second year and 8 first year PREP scholars. Thus 22 PREP scholars have completed their PREP experience. Of these 22 PREP scholars, 14 are in PhD programs and 2 are in MD/PhD programs, i.e. 73% have entered doctoral work. Percentages in this range are likely to hold or rise. Of the 4 current PREP scholars who are in their second program year, two are applying to PhD programs and one is applying to MD/PhD programs and already holds an acceptance. TABLE 2 shows the programs entered by the first 22 scholars to complete Mount Sinai's PREP (italicized numbers are numbers of individuals in each program). It should be noted, that a major feature of Mount Sinai PREP is to help every PREP scholar to identify the post-PREP path that is optimal *vis a vis* their current goals and skill set. Although the Program's mandate to promote development of future biomedical researchers is an overall priority, it does not trump a commitment to fully assist those PREP scholars who find that such a career path is not the object of their greatest interest and/or talent. Each scholar is engaged in a mentoring dialogue throughout the program that promotes realistic planning, consideration of alternate strategies or modification of goals to achieve the best individual outcome in application for post-PREP study (see TABLE 2).

The likelihood that Mount Sinai PREP will indeed contribute to the cutting-edge biomedical research cadre of the future is suggested by the early performance measures of the Mount Sinai PREP scholars who have entered PhD and MD/PhD training. This cohort has been tracked for 1-4 years thus far. The two MD/PhD students are progressing excellently through the program at Mount Sinai, have completed the core curriculum, chosen excellent research laboratories and have progressed through all progress points to-date in a timely manner. Now in their third year, they have also served as tutors and role models to others, and one of them has co-authored two research papers in journals with 2004 impact factors of 5.4 and 10.5. The 13 PREP scholars who entered PhD programs at least a full year ago are also progressing well. Only one of these students has left PhD training (and is teaching high school science at a school for under-served students), i.e. early aggregate retention is 92% for students entering in the falls of 2002-5. This retention rate is on track to equal, and perhaps exceed, that of the retention efficacy of 80% reported by the successful three-regional effort of the "Compact for Faculty Diversity" (Dimaano & Pepion, 2005). There are additional indications of excellence that go beyond the progress statistics of Mount Sinai PREP alumni through their programs. These include high impact publications and capture of independent fellowship support.

A final outcome relates to the regular contact that Mount Sinai PREP enjoys with most PREP alumni and the results of exit questionnaires and alumni questionnaires that reflect the view that the PREP period almost always: (i) enabled them to successfully apply to an appropriate program in which they are now enjoying success; and (ii) plays an important role in their subsequent success within their new programs.

Lessons Learned and Implications for Program Strategies Initiated

Many of the major lessons learned by Mount Sinai PREP leadership during the first 5 years of the Program have been discussed in the education or psychology literature or in reports of various evaluative panels. It is important for these lessons to be integrated into a strategic plan for that better informs individual intervention programs that seek to increase URM participation

in the biomedical research enterprise. A few programs have been recognized for making major strides in such integration with respect to mathematics and science in general, e.g. the Merit Workshop Program that grew out of the “Treisman Model” (Treisman, 1992) and the Meyerhoff Scholars Program at the University of Maryland, Baltimore County (UMBC) (Maton, Hrabowski & Schmitt, 2000; Summers & Hrabowski, 2006). Intrinsic to these successful programs is an “emphasis on student’s strengths” (Gillman, 1990), a shift in focus from remediation to pursuit of high achievable aspirations. This difference in emphasis, which is also intrinsic to Mount Sinai PREP, enhances the pursuit of excellence and makes it easier to effectively remediate where needed.

Among the impediments that Mount Sinai PREP now recognizes as a general problem for PREP scholars is a consistent set of problems observed as they enter the environment of a major academic medical center to start their Program. Mount Sinai PREP leadership considers this set of problems to be a reaction to “stereotype threat”, i.e. the effects of anticipated and real bias in the environment. Recent studies have carefully documented the pernicious, undermining effects of stereotype threat on performance and self-confidence of minority students at all levels (Cohen et al., 2006; Major & O’Brien, 2005; Steele & Aronson, 1995). The first encounter with a major medical center for a URM student is highly likely to elicit this sort of response, even when the student has been in an elite “majority” undergraduate environment, since undergraduate settings have a significantly different ambience. The environment of Mount Sinai PREP offers an opportunity to immunize our PREP scholars against the challenge they will face upon entry into a biomedical PhD or MD/PhD program, by supporting their self-confidence as they build the skills to socially navigate a biomedical research environment. This skill-building is fostered by employing appropriately adapted strategies of self-validation that were successfully used in recent studies of stereotype threat (Cohen et al., 2006).

