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Intersectionality and Labor Market Outcomes: Women's Racial and Ethnic Variations in STEM Fields and Professional Fields, 2001 to 2011

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INTERSECTIONALITY AND LABOR MARKET OUTCOMES: WOMEN'S RACIAL AND ETHNIC VARIATION IN STEM FIELDS AND PROFESSIONAL OCCUPATIONS, 2001 TO 2011

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ABSTRACT

Although theories of group threat and racialized social systems can help explain labor market outcomes across racial and ethnic groups, they fail to account for gender differences in labor market outcomes. Intersectionality, the dominant feminist framework, suggests that identities such as race, ethnicity, and gender interlock to create a system of "multiplicative" disadvantage for minority women in the workplace. Additionally, contemporary changes in the labor force have witnessed increasing numbers of immigrant women entering the workplace – thus adding new challenges to the multiplicative disadvantages for some women. This study explores the changing pattern of Intersectionality barriers on labor market outcomes for women in the United States, focusing on the differences between subgroups of Latina workers and Black women.

Using Current Population Survey (CPS) 1% sample data from Integrated Public Use Micro Data (IPUMS) I examine women's racial and ethnic variation in professional and STEM fields from 2001 to 2011, and explore associated wage and salary income changes while offering two complimentary sociological theories within an intersectional framework that may be useful in racial and ethnic variation in labor market outcomes in the U.S. Bonilla-Silva's Tri-Racialization Theory suggests that lighter skinned, more assimilated people of color act as a buffer group in the social hierarchy cementing a place

at the bottom for darker skinned, less assimilated People of Color. Alba's Non-Zero Sum Mobility Theory suggests that in strong economic periods the dominant social group will feel less threat and all groups, both White and People of Color will experience upward mobility.

The results of my study suggest that while Black women have higher odds of being in STEM/STEM skilled fields than white women, they do not see the same returns to labor. Of the Latinas in my study, Mexican women had the lowest odds of being in STEM/STEM skilled fields compared to White women, and the lowest returns to labor compared to their White counter parts. While foreign born women as a whole had higher odds of being in STEM/STEM skilled fields than U.S born women, Puerto Rican women had lower odds of being in STEM/STEM skilled fields than native born women. Similarly, with the exception of the most assimilated women, as assimilation increased, so did odds of being in STEM/STEM skilled fields compared to U.S. born women.

My findings suggest that undeniably, variations in race and ethnicity are associated with variations in labor market outcomes, though race and ethnicity race and ethnicity do not stand alone as explanatory variables in women's labor market outcomes. Indeed, nativity and assimilation are also associated with labor market outcomes.

Key words: Intersectionality, women of color in STEM, STEM skilled, labor market outcomes

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CHAPTER 1: INTRODUCTION

During the 1970s the wage gap narrowed between women of color and white women, prompting scholars to question whether the significance of race in women's labor force outcomes was declining (England and Browne 1992). However, since the 1980s there has been a renewed focus on the labor market disparities of women of color relative to white women. While women's labor force participation as a whole has continually increased since the 1800s (England and Browne 1992), growing from about a third of the labor force in the 1950s to about half of the labor force today (Michaelides and Muesar 2012), relative to white women, black women have experienced lower levels of educational attainment, higher rates of part time employment, and lower wages (Newsome and Dodoo 2002; Dozier 2010; Wilson 2009). In fact, black women experienced a steady black-white earning gap in the 1980s that did not close during economic prosperity in the 1990s (Browne and Askew 2005). From the 1980s and into the 2000s the United States saw its Latina/o immigrant population double (Taylor and Schroeder 2010). Similar to black women, the younger, less educated, and lower-skilled Latina population also experienced labor market disadvantage relative to white women (Corcoran, Heflin, and Reyes 1992). Indeed, from the 1990s and into the 21st century Latina's experienced earning trends more similar to those of black women than their white counter parts (Browne and Askew 2005).

Since the pivotal Bound and Dresser (1999) announcement that black women were no longer experiencing wage parity with white women and were indeed experiencing a re-widening of the black-white wage gap, an emerging literature has offered various explanations for racial variations in women's labor force outcomes.

