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Need for Advancing Underrepresented Minorities in the Health Sciences and Medicine

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Abstract

This manuscript introduces the abstracts from the Stanford Coordinating Center.

KEYWORDS: Minority health; health disparities; mentoring; adolescent development; summer science programs; internships

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Minority, low income and first-generation high school students are underrepresented in higher education, and in particular science education and science-related careers. Underrepresented minorities (URMs) earned only 13.1% of all science, technology, engineering and math research doctorates in 2010 (Salto et al., 2014). African-American, Hispanic, and Native American students graduate from high school and attend college at significantly lower rates than white and Asian youth. Further, URMs, low income, and first-generation college students are more likely than white students to attend a community college, and less likely to attend a traditional 4-year college or university, transfer to a 4-year university (Collegeboard, 2008; Saguil & Kellerman, 2014), graduate from college, obtain a college degree in science, and pursue science-related careers, compared to white or Asian youth (Chang, Cerna, Han & Saenz, 2008; Saguil & Kellerman, 2014).

Further, while approximately 30% of college students in the United States intend on majoring in a science-, technology-, engineering-, or mathematics-related field (Hurtado, Chang et al. 2010), the number of college graduates who then continue on to graduate studies in science is significantly less, especially for URMs and low income students. While interest in science among underrepresented minority students matches or exceeds that of whites (Gandara and Maxwell-Jolly 2009; Nickens and Ready 1994; National Science Board 2010), minorities typically do not receive the education necessary to ensure their success (Hurtado, Han, Saenz, Espinosa, Cabrera & Cerna, 2007; Barlow and Villarejo 2004).

Similar shortages of URMs are found in the medical workforce. The Association of American Medical Colleges has predicted a shortage of 91,500 active patient care physicians in the United States by 2020 (Sanchez, Poll-Hunter, & Acosta, 2015). In *Missing Persons: Minorities in the Health Professions*, the Sullivan Commission (2004) stated, "While African Americans, Hispanics, and Native Americans, as a group, constitute nearly 25% of the U.S. population, these three groups account for less than 9% of the nurses, 6% of physicians and only 5% of dentists" (p. 48). Between 2002 and 2011, the proportion of Latino applicants to medical school grew

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minimally from 7.3% to 7.9%, and the proportion of accepted applicants increased only slightly, from 6.8% to 8.4% (Sanchez et al., 2015). In 2013, Latinos represented only 3.7% of faculty in MD-granting institutions; further, Latinos represented only 3.4% of full professors and only 1.4% of medical school deans (Sanchez et al, 2015). Increasing the number of URMs in the medical sciences is critical, especially given that underrepresented minority health care providers are more likely than non-underrepresented minority providers to care for underrepresented populations (IOM, 2003, 2004). Studies have also shown that the health and health care of underrepresented minorities is improved when providers of similar ethnic and racial backgrounds provide the care (Brown, DeCorse-Johnson, Irving-Ray, & Wu, 2005).

Given the growing population of underrepresented minorities in the United States, training and maintaining a diverse science-focused workforce is essential to U.S. competitiveness in a global marketplace (U.S. Department of Education, 2006). As such, our ultimate goal is to increase the number of underrepresented minority, low income, and first generation high school students who are committed to, exposed to, and prepared for research careers in the sciences and medicine. As such, programs are needed that promote and nurture science literacy, aptitude, and interest by exposing science to talented and motivated URM students in an exciting, committed, supportive environment through mentorship and scholarly pursuit. Providing opportunities for students to enter and persist in the science pipeline will not only increase the number of students from diverse backgrounds entering biomedical and health sciences but will increase the number of diverse scientists overall.

A goal of the NIDDK Short-Term Education Program for Underrepresented Persons (STEP-UP) is to support the next generation of scientists, and to address the need for parity and diversity in the sciences. STEP-UP promotes and nurtures science literacy, aptitude, and interest by exposing science to talented and motivated underrepresented high school students in an exciting, committed, supportive environment through mentorship and scholarly pursuit. This relies on partnering with universities and research centers across the country which along with research faculty, graduate and medical students, and postdoctoral fellows support high school students during an 8-week summer research internship. The students gain professional experience in the scientific process including basic, behavioral, and public health sciences. The mentors are committed to serving underrepresented youth. Many of the mentors are themselves from minority backgrounds, thereby serving as role models as well.

We at the STEP-UP Stanford University Coordinating Center, our mentors, teachers, and partners form a nationwide community that is building opportunities for research, education, and careers for young people of all backgrounds.

Bonnie Halpern-Felsher, Ph.D., FSAHM, has been the Principal Investigator/Program Director for the Stanford University coordinating center since 2007. Dr. Halpern-Felsher is a developmental psychologist whose research focuses on cognitive, psychosocial and environmental factors involved in adolescents' and young adults' health-related decision-making, perceptions of risk and vulnerability, health communication, and risk behavior. Her current NIH- and foundation-funded research largely focuses on understanding and preventing adolescent and young adult tobacco and marijuana use. Sheila McLaughlin, MFA, has been the Project Coordinator since 2010. Ms. McLaughlin holds a firm commitment to assist youth during their high school years to achieve their educational and career goals.

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Both Dr. Halpern-Felsher and Ms. McLaughlin are the first in their families to attend college, lending force to their individual commitment to the overall goal of the STEP-UP Program to increase the number of underrepresented minority and disadvantaged students who are committed to and supported in obtaining a career in biomedical, behavioral, clinical, or social science research.

We are grateful to the other coordinating centers, to our NIH partners, to the NIH funding (NIH/NIDDK grant number: R25DK078382), and to the mentors and students who give so much to this program.

Keywords: Minority health; health disparities; mentoring; adolescent development; summer science programs; internships

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