Fields of Study and the Race Gap in College Graduation Likelihoods at 4-Year Elite Colleges

Dafna Gelbgiser[1] (Cornell University) and **Sigal Alon** (Tel Aviv University)

Extended Abstract

Since the mid-1960s, elite colleges and universities have used race-sensitive admission policies in order to attract talented black applicants, diversify their student bodies and train future leaders from all racial groups (Bowen and Bok 1998; Kane 1998; Alon and Tienda 2007). However, despite dramatic increases in the share of black students in elite 4-year colleges, black students are still significantly less likely than white students to graduate (Alon 2007; Bowen and Bok 1998; Kao and Thompson 2003; Roska et al. 2008; U.S. Department of Education 2004; 2009). These persisting racial disparities in college graduation likelihoods remain an important policy concern as they skew the extent to which black students gain access to benefits associated with elite college diplomas given enrollment (Alon and Tienda 2005; Small and Winship 2006; Bowen and Bok 1998).

Since the advent of affirmative action admission policies in elite colleges various explanations for racial disparities in graduation likelihoods have been suggested. Traditionally, most explanations focus on factors prior to college enrollment, including the social and academic background disadvantages of black students relative to whites and their confounding effects (Alon 2007; Bowen and Bok 1998; Roska et al 2008), as well as macro-level factors such as cultural differences in attitudes towards education

[1] Please direct all correspondence to: Dafna Gelbgiser, Department of Sociology, 356 Uris Hall, Cornell University, Ithaca NY 14853-7601. Email: dg432@cornell.edu

(Roska et al. 2008; Downey 2008), and exposure of black students to stereotypes about black students' scholastic aptitude, which consequently inhibit the academic achievements of black students in elite colleges (Steel and Aronson 1995; Jayanti and Lynch 2012). Contrary to this approach, other scholars point out that while students come to college with differences in preparation and social background, gaps in college graduation likelihoods are exacerbated, or mitigated, by institutional factors *within* the college environment, such as campus racial composition and college selectivity (Small and Winship 2006; Alon and Tienda 2005; Bowen and Bok 1998). Alon and Tienda (2005) for example, show that college selectivity is positively correlated with the graduation likelihoods of black and white students, above and beyond other personal attributes. Further, they show that the effect of college selectivity is asymmetrical—black students benefit more than white students from the academic environment of selective colleges. As a result, racial disparities are smaller in more selective institutions. Echoing these results, Small and Winship (2006) show that college selectivity accounts for roughly 40 percent of the between-institution differences in black students' graduation likelihoods.

In this paper we further unpack the influence of factor within college and offer an additional structural explanation for racial disparities in college graduation likelihoods—black and white students' distributions in fields of study. Students in higher education not only choose an institution, but they also select into different fields of study. We posit that these fields of study are characterized by different institutional arrangements—grading policies, curriculum structure, role models and social context—which provide the immediate social and academic environment that facilitate students' academic achievements and graduation likelihoods. Previous findings suggest a strong link between

fields of study and college graduation likelihoods, even after adjusting for differences in personal attributes (Alon and Gelbgiser 2011; Suresh 2006). Particularly, students in science, technology, engineering and mathematical fields (hereafter "STEM fields") tend to have lower graduation rates than their peers in non-STEM fields. Thus, differences in the distributions of black and white students across different fields of study may account for some of the race gap in college graduation likelihoods. In a similar vein, Alon and Gelbgiser (2011) assessed the influence of fields of study on the female advantage in college graduation rates. They show that the female advantage is strongly linked to the unequal gender distributions throughout fields of study. The institutional arrangements of female-dominated fields, they found, promote high grades and graduation rates, while those of STEM fields, in comparison, promote lower grades and graduation rates (Alon and Gelbgiser 2011; Hearn and Olzak 1981; Leppel 2001; Sabot and Wakeman-Linn 1991; Xie and Shauman 2003; Freeman, 1999). Here, we build on Alon and Gelbgiser's findings and assess whether and how fields of study, and the distribution of students across fields of study, may shape racial disparities in college graduation likelihoods.

In the following pages, we provide a systematic assessment of the role of fields of study in shaping racial disparities in graduation likelihoods. Specifically, we examine the influence of fields of study via two simultaneous processes: (1) the distribution of students across fields of study, and (2) the group-specific effect of fields' arrangements on their graduation likelihoods. To this end, we first examine the selection regime that channel black and white students into different fields of study on a large sample of roughly 24,000 students attending 4-year selective colleges and universities in the 1990s (the College and Beyond 1989 dataset). Then, we use HLM models to examine the effect of the institutional arrangements within fields on the graduation likelihoods of black and

white students and their effect on the race gap. Last, we examine what share of the race gap in college graduation likelihoods can be attributed to students' chosen fields of study using fixed-effects models. To foreshadow our findings, we show that fields of study accounts for roughly 40 percent of the race gap in college graduation likelihoods that remain unexplained by social and academic and other institutional factors. Interestingly, however, the effect of fields of study on graduation likelihoods is asymmetrical: the graduation likelihoods of blacks are much more negatively affected by the institutional arrangements of field of study relative to white students. We discuss the implications of these results as well as consider gender differences in the effect of fields of study on the race gap.