While a central focus of this literature has been the deteriorating wages of black women, more recent scholarship has begun to include Latinas in the analysis (England, Garcia-Beaulieu and Ross 2004; Alon and Tienda 2005; Torres and McQuillan 2007). A handful of these studies suggest that there is substantial heterogeneity in labor market outcomes among Latina subgroups. Thus, in addition to a renewed focus on the role of race in women's labor force experience, it is paramount that we also consider ethnicity as it intersects with gender in the labor market.

In order to examine how race and ethnicity intersects with gender I am testing two race relations theories in an intersectional framework. The theory of tri-racialization (Bonilla-Silva 2004) posits that lighter skinned people of color and more assimilated immigrants (honorary Whites) will serve as a buffer group that helps cement darker skinned people of color and less assimilated immigrants (collective Black) at the bottom of the social hierarchy and White, U.S. born folks at the top of the social hierarchy. I am using this theory to explore variations in labor market outcomes for Black and Mexican women who continually have the lowest chances of social mobility, and for Puerto Rican and Cuban women who seem to have better chances in social mobility than their Black and Mexican counter parts, though still frequently falling behind that of White women. I am also using the theory of non-zero sum mobility (Alba 2009) to explore the racial variations in labor market outcomes for women during a pre-recession time period and a during/post-recession time period. The theory of non-zero sum mobility suggests that in periods of economic growth the dominant group will feel less racial threat from the minority group and therefore all workers will experience mobility. In this project I use the two collaborative theories in an intersectional framework in order to better understand

how Black women, Mexican women, Puerto Rican women, and Cuban women fare in the labor force relative to their White counter parts in STEM fields and professional fields.

Until the 1990s, most of the research on racial and ethnic variation in labor market outcomes was focused on men, using explanations tied to variation in human capital, labor market factors, educational attainment, and family structure. However, feminist scholars argue that explanations for men's experiences cannot adequately describe the experiences of women. Rather, the use of an intersectional framework allows for the simultaneous examination of gender, race, and ethnicity in the labor force experience (Browne 1999; Read and Cohen 2007; Browne and Askew 2009). An intersectional analysis is important for many reasons. Women of color continue to face structural constraints when accessing jobs for which they are qualified, and weaker social networks and discrimination lead to black women and Latinas receiving fewer job offers than their similarly qualified white counterparts (Alon and Tienda 2005). Circumstances that decrease economic insecurity such as teen parenting, marital disruption, and having a partner with lower market capacity serve as barriers to mobility for women of color, cementing them in lower tiered work (Alon and Tienda 2005). By the 2000s, several scholars had examined racial differences in the labor market experiences of women using a more intersectional framework (Alon and Tienda 2005; Browne 1999; England, Garcia-Beaulieu, and Ross 2004; Read and Cohen 2007).

Objectives of the Study

Because I am interested in women's racial and ethnic representation in professional and STEM fields, this project is guided by two primary research questions.

1.) Do minority women experience increased representation in professional fields and STEM fields from 2001 to 2011? How do patterns differ among Black, Mexican, Puerto Rican, and Cuban women?

2.) Do median salary and wage income change in professional fields and STEM fields with increased representation of women of color? If there were indeed changes in the representation of minority women in professional fields and STEM fields, and associated salary and wage income changes, how did the changes compare to those experienced by White women (absolute vs. relative change)?

In answering these questions, I have two overall goals for this project. First, I integrate intersectionality theory with sociological race theories in order to help explain variations in women's labor market outcomes by race and ethnicity and by important assimilation factors such as age at arrival and time spent in the United States, English-language proficiency, and citizenship status. Second, I examine specific variations by race, ethnicity, and assimilation in STEM fields and professional fields in order to assess the changing composition of these fields. I am particularly interested in showing whether minority women continue to face barriers to entry into these fields and whether those barriers are the result of a multiplicative disadvantage for these women.

Professional Significance of the Study

This project offers several contributions to the literature on women and work in the United States. First, I am integrating two race relations theories into an intersectional framework to better understand the labor market outcomes of women in a partnership that has not been used before. For this project I am intentionally integrating sociological race

relations theory with a feminist intersectional framework. Feminist scholars have long argued that the lived experiences of women cannot simply be explained as a gendered experience or a raced experience (Crenshaw 1991; King 1988; Hill Collins 1990; Wing 2003). Rather gender, race, class, and other identities intersect to shape the experiences of women that cannot be explained by virtue of a master status. Sociological race theory attends well to the notion that different racial groups have different life experiences by virtue of group belonging. When used in collaboration with intersectionality, sociological race relations theory can help explain further the variation across racial/ethnic group and within ethnic group.

