Commentary: Training and Mentoring the Next Generation of Health Equity Researchers: Insights from the Field

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During August 30-31, 2017, the National Heart, Lung, and Blood Institute's Center for Translation Research and Implementation Science (CTRIS) hosted a two-day workshop with thought leaders and experts in the fields of implementation science, prevention science, health inequities research, and training and research workforce development. The workshop addressed critical challenges and compelling questions from the NHLBI Strategic Vision, as well as the Department of Health and Human Services' Action Plan to Reduce Racial and Ethnic Health Disparities. Participants discussed: best practices for designing and executing implementation research training programs; approaches to increase participation in implementation research to address health inequities; innovative training methods and models, including team science approaches; and best practices for developing and sustaining a cadre of mentors for individuals who conduct implementation research.

As part of this workshop, the Saunders-Watkins Memorial Lecture, named posthumously for Dr. Elijah Saunders, a Baltimore cardiologist, and Dr. Levi Watkins, a Baltimore cardiothoracic surgeon, was established. Both men dedicated their lives to patient care, teaching, research, and community service. The lecture honors them for their pioneering efforts to advance health equity for medically underserved communities in the United States and around the globe, at a time when it was neither popular nor safe to do so. The lecture is also designed to stimulate a future generation of researchers committed to advancing health equity research and the elimination of health iniquities. The inaugural lecture was delivered by Lisa A. Cooper, MD, MPH, Bloomberg Distinguished Professor and James F. Fries Professor of Medicine at Johns Hopkins University, and inaugural recipient of the American Heart Association's Watkins-Saunders Award, which recognizes excellence in clinical, medical, and community work focused on diminishing health care disparities in Maryland. This article captures the essence of that lecture. *Ethn Dis*. 2018;28(4):579-585; doi:10.18865/ed.28.4.579

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Introduction

"The delicate balance of mentoring someone is not creating them in your own image, but giving them the opportunity to create themselves."-- Stephen Spielberg

History

Drs. Elijah Saunders and Levi Watkins were teachers, mentors, and role models for current and future generations of health equity change agents in clinical care and in biomedical and population health sciences. Dr. Saunders' work focused on advancing health equity by preventing and controlling hypertension among socioeconomically disadvantaged and medically underserved communities in his hometown, Baltimore, Maryland, as well as across the United States and the world. Dr. Watkins was the first African American to be admitted to and graduate from Vanderbilt University's School of Medicine and the first African American surgical resident at Johns Hopkins. He went on to perform the surgical procedure to implant the world's first automatic implantable defibrillator in humans. He was also a civil rights activist who dedicated his entire life to achieving social justice, equity, and inclusion in medicine, in his community and in our larger society.

I first met Dr. Saunders when I was a medical resident at the University of Maryland Hospital. Despite

his depth of knowledge, wealth of clinical experience and stature, Dr. Saunders was humble and respectful in all of his interactions with colleagues and patients alike. He was altruistic, spending many hours late in the evenings and on weekends pursuing the appropriate tests and consultations from specialists to assure the best clinical management for his patients. Dr. Saunders displayed a life-long commitment to learning; he often cited the most recent journal articles on topics relevant to the patient's care and encouraged his residents to seek the most current evidence to guide our decisions. Finally, and perhaps, most importantly, he displayed patient-centered attitudes – he listened to patients and their family members with respect, solicited their concerns and their opinions about the diagnostic and treatment approach, answered their questions, empathized with them, and provided them with reassurance of his commitment to them and their well-being. I learned the importance of putting the patient first from Dr. Saunders. Dr. Saunders continued to be a mentor, sponsor, and role model to me, attending my presentations at national meetings such as the International Society for Hypertension in Blacks, sending me notes whenever he heard of any of my professional accomplishments, writing letters of support for me, serving jointly with me on committees of the American Heart Association, and even serving as a member of the community advisory board for the Johns Hopkins Center for Health Equity, a transdisciplinary center for research, training, and community engagement, which I direct.[1]