Another element has been noted by others as a special contributor to success of URM students embarking on a career in biomedical sciences. That is, retention of their energetic engagement depends upon their ability to envision how the results of their work will ultimately relate to real problems of their own communities. While this concern is common to all students, Mount Sinai PREP experience re-enforces the observation that it is more so for the URM cohort. Our Program is therefore increasingly mindful of the principle described as “multicontextuality” by Ibarra (2001) and enunciated by The Woodrow Wilson National Fellowship Foundation (2005): “In addressing the urgent need for a more diverse doctoral population, a more socially responsive Ph.D. can serve as a worthy goad to attract a greater number of students of color. Study after study shows that minority students and faculty have a stronger desire to bring their learning into the community than their non-minority peers” (Woodrow Wilson Foundation, 2005). We also note that the mode of bringing learning to their communities can mean teaching or public outreach as a component of a basic research career. It could also mean pursuit of a particular type of research that has special relevance to minority populations.

Another lesson that has been forcefully brought home is that there are disadvantages that still impede the potential success of many PREP scholars even though they have been successful in challenging science majors in fine undergraduate institutions. One kind of disparity is reflected by the following irony. Part of the PREP mandate is to build upon the intrinsic interest of PREP scholars in health disparities and health care disparities among URM populations. One of our observations these past 5 years, however, is that the PREP scholars have much to teach us about such disparities since a disproportionate number of these young adults enter with under-diagnosed or sub-optimally managed health problems of a chronic nature (e.g. asthma, irritable bowel syndrome, hypertension). As a result, we now raise this potential problem early and sensitively so that PREP scholars who could benefit from the expertise that resides within our own institution are enabled to do so as soon as possible. Similarly, we find that learning or study-skill issues plague some incoming PREP scholars and have never been

flagged in their earlier programs. Again, we urge them to self-identify during orientation sessions and also are alert to early indications of such individual needs as new groups of scholars start their PREP work. The Institution has been able to offer substantial help in these areas through educational and neuro-psychology evaluations and subsequent interventions.

Finally, the early experience with Mount Sinai PREP suggests that URM students are not optimally served by earlier programs that provide multiple, short research experiences that do not demand a consistent, conceptually challenge growth in analytical and technical skills over a significant period of time. Consistent with a broader problem that was noted by the NRC (2005) report, some PREP scholars whose applications list several exciting-looking research projects, were actually given no hands-on role in those projects let alone provided with guided mentoring of their analytical skills in the context of the project. In fact, among the most successful Mount Sinai PREP scholars to date are some collegiate athletes or musicians who learned to meet challenges towards ever greater mastery, learned to take criticism and to learn from failures but had little or no time for research. When their interest in research led them to find the time for an extensive research effort in PREP, the drive and the training skills they transferred from athletics or work with an orchestral/band group supported their research training outstandingly. Programs such as Mount Sinai PREP may enable us to study the importance of research experiences of long-duration for future development of a career in biomedical research and the whether participation in activities such as competitive athletics also foster qualities that promote successful outcomes of subsequent research training.

Acknowledgments

The development of Mount Sinai Post-Baccalaureate Research Education Program (PREP) described in this article was supported in part by grant R25-GM64118 from the National Institute of General Medical Sciences (NIGMS) of the National Institutes of Health. Observations made during the first five years of Mount Sinai PREP form the basis for the research project R01-GM081221 from NIGMS. This report is dedicated to the memory of Myrna Lewis whose wise advice to PREP leadership and insightful work with PREP scholars account for a significant part of the Program's success.

References

- Amer. Soc. Aging. Awards Program. 2006. www.asaging.org/awards/awards05
- BEST. A Bridge for All: Higher Education Design Principles to Broaden Participation in Science Technology, Engineering and Mathematics. BEST (Building Engineering and Science Talent). 2004. www.bestworkforce.org
- Cohen GL, Garcia J, Apfel N, Master A. Reducing the racial achievement gap: a social-psychological intervention. *Science* 2006;313:1307–1310. [PubMed: 16946074]
- Denecke DD, Frasier HS. Ph.D. completion project: preliminary results from baseline data. *CGS Communicator* 2005;38:1–3. 7–8.
- Dimaano C, Pepion K. Meeting Report: Building Bridges for Diverse Professors of Tomorrow. *Cell Biol Educ* 2005;4 published. 10.1187/cbe.04-11-0054
- George, YS.; Neale, DS.; Van Horne, V.; Malcom, SM. Scientists and engineers for the New Millennium: Renewing Human Resources, The Commission on Professional in Science and Technology. AAAS; Washington, D.C.: 2001. In pursuit of a diverse science, technology, engineering, and mathematics (STEM) workforce: recommended research priorities to enhance participation by underrepresented minorities.
- Gillman L. Teaching programs that work. *Focus: the Newsletter of the Mathematical Association of America* 1990;10:7–10.
- Ibarra, RA. Beyond Affirmative Action: Reframing the Context of Higher Education. University of Wisconsin Press; Madison, WI: 2001.
- Jackson, SA. The quiet crisis: falling short in producing American scientific and technical talent. 2002. www.rpi.edu/homepage/quietcrisis/best.html