The second contribution that I offer is a quantitative example of the application of intersectionality. Intersectionality tends to be primarily used for qualitative work, yet is an invaluable tool in understanding the lived experiences of marginalized laborers. I argue that intersectionality is especially useful in understanding the diverse work experiences of Latinas who are rarely disaggregated into their prospective subgroups. I also use intersectionality theory to understand the relationship between assimilation and STEM/professional employment, and wage and salary income.

Finally, my work offers a rare opportunity to explore the wide array of STEM skilled fields in my analysis. While many studies are limited in their ability to include diverse STEM occupations, my data allow me the unique opportunity to include occupations that require technical skills and offer higher returns to work than non-STEM fields. While there has yet to be a consensus of what constitutes a STEM field, typically high paying and high skilled fields, such as medical practitioners are not included in STEM disciplines, in spite of their high degree of science knowledge. Similarly, support

fields such as radiology technicians, lab technicians and even nurse practioners are not considered STEM fields in spite of their high degree of science knowledge, high degree of technical skill, and above average wage. This project takes advantage of the detailed occupation data from the American Community Survey and categorizes all fields with science, technology, engineering, and math skills as STEM fields to be more inclusive in my analysis of women of color in STEM.

Study Limitations

In spite of its contributions, this study does have limitations. To start, applying intersectionality theory can be difficult. In spite of the many promises of intersectionality, there are many methodological challenges. First, there is a lack of clearly defined methodology. Specifically how do we attend to the intersecting points and how many intersecting points are there? The definition of intersectionality is inherently vague from arguments that intersectionality refers to all subject positions to arguments that intersectionality refers to only marginalized subjects. The ambiguity of intersectionality makes it difficult to assess for empirical validity (Nash 2008). This matters for my analysis. I am looking at race/ethnicity, nativity, and assimilation. However, equally important in the STEM fields and professional fields are education and skill. Second, while the intersectional framework was built using black women as the prototypical intersectional subject (Nash 2008) it has expanded to include other identities such as sexual orientation and immigration status. However, 'intersectionality fetishizes the study of difference' and allows the more powerful to define the standard (Choo and Ferree 2010). Valentine (2007) points out that because of the complexities of using an intersectional framework, it is difficult to include a full analysis in one article. Often

times the result is a collapse of the work that focuses in the marginalized group while ignoring how privileged and powerful identities are done and undone. In this respect, to be truly intersectional, I should be comparing women of color in STEM and professional fields to White men, which I do not.

Third, while intersectionality works to problematize social categories, at the same time it replicates the processes it criticizes by constructing new social categories (Nash 2008). Which is exactly what I have done when creating an assimilation index and interaction effects for the regressions. Fourth, at the very core of intersectionality is the rejection of oppressed identities as additive. However, it is difficult to construct questions about experiences that are 'intersecting, interdependent and mutually constitutive' without using the additive approach. What makes sense in theory is difficult to apply in methodology (Bowleg 2008). I would argue that this problem with intersectionality is most salient in quantitative analysis. In regression analysis the researcher is literally *adding* variables to the analysis.

A second theoretical limitation of this study is that the theory of tri-racialization and the theory of non-zero sum mobility are not mutually exclusive. Neither theory can explain the labor market outcomes of women of color on their own. Both theories can apply at the same time in this study.

Another major area of limitation is the data limitations I have in this study. I am testing the theory of tri-racialization, which suggests that lighter skinned people of color and more assimilated immigrants will have greater chances at social mobility. And while this data set has robust indicators of assimilation, there are no skin tone variables. A second limitation with the data is that education variable is inadequate. I was unable to

incorporate degrees into my analysis because these data do not measure degree rather, I had to use less than high school, high school, four years of college, and five years of college. This particular limitation matters for the STEM fields that largely require degrees. I am also unable to incorporate documentation status of my immigrant sample. This is a serious limitation when disaggregating the Latina population as the three subgroups have very different immigration histories and may very well have very different documentation statuses. Documentation status has implications for entry in both the STEM fields and the professional fields, especially those that require licensure.

