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## **Preparing Underrepresented High School Students to Increase Diversity in the Research and Health Professions**

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### **INTRODUCTION**

*"It's gratifying to see what can happen when vision is matched with superb leadership and resources."* - Dr. John Ruffin, former director of the National Center on Minority Health and Health Disparities

The first NIDDK summer high school research program was the Howard University Minority High School Summer Research Program which served 26 high school students a year in 13 states. In 2001, this program was relocated and the Coordinating Center at Charles R. Drew University of Medicine and Science (CDU) was established as the NIH/NIDDK/DREW National High School Student Summer Research Apprentices Program (NHSSRAP) under the outstanding leadership of Dr. Keith Norris and Mrs. Emma Taylor, Program Coordinator. The mission of the program was to provide underrepresented minority high school students with exposure to scientific research. This was one of the first biomedical pipeline programs aimed at increasing the number of underrepresented and disadvantaged students in the biomedical science workforce. It provides underrepresented mentorship and academics in the sciences with researchers. The program was expanded to reach 75 students a year from around the country including Alaska, Hawaii, and Puerto Rico.

In 2003, the Sullivan Commission on Diversity in the Healthcare Workforce convened to address the insufficiency of minorities in health professions that exist despite our country's increasing diversity (Keith C. Norris, Winter 2009) In 2004, the Sullivan Commission Report recommended that there be a partnership with public school systems to provide support for underrepresented minority students which would provide counseling, mentoring, and test taking

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skills in an effort to raise awareness of health profession career options and opportunities (Williams, 2008). The NHSSSRAP at CDU had been providing the selected high school students from across the United States and its territories with this opportunity by matching selected students with mentors in research centers in their home states for summer research experiences since 2001. The students in each cohort receives initial on-line research training from NIH/NIDDK and additional research and laboratory trainings as mandated by the specific research institution where they will be trained during the summer experience.

In 2007, the NHSSSRAP transitioned to further diversify the program and was renamed the Short -Term Education Program for Underrepresented Persons (STEP-UP Program). The NIH/NIDDK research education grant allowed two additional Coordinating Centers to participate as program partners. Two new sites were funded: University of Hawaii, Manoa and University of California San Francisco (UCSF). The goals of the program remained the same with the focus on training in the mission areas of NIDDK. The addition of the University of Hawaii, Manoa allowed for a greater presence of high school research experiences in Hawaii and the Pacific Islands such as Guam, Saipan and America Somoa. The addition of UCSF allowed the provision of two sites to coordinate and further expand the program on the Mainland, Alaska, and Puerto Rico. The diversity of the program continued to improve with these additional coordinating centers and helped to decrease the burden of increased numbers of qualified students for which CDU Coordinating Center would be responsible. From 2001-2006, the CDU Coordinating Center assumed the responsibility for 165 nationally qualified students. Since 2007, it has had 250 students assigned to its center for a total of 415 students. In 2012, a fourth coordinating center was added at University of Nevada, Las Vegas to focus on engaging more Native American students and the assume the coordination of Native Alaskan and Puerto Rican students. This addition has left UCSF and CDU serving the remaining students across the country (the lower 48 states). In 2013, UCSF Principal Investigator (PI) and Program Coordinator moved the STEP-UP grant to Stanford University.

Christopher Reid, M.D., PhD is the current PI for the CDU STEP-UP Program. Dr. Reid is the Executive Director of Pipeline Programs. Previously an assistant professor and Associate Dean in the College of Science and Health, Dr. Reid's publications, patents and scientific interests involve developmental biology, infectious disease, cellular reprogramming, metabolic syndrome, induced, pluripotent stem cells and gene therapy.

Dolores Caffey-Fleming, MS, MPH, is the Program Coordinator/Manager, STEP-UP Program. She assists the Program Director in the promotion and advertisement of the STEP-UP program; recruitment, retention, and tracking of student participants; day-to-day implementation and administration of the program, and supervision of student developmental activities and courses. Ms. Caffey-Fleming also provides direct oversight of other student activities during the research experience. Ms. Caffey-Fleming has extensive experience in coordinating short-term research experiences for students at CDU. She is a faculty member and the PI of Project STRIDE (Doris Duke Foundation High School Student Summer Program in Clinical Research) and a National Library of Medicine Environmental Health Information Outreach Program (EnHIP) grant.

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Nicozia S. Hurt is the Research Assistant who assists the Program Coordinator and PI of the CDU STEP-UP Coordinating center. Ms. Hurt assists with the tracking of student participants, retention and administrative operations of the program. Ms. Hurt is a graduate of the NIH/NIDDK STEP-UP High School Research Program. She believes participating in this very program was an integral part of her research experience and future experiences to come. The current four Coordinating Centers work extremely well with each other. Our program longevity and success is built on teamwork, collaboration with mentors and respect for each other.

### **ACKNOWLEDGEMENTS**

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