- Kuh C. Reflecting America? Immigrants, minorities and women in the S&T workforce. Research News, Alliance for Graduate Education and the Professoriate (AGEP) 2001;3:1–4.
- Lewis MI, Butler RN. Life-review therapy. Putting memories to work in individual and group psychotherapy. *Geriatrics* 1974;29:165–173. [PubMed: 4417455]
- Major B, O'Brien LT. The social psychology of stigma. *Annu Rev Psychol* 2005;56:393–421. [PubMed: 15709941]
- Maton KI, Hrabowski FA III, Schmitt CL. African American college students excelling in the sciences: college and postcollege outcomes in the Meyerhoff Scholars Program. *J Res Sci Teaching* 2000;37:629–654.
- Matyas, ML. Investing in human potential: policies and programs in higher education. In: Pearson, W., Jr; Fechter, A., editors. *Who will do science?.* The Johns Hopkins Press; Baltimore, MD: 1994. p. 20-42.
- NIGMS. PAR-00-139, NIGMS' Post-Baccalaureate Research Education Program (PREP). 2000. www.nigms.nih.gov
- NIH. Assessment of NIH Minority Research/Training Programs: Phase 1. Office of Research on Minority Health, NIH. Bethesda, MD: US Dept. Health and Human Services; 1993.
- NIH. Assessment of NIH Minority Research/Training Programs: Phase 2. Office of Research on Minority Health, NIH. Bethesda, MD: US Dept. Health and Human Services; 1997.
- NRC. Assessment of NIH Minority Research and Training Programs Phase 3. National Academy Press; Washington, D.C.: 2005. National Research Council Committee for the Assessment of NIH Minority Research Training Programs.
- NRC. National Research Council. National Academy Press; Washington, D.C.: 2005a. *Advancing the nation's health needs.*
- NSB. Science and Engineering Indicators 2006. Two volumes. Arlington, VA: National Science Foundation; 2006. volume 1, NSB 06-01; volume 2, NSB 06-01A
- NSF. Workshop on Graduate Student Attrition. National Science Foundation; 1997. www.nsf.gov/statistics/nsf98322/
- NSF. Graduate students and postdoctorates in science and engineering: Fall 2004. Arlington, VA: 2004. *Diversification of Science Resources Statistics*, NSF 06-325, Project Officer, Julia D. Oliver
- Sax LJ. Retaining tomorrow's scientists: exploring factors that keep male and female college students interested in science careers. *J Women and Minorities in Sci and Eng* 1994;1:45–62.
- Steele CM, Aronson J. Stereotype threat and the intellectual test performance of African-Americans. *J Personality and Social Psych* 1995;69:797–811.
- Summers MF, Hrabowski FA III. Preparing minority scientists and engineers. *Science* 2006;311:1870–1871. [PubMed: 16574853]
- Treisman PM. Studying students studying calculus: a look at the lives of minority mathematics students in college. *College Mathematics Journal* 1992;23:362–372.
- Woodrow Wilson Fdn.. The Woodrow Wilson National Fellowship Foundation; 2005. *Diversity & the Ph.D. A review of efforts to broaden race & ethnicity in U.S. doctoral education.* www.woodrow.org/responsivephd/diversityphd.php

TABLE 1**Undergraduate Schools Attended by Mount Sinai PREP Scholars**

<u>I Colleges of the City University of New York</u>	
Brooklyn College	5
City College of New York	1
Hunter College	4
<u>II Historically Black Colleges and Universities (HBCU)</u>	
Spelman College	1
University of Arkansas, Pine Bluff	1
Xavier College	1
<u>III Other Colleges and Universities</u>	
Arizona State University (West campus)	1 (community college first)
Brown University	1
Cornell University	3 (1 community college first)
Duke University	1
Hahneman College Campus, Drexel	1
Haverford College	1
Johns Hopkins University	1
Long Island University	1
New York University	1
Old Dominion University	1
St. Johns (Queens)	1
SUNY Stony Brook	1
Syracuse University	1
University of California Los Angeles	1
University of Puerto Rico (Mayaguez)	2
University of Puerto Rico (Ponce)	1
University of Virginia	1
Wesleyan College	1

TABLE 2**Programs Entered or Applied for by Mount Sinai PREP Scholars**

PhD programs entered by Mount Sinai PREP “alumni”: 14 students, 12 programs¹		
Mount Sinai School of Medicine		3
Albert Einstein College of Medicine		1
Emory Medical School		1
New York University School of Medicine		1
University of California San Francisco School of Medicine		1
University of Colorado Health Science Center School of Medicine		1
University of London (UK)		1
University of Pennsylvania School of Medicine		1
University of Pittsburgh School of Medicine		1
University of Puerto Rico		1
University of Texas Medical Branch/Medical School at Galveston		1
University of Virginia School of Medicine		1
MD/PhD programs entered by Mount Sinai PREP “alumni”: 2 students, 1 program¹		
Mount Sinai School of Medicine		2
Other current programs or application plans for this year: 6 students		
	<u>Degree</u>	
Fordham University	MS	1 ²
Jefferson Medical College of Thos. Jefferson U.	MS	1 ²
Harvard Medical School	MD	1
New York School of Osteopathy	DO	1
UMDNJ Nursing program	BS/MS	1
Applicant to MPH programs		1

¹ All the scholars in these groups had multiple acceptances to PhD or MD/PhD programs, except for one scholar who applied to one program.

² These two students have the option of continuing for a PhD.