A third area of limitation is also a strength of the study. I am using a non-traditional definition of STEM fields. The inclusion of STEM skilled workers in my analysis may make my study difficult to compare to other studies. Additionally, I have not separated out the STEM workers from the STEM skilled workers. Therefore, I cannot explore whether or not marginalized groups are more likely to be STEM skilled, rather than have traditional STEM positions.

Finally, I am not including Asian women in this study. While I chose to focus on disaggregating Latina subgroups and explore assimilation, I do overlook Asian women who have the highest representation in STEM fields. At a later time it will be useful to compare other women of color in STEM fields to Asian women as well as White women and White men.

Summary of the Study

In this dissertation I begin by reviewing the race/ethnicity and labor market literatures that focus on three key areas. First, I will offer intersectionality as a framework for examining racial and ethnic variations in women's occupational mobility. Second, I

will highlight trends in wage and salary income, and professional attainment during the 2001 to 2011. Third, I will explore the major historical, demographic, policy and discrimination explanations for racial and ethnic differences in labor market outcomes. I will offer two complimentary sociological theories within an intersectional framework that may be useful in explaining racial and ethnic variations in labor market outcomes in the U.S. Eduardo Bonilla-Silva's theory of tri-racialization suggests that more assimilated immigrants and lighter skinned people of color act as buffer group to cement the less assimilated immigrants and darker skinned people of color to the bottom of the social hierarchy. And Richard Alba's theory of non-zero sum mobility suggests that as the U.S. experiences periods of economic prosperity, the dominant group will feel less threat and marginalized populations will experience upward mobility. After my review of the literature and theoretical discussion I propose my research questions and hypotheses. I then discuss my data and methods in Chapter 4. In the methods chapter I present a variety of descriptive statistics that illustrate the racial and ethnic composition of my sample, and the racial and ethnic composition of STEM fields and professional fields. I then discuss my analytical methods which include a logistic regression to predict the odds of a women being employed in a STEM field or a professional field, and an ordinary least squares regression to examine the relationship between racial and ethnic composition of STEM fields and professional fields, and the income for each racial and ethnic group in my sample. In Chapter 5 I present the results of the logistic regression and the odds of being in the STEM fields or professional fields. In Chapter 6 I present the results the ordinary least squares and the relationship between race/ethnicity and income. Chapter 7 offers my

key findings and some program and practice recommendation for increasing minority women's representation in STEM and professional fields.

CHAPTER 2: LITERATURE REVIEW

Why Gender, Race and Ethnicity: An Intersectional Framework

Currently the dominant feminist theoretical tool, intersectionality is an anti-essentialist method of examining social categories such as race, ethnicity, immigration status, gender, and class (Valentine 2007). The roots of intersectionality can be found in critical race theory in legal studies (Valentine 2007; Nash 2008), and in standpoint theory found in black feminist thought (Choo and Feree 2010). Intersectionality developed with studies of racial and ethnic relations and racial differences in social, economic, and political outcomes, but specifically argues simultaneous inclusion of other identities in the analysis. Theoretically, intersectionality posits that identities, especially marginalized and oppressed identities, do not stand alone and are not simply additive. The tradition of intersectionality is built on the study of black womanhood and argues that race + gender ≠ black woman. Rather, the experiences of a black woman are distinctly different from her white female or black male counterparts (Crenshaw 1991; King 1988; Hill Collins 1990; Wing 2003). Intersectionality rejects the notion that one marginalized identity can be added to another marginalized identity in the examination of oppression, and posits that social inequality increases with each additional marginalized identity (Bowleg 2008). Instead of being additive, intersectionality argues that identities are multiplicative (King 1988), and that multiple social institutions overlap to determine multifaceted social inequalities (Choo and Ferree 2010). Noted intersectionality scholar Patricia Hill Collins (2006) argues that identities such as race, gender, and class are 'mutually constructing systems of power'.