I first met Dr. Levi Watkins at a welcome reception that he hosted for incoming under-represented minority students, residents, and postdoctoral fellows at Johns Hopkins. This was an institutional tradition he had begun early in his tenure at Hopkins that continues to this day. A few years later when I applied for a career development award from the Robert Wood Johnson Foundation's Amos Medical Faculty Development Program, I sought him out, knowing that he served on the national advisory committee. He shared his wisdom with me, supported me through the application process, and continued to be an advocate for me throughout my entire career. He inspired me to continue to pursue my professional goals in health equity research at a time when it was very difficult to be funded to do that kind of work and when health equity research (drawing upon clinical, population, and social sciences) was not yet recognized as the scientific discipline it is known to be today. Dr. Watkins also taught me a lot about faith and courage. He was outspoken, and he encouraged me to call out the injustices I saw in health care. But he also let me know that, although he was courageous, he was familiar with fear. He had grown up in a time where it really wasn't safe to speak out about issues like racial discrimination and social injustice. He said and demonstrated through his actions, that if you had faith in something bigger than yourself and you had faith in yourself, you could move through any fear you had, and you would have the courage to do what you needed to do.

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Training and Mentoring: Personal Reflections and What the Evidence Tells Us

Training in Effective Mentoring

Drs. Saunders and Watkins were two of my foundational professional mentors and role models. Each of my mentors and role models, men and women of various ethnic, racial, religious, and cultural backgrounds, has taught me much about science, medicine, relationships, and life over the years, and I have found it valuable to have a network of mentors. For scientists, training in mentoring skills and having protected time to mentor, are often challenging to obtain. I learned how to be a mentor from my own mentors. But I also learned that mentoring can be taught through formal training. Professional societies and associations, academic medical institutions, and the National Institutes of Health often hold faculty development workshops that include mentorship skills and leadership training. I participated in an innova-

tive program called Culture Change in Academic Medicine, (C-Change) Leadership and Mentoring Institute,[2] which provides excellent training through a year-long group peer mentoring program. NIH established the Midcareer Investigator Award in Patient-Oriented Research,[3] which provides funding to protect 50% of mid-career and senior scientists' time for research and mentoring. I was fortunate to have one of these awards from NHLBI for approximately 10 years. It allowed me to mentor more than 60 individuals from various disciplines and clinical specialties and at various levels of training.

The Johns Hopkins Faculty Development Program

I also learned early in my career in health disparities research that one needs specific skills to be a good teacher. During my general internal medicine research fellowship, I obtained training in teaching skills through the Johns Hopkins Faculty Development Program, a nine-month program in teaching skills and curriculum development with documented effectiveness among medical educators.[4] The overall learning goals are for participants to experience, value, and improve skills in facilitating self-directed learning and self-discovery and creating a collaborative, supportive, yet challenging learning environment. The content areas include adult learning concepts, time management, feedback provision and elicitation, small-group leadership and participation, physician–patient communication, precepting in clinical settings, lectures, and leadership and management of work teams.

I was also able to participate in the curriculum development part of the faculty development program, which provided a six-step approach developed by Kern and colleagues.[5] The goal of the first step, the general needs assessment, is to focus the curriculum by defining the deficits in knowledge, attitude, or skills that currently exist in the targeted audience of learners, and to identify the ideal approach to teaching and learning these objectives. The second step is to do a more targeted needs assessment of the specific audience of learners. The third step is to develop SMART (Specific, Measurable, Attainable, Relevant and Timely) goals and objectives. The fourth step is to select educational strategies, for example, deciding whether to use a combination of didactic and experiential methods. The fifth step is the implementation phase, and the sixth step is the evaluation phase where one obtains feedback from the learners and others and incorporates it to improve the program.

Adult Learning, Training, and Mentoring: What Does the Evidence Tell Us?

The concepts of adult learning are fundamental in developing successful training programs. Additionally, the evidence base for mentoring informs training of faculty for these programs. There *are* several categories of learning: knowledge of specific facts, patterns, and concepts; skills or practical abilities measured in speed and precision and attitudes (self-awareness, feelings, and motivations). Most training programs focus on increasing knowledge; fewer focus on developing skills and changing attitudes among learners.[6] Yet skills development and attitude examination and modification are particularly important in research to address health disparities. We know the attitudes researchers bring to their work impact their ability to interact effectively with research participants from diverse communities, colleagues from various disciplines, and stakeholders from multiple societal sectors.

