Chapter 2
Navigating the Landscape of the STEM Professoriate: Reflections and Insights From Women of Color

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ABSTRACT

In 1976, the challenges faced by women of color who pursue careers in science, technology, engineering, and mathematics (STEM) fields were first brought to national attention. Forty-two years later, the authors re-examine the challenges, barriers, and successes of women of color in STEM higher education. This chapter examines the landscape of the STEM professoriate through a literature review (journals, trade magazines, theses, and dissertations) and reflective shorts and quotes from women of color navigating the STEM professoriate. The literature review spans a 10-year period (2008-2018). Both the review and the reflections focus on the areas of STEM belonging, self-presentation, stereotyping, institutional racism, discrimination, and tokenism as challenges faced by women of color in the STEM professoriate. Additionally, mechanisms used by women of color to navigate and succeed despite these barriers, such as mentoring, are explored throughout.

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Navigating the Landscape of the STEM Professoriate

INTRODUCTION

The literature on women’s under-representation in academia asserts that faculty women face a ‘chilly climate’, but there are few theoretically-based studies examining this proposition. Relational demography, organizational justice, and social network theories all identify possible antecedents of ‘chilly climate’ (Maranto and Griffin 2010) that has been deemed responsible for the shortage of women STEM faculty, and especially minority women. This chapter explores common barriers faced by women of color as they progress in academic STEM careers. Underrepresented women faculty in STEM, according to the National Science Foundation (NSF), refers to Hispanics, Native Americans, and Blacks—the three racial and ethnic groups “whose representation in science and engineering is smaller than their representation in the U.S. population” (National Academy of Sciences 2011).

Despite a plethora of initiatives and a surge of research activity within the last ten years, women remain underrepresented in science, technology, engineering, and mathematics (STEM) disciplines (National Science Foundation 2017). More importantly, while much research has focused on ways to recruit women into these disciplines, less work has explored the strategies women use to navigate these contexts once they have entered (Lezotte and Ferguson 2017).

Examining the “pipeline” towards the STEM professoriate, it becomes starkly apparent that few minority women could begin the trajectory towards entering the professoriate, as relatively few participate in Bachelor Degree programs in many critical STEM fields (NSF 2017) (Table 1).

According to a recent National Center for Education Statistics (NCES) report in 2017, less than 6% of full-time faculty (professors, associate professors, assistant and assisting professors, instructors, lecturers, adjunct professors, and interim professors) at degree-granting institutions were Black, Hispanic, or

<table>
<thead>
<tr>
<th>Bachelor’s Degree</th>
<th>Females (%)</th>
<th>Minority Females (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer Science</td>
<td>17.9</td>
<td>4.8</td>
</tr>
<tr>
<td>Physical Sciences</td>
<td>39</td>
<td>6.5</td>
</tr>
<tr>
<td>Mathematics</td>
<td>43</td>
<td>5.4</td>
</tr>
<tr>
<td>Engineering</td>
<td>19.3</td>
<td>3.1</td>
</tr>
</tbody>
</table>

Table 1. Females in select STEM programs as reported by NSF, 2017
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