An intersectional framework is particularly relevant for the examination of women and labor force outcomes for several reasons. First, intersectionality destabilizes race/ethnicity and gender binaries, allowing for a more complete and simultaneous understanding of race/ethnicity and gender as social processes and social constructions. Second, intersectionality responds to the criticisms of identity politics and its inability to transcend differences. Instead, intersectionality recognizes intra-group differences and exposes differences within broader groups of 'women' and racial/ethnic groups. Third, intersectionality provides a venue to reconcile the legacy of exclusion of 'multiple marginalized subjects' that feminist and race relations work had previously left behind. Intersectionality places at its center the experiences of those who have been traditionally left out of the analysis and demonstrates the inadequacy of mutually exclusive social categories (Nash 2008).

Intersectional theorists argue that women's labor force experiences have to be considered separately from those of men for several primary reasons. First, men have been more likely to be continuously employed in full time jobs, for pay, throughout their lives (Brown 1999). Second, men can find employment in a range of occupations and industries (Browne 1999). Third, men have little interference from family life (Reskin 1993). In contrast, women's jobs tend to be segregated by gender (Reskin 1993), and importantly, women's labor force participation is generally intimately tied to the family. Women are more likely to move in and out of the work place and to work part-time in order to parent (Brown 1999). Further, women are increasingly the sole family head (Browne 1999). The rise in single motherhood becomes increasingly important as coping strategies that enable single mothers to participate in the labor force deteriorate. Of

particular importance is the role of social capital. For decades now researchers have been arguing that poor and working class women use their social networks to navigate their lives and take care of their families. For example, Carol Stack (1974) offered a feminist response to the culture of poverty argument for black poverty in her ethnographic account of the coping strategies of a poor black community in the 1970s. Today researcher still suggests that low income single mothers, especially women of color, rely on their social networks as a means for navigating the economic system, including the labor force (Johnson and Honnold 2011). Often this support comes in the form of the exchange of childcare services, housing and small loans. However, research suggests that in the current hostile economic conditions, single mothers find it increasingly difficult to participate in this form of social capital that relies on reciprocity (Johnson and Honnold 2011).

The distinction between the black woman's experience and the white woman's experience has been one of central focus in the women and labor force literature for decades now. Indeed, one of the most heavily examined areas has been the black-white wage gap (Sololoff 1988, 1992; Bound and Dresser 1999; Browne 1997, 2000; Kim 2002; Neal 2004; Dickerson 2007; Grodsky and Pager 2001). Post-Civil Rights Era research notes that gains in access to education, an expanding government with grant-funded jobs, a growing service industry, and equity based policies such as Affirmative Action brought boosts to black women's occupational mobility (Pettit and Ewert 2009). In fact, prior to the 1980s, black women experienced gains in which they reached parity or by-passed their white counterparts in some labor force outcomes. However, since the 1980s, there has been an increase in the black-white employment and wage gaps. In their

now pivotal piece Bound and Dresser (1999) announced that black women were no longer experiencing gains in labor force outcomes. In fact, the black-white wage gap has been widening once again and in some instances has tripled. Today, the most recent research suggests that black women and white women have both qualitatively and quantitatively different work experiences and different economic returns from their labor force participation (Ortiz and Roscigno 2009; Pettit and Ewert 2009; Power and Rosenberg 2010; Dozier 2012).

An intersectional examination of women and labor force is equally as applicable to the experience of Latinas. Given that Latinas come to the U.S. from such diverse cultural and immigration backgrounds, it makes sense, not only theoretically but methodologically, to separately study and compare the largest subgroups of Latinas (Tienda, Donato and Cordero-Guzmán 1992; Reskin and Cassirer 1996; Browne 1999; Corcoran, *et al.* 1999; Reskin 1999; Cintrón-Vélez 1999; Baker 1999). Labor force participation, rates of pay, educational attainment, and professional attainment across sub groups of Latinas vary (England, *et al*. 2004; Browne and Askew 2005; Read and Cohen 2007). For example, Torres, *et al*. (2007) found that Cubans tend to have higher levels of education, greater labor force participation, and higher family incomes than other Latino groups. In fact, the work experiences of Cuban women tend to more closely mirror those of white women than other Latinas. On the other hand, Puerto Rican women and Mexican women have work experiences more closely aligned with black women. For example, Corcoran *et al*. (1999) found that during the period between 1970 and 1990, both Mexican and Puerto Rican women experienced substantially lower wages and lower employment rates relative to their white counter parts.