A successful training program needs to be useful to the learners and respectful of the experiences and expertise they bring to the work.[6] Many research trainees complain that they learn a lot of information that has no practical or immediate use to them in their day-to-day work, and that the information is often not relevant to the populations or settings where they intend to do their research. Additionally, some trainees state that their educational environment is not welcoming. This is particularly important for people who come from disadvantaged backgrounds, who are used to being in environments where they don't feel as welcome or as comfortable. Training in research to address health disparities needs to occur in a safe space where learners can explore their attitudes and beliefs, and acknowledge their need for additional knowledge or skills, without being judged, or shamed. Presentations should be engaging and discussions respectful of the life experiences and expertise of the learners. Training programs should allow learners to share their experiences and learn from one another.

Although much has been written about the importance of mentoring for professional success, evidence for its effectiveness among scientists is limited; a systematic

review of mentoring among academic physicians found few studies that included long-term outcomes or objective outcome measures.[7]

From Greek history and mythology, we know that Mentor was a character who was a friend of Odysseus, and who was left in charge of Odysseus' palace and his son Telemachus when Odysseus went to the Trojan War.[8] Now, the term mentor is defined as a trusted friend, a counselor or teacher, and mentoring is "when a person of a greater rank or expertise teaches, guides or develops someone who is a novice in a profession."[9] Importantly, the mentoring experience has to have "an unusually beneficial effect on the protégé's personal and professional development."[9] There are many qualities of excellent mentors, and these individuals serve in various roles.[10] They socialize their protégés, teaching them professional norms and expectations, including how to access the resources needed for success. Mentors nurture their protégés. They impart specific knowledge and give constructive feedback. Mentors motivate and inspire others and serve as role models – they show by what they do. They advocate for their protégés. One of their most important roles is to open doors for others and help others navigate complex institutional and personal issues.

Training Health Equity Researchers

Content Areas and Skills Development

The contributors to health disparities and health equity are complex and multi-level, and they interact with one another.[11] This complexity calls for training a cadre of researchers and practitioners that represents multiple disciplines and multiple sectors of society. Additionally, the new generation of health equity scholars should be knowledgeable in different disciplinary approaches in addition to representing their own disciplines. They need to understand how to work with one another. Secondly, there is an evidence gap in health disparities research. Although the field still needs more basic biomedical research, more epidemiology, and more knowledge of clinical efficacy and effectiveness, a lot of existing knowledge is not being used to change practice and improve lives.[12] Many people called this the implementation gap. Knowledge is not being translated so that our society actually achieves equity. In order to close this gap, we must train a generation of people who are not only equipped to do transdisciplinary research, but who also understand how to engage stakeholders, how to disseminate and translate these initiatives and who understand what it's going to take to create sustainable approaches.[11]

We also need to train more people in implementation science.[13] The traditional public health disciplines include epidemiology, biostatistics, social and behavioral sciences, health services and outcomes research, and public health biology, but implementation science uses concepts and methods from all these fields, as well as other disciplines, to translate evidence into practice and policy. The new generation of health equity researchers also needs to use principles from community-based participatory research (CBPR),[14] which emphasizes the importance of partnerships that equitably involve diverse stakeholders from a broad cross-section of society. Additionally, areas that will require more focus include team science and leadership training, because we need people who understand how to work in teams that are interdisciplinary, multi-disciplinary, and to come up with transdisciplinary approaches to complex problems. The Clinical and Translational Science Awards Education and Career Development Committee suggests competencies in translational team work and leadership.[15] Many of these competencies can be learned through direct experience, but it helps to make them explicit in order to assure that they are accomplished.

The Johns Hopkins Medicine Center for Health Equity Training Program

In 2010, my team received a project grant from the NHLBI to establish a transdisciplinary center to address cardiovascular health disparities in Baltimore.[1] We have incorporated implementation science and CBPR principles into all of our work. We conducted three clinical trials, but importantly we received funding for a training core.

