Chapter 5

Framework for Recruiting Underrepresented and Racially–Minoritized STEM Teacher Candidates

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ABSTRACT

The purpose of this chapter is to develop a theoretical framework for recruiting underrepresented and racially minoritized (URM) STEM students in order to increase the number of URM STEM teachers. Three possible sources (high schools, community colleges, and four-year institutions) from which to recruit potential URM STEM teachers will be discussed, considering some of the advantages and disadvantages of each. Various career theories will be presented in terms of their applicability to URM STEM teachers. Relevant data and findings from studies that investigated URM students majoring in STEM and STEM teaching will be highlighted. Finally, a recruitment framework that integrates all ideas explored—sources of potential URM STEM teachers, career theory, and data and research on URM students in STEM and STEM teaching—as a means for increasing the number of URM STEM teachers will be proposed.

There is a shortage of underrepresented and racially minoritized (URM) STEM teachers in our schools across the nation, which could lead to even fewer URM STEM professionals as time progresses. Data indicate a need for teachers in several disciplines, including various STEM fields (Cross, 2017). Moreover, data from

the National Center for Education Statistics (2011-2012) specify that less than 20 percent of mathematics and computer science teachers and less than 20 percent of natural science teachers in K-12 schools self-reported as non-white. These data are staggering, given that the percentage of non-white students enrolled in public school is 51% (Pew Research Center, 2018), which is far more than twice the number of STEM teachers who self-identified as non-white in previous years. Furthermore, research posits that students of color do better with teachers of color academically, socially, and emotionally (Carver-Thomas, 2018). Hence, these data imply the need to increase the number of URM STEM teachers in order to better serve our nation's students and increase the number of URM STEM professionals, especially during this era of the "Great Resignation." The process for increasing the number of URM STEM teachers involves the recruitment, preparation, and retention of such teachers. This chapter will focus on the recruitment aspect of the process by proposing a theoretical framework for recruiting URM STEM teacher candidates (also referred to as students throughout this chapter).

BACKGROUND INFORMATION

However, to begin this chapter, it is appropriate to formulate an understanding of the current state of Teacher Preparation Programs (TPPs) in general and in STEM TPPS if the intent is to increase the number of URM STEM teachers by recruiting URM STEM students. Through an extensive analysis of data from Title II reports submitted by federally funded TPPs, Partelow (2019) determined that, since 2010, *enrollment* in TPPs has declined by more than one-third across the nation. More specifically, Partelow's (2019) analysis determined that *enrollment* in TPPs decreased:

- nationally;
- in almost every state when disaggregated;
- for students of nearly every race and ethnicity by varying amounts nationally;
- for students who identified as Black or African-American in practically every state when disaggregated;
- for men in almost every state when disaggregated;
- more for traditional TPPs than other preparation programs nationally; and
- more for traditional TPPs than other preparation programs in virtually every state when disaggregated.

A traditional TPP *offers* teacher certification while obtaining a bachelor's and/or master's degree; they are the largest producers of teachers compared to other

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