Chapter 5
Development of a Biomedical Research Workforce Through the Support of Advisory Committees

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ABSTRACT
Workforce development has not always been a set goal in biomedical research education and training. The highly-specialized training in biomedical research has often focused on the development of academic focused scientists, however, in the past 20 years this has been observed as unsustainable. A discussion ensues of the key areas of improvement to develop a sustainable biomedical workforce, and improve dispersion of diverse talent in all areas of biomedical research training (academic, industrial and government). The roles of advisory committees in biomedical research education and training demands that these be extended to additional venues to improve workforce challenges as individuals leave the training phase. Involvement of stakeholder roles in training opportunities by opening collaborations with training institutions opens venues for improvements in educational relationships, and workforce improvements. This chapter will also address the value of biomedical research (VOBR) and discuss recommendations to address workforce diversity and development.

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To achieve diversity in the biomedical research workforce, it is critical to ensure that the best and the brightest minds have the opportunity to contribute to the realization of the national biomedical and clinical research goals. These goals promote an increase stability public health outcomes in the general population, as well as maintain positive financial outcomes. The American biomedical research enterprise is the world leader in health-related discovery and innovation, however the downturn in investment funds, in addition with a lagging biomedical research workforce that is not well compensated for its services, can change the prospects of continuing advancements in innovation, positives outcomes in public health, and workforce stability. The National Institutes of Health (NIH), the leading agency to support the efforts of biomedical research and dissemination of information to improve health outcomes, ensures that the development of a training campaign at all the institutions that receive federal funding, realizes a sustainable workforce. Typically, in biomedical research training, the apex of professional success after an intense training program, is a position of professorship in academia. This so called ivory tower has been eluded more recently by increased numbers of highly qualified trainees that fail to secure the necessary funds to begin an independent research career. According to reports from the NIH and the National Science Foundation (NSF), the number of biomedical research trainees that secure a fellowship grant to pursue an independent research career is less than 5% (Kolata, 2016). But it is also important to note that this is a fraction of the number of individuals that are capable of securing an academic research position. According to the NIH, only 25% of the number of trainees that obtain a biomedical research doctorate degree, are able to transition into an academic position (WGDBRW, 2012). The timeline increases for those individuals hoping to obtain their first career-award.

The problematic situation that has developed in biomedical research training and education, has not gone unnoticed, but the implementation of recommendations has not been fully engaged. Alberts and Rodgers (Alberts, 2014; Alberts, 2015; Rodgers, 2013) have developed key recommendations to improve the quality of biomedical research education, as well as to address the workforce development for those individuals that do pursue biomedical training. Some of these recommendations include: (1) The education of graduate students in the rigor of taking biomedical research training. (2)
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