Training scholars is an important part of the Center's mission. We provide research training focused on developing interventions and engaging with community stakeholders to advance health equity. We also train clinicians to address social determinants of health as experienced by their patients. After doing general and targeted needs assessments, we

learned from our prospective and current trainees that they wanted practical tips about what it was like to do health equity research in the field. So, we created a curriculum called "Lessons Learned."[16] Trainees also needed financial support, for protected time to do the work, and to hire staff to help them collect and analyze data. The grant provided financial support for faculty fellows and pilot study funds for pre- and post-doctoral fellows. After we launched our training program, we learned that many high school, undergraduate and graduate students from disciplines outside of medicine, nursing, and public health and from neighboring institutions and across the country wanted summer internships and electives. To respond to this need, we created internships and electives. We published some of our early lessons learned in an article in *Academic Medicine*.[16] Some topics covered in our lessons learned include: how to select and train staff; how to tailor materials to a specific culture; how to do literacy adaptation of recruitment and data collection material; and how to generate community and organizational support during the research process.

For our summer program, each trainee completed a mentored research project and was assigned a faculty member who was willing to contribute their time. We had several nursing and medical students who wanted to do clinical shadowing as part of their experience, so we provided those experiences. We also held career development panels where graduate students at Hopkins shared practical tips about what they did to get into school and how they had been successful. We included short didactic sessions and field experiences with community-based organizations and the local public health department. To do this, we leveraged existing partnerships with members of our community advisory board. Now, we have developed a course for academic credit called Applications of Innovative Methods and Health Equity Research.[17] The inaugural course was presented in June 2017 and we now have an online version, which is offered during the academic year as well. Our course features faculty across the institution who have substantial expertise in health equity. We include lectures, case-based examples, interactive panels, and discussions. Our final assignment includes the choice of developing a stakeholder engagement plan or an intervention development plan. Students submit an initial draft for feedback from the course faculty before completing the final assignment. We encourage students to apply the assignments to their own work, giving them practical experience that they can use vs only an academic exercise. The course has earned the excellence in teaching award for both the summer institute in-person course and the third term online version.

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We also learned that many trainees wanted opportunities to present research-in-progress to get feedback from faculty and peers. So,we established a seminar series called Health Equity Jam Sessions,[18] which we hold on a monthly basis. It is an informal forum where trainees and faculty can discuss their research ideas and proposals, their research-in-progress, manuscripts, and grants. This is unique from other similar sessions at our institution in that it specifically focuses on health equity. Many research collaborations have come out of these sessions, which are also used for career development and professional networking. We held a session using a speed mentoring approach, because we found out that a lot of trainees wanted to meet the faculty and faculty would like to meet trainees; yet, they found it hard to have individual meetings with large numbers of trainees. The speed mentoring session allowed trainees to chat informally with faculty for a short period of time to get to know them. We plan to hold this session on an annual or biannual basis.

Finally, we have created a database of faculty interests, projects and opportunities for trainees that we update on quarterly basis, so that when trainees express interest, we have a way of linking them with appropriate faculty. The Jam Sessions are livestreamed using Periscope to allow

access and watching from any location. We also have posted an archive of the Jam Sessions on the Center's Facebook page to allow 24/7 access.

We are proud of our trainees' accomplishments. We've equipped more than 70 scholars since 2010. Many have received career development awards. Eight trainees have received independent research grants, and several trainees have received national awards for their research. They have led more than 40 publications thus far. Most of our initial cohort of faculty trainees have been promoted to associate professor, and most of our early pre- and post-doctoral trainees are now in faculty positions. One of our former trainees, Tanjala Purnell, PhD, MPH, now serves as associate director for Education and Training in our Center; she also co-directs our Applications of Innovative Methods and Health Equity Research course with me. Almost all of our undergraduate trainees have matriculated into medical, nursing, public health, or other graduate programs in science within 3-4 years.

Lessons Learned

Although we are still collecting data to formally evaluate our training program, one of the lessons we have learned is that a curriculum focused on practical skills, experiential learning in clinical and community-based settings, and interactive research-in-progress sessions are well-received by trainees. Conducting research to reduce health disparities and achieve health equity is very hard work, and we need to support our trainees and to make the learning experiences as rich and enjoyable as possible. With regard to mentoring, one of the most important lessons I have learned is that when I help others to achieve their dreams, we all enjoy the journey. There is nothing more rewarding for me than helping young people realize their dreams. Working together, all of our dreams can change the world. No single person can solve the problem of health disparities; it will need to be addressed for many generations to come. I have been fortunate to have excellent mentors, teachers, and role models, and for that, I am truly grateful. I will continue to honor their legacies by paying forward the knowledge, wisdom, and support I have received.

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