The Latina/o population has grown exponentially over the last several decades. In 1980 the Latina/o population was 14.6 million. By 1990 the U.S. saw a 53 percent increase to 22.4 million Latina/os (United States Census 1990). The Latina/o population continued to grow and by 2000 Latina/os made up 13.2 percent of the U.S. population after a 57.9 percent increase to 35.3 million (Guzman 2001). In 2010 the Latina/o population reached an all-time high at 50.5 million and 16 percent of the total U.S. population (Ennis, Rios-Vargas, and Albert 2011). Between 2000 and 2010 the U.S. saw a 54 percent increase in its Mexican origin population to 31.8 million. The Puerto Rican population grew 36 percent to 4.6 million, and the Cuban population grew 44 percent to 1.8 million (Ennis, Rios-Vargas, and Albert 2011). Examining the growing populations of Mexican women, Puerto Rican women and Cuban women as separate categories for analysis is important for several reasons. First, it is well documented that the three groups have very diverse immigration histories to the U.S. that have impacted their educational, economic, and political experiences (Browne 1999, Tienda, *et al*. 1992). For example, Tienda *et al*. (1992) suggest that Puerto Rican women experienced disadvantage in the New York labor market due to unique historical circumstances and a decline in the demand for Puerto Rican labor as a result of deindustrialization. Second, research has found that demographic variations among Latinas have positive relationships with different measures of occupational mobility. Corcoran *et al*. (1999) noted that while Puerto Rican women experienced increases in wage and employment rates during the 1980s, Mexican women experienced a stagnation and decline during the same period. Third, current research suggests that differences in women's returns to employment may be more complex than simply a black, white, Latina triad. For example, Browne and

Askew (2005) found that Latinas are experiencing lower wages earnings compared to similarly educated black or white counterparts, suggesting the need to examine inter-group differences among Latinas. Other important considerations in Latina labor force outcomes include language, citizenship, and immigration status. For example, Toussaint-Comeau (2006) found that Latina/o immigrants who do not speak English have occupational scores lower than those of English speakers. Toussaint-Comeau's findings also suggest ethnic variations in the importance of language and labor force outcomes. She found that while language plays an important role in labor force outcomes for Puerto Ricans, language was not a significant predictor of occupational status among Mexican and Cuban workers. Redstone Akresh (2006) found that Latina/o immigrants who do speak English are less likely to experience downward mobility once arriving and working in the U.S.

Citizenship and immigration status have also been found to be a factor in the vulnerability of Latina/os to downward occupational mobility, both for undocumented immigrants and recent immigrants. Tienda and Singer (1995) argue that undocumented workers are more vulnerable to exploitation than their documented counter-parts. Cranford (2005) suggests that for undocumented Latina/os immigrant social networks can be exploited used as a tool for recruitment into low wage, labor intensive, even unpaid labor. Using IPUMs data Catanzarite (2000) found that the majority of recent Latina/o immigrants were employed as low-end service workers. Her findings also suggest that pay differentials are not just traceable to skill differentials, rather for new and recent immigrants, pay discrimination increased. Length of time in the U.S. has also been correlated with labor force outcomes. Toussaint – Comeau (2006) suggests that while

immigrants initially tend to experience occupational disadvantage, as their length of time in the U.S increases they experience upward mobility.

Considering the diverse labor force experiences of Latinas, it is also important to examine degrees of assimilation when applying an intersectional framework. There is a well-documented relationship between immigrant assimilation and labor force outcomes. For example, Hall and Farkas (2008) found age of arrival to be negatively associated with income gains and English language skills to be positively associated with income gains. Meaning, the younger an immigrant was when they arrived in the U.S. and the better their English language skills were, they were more likely to have a higher income. However, Hall and Farkas also found that immigrants continue to earn less, are less likely to be in supervisory positions, and received lower returns to education than their white counter parts. Similarly, Toussaint-Comeau (2006) found that length of time in the U.S. was positively associated with occupational status and year in the U.S. to be negatively associated with occupational status.

Sokoloff (1992) argues that both gender discrimination and racial discrimination are equally persistent and important through occupational structures. Therefore, the labor force experiences of black women are not the same as the labor force experiences of white women or black men. In the same vein, the work experiences of different Latina ethnicities likely vary. A cross-ethnic examination of Latina labor force participation, along with black women and white women, allows me a glimpse into the diverse experiences of women and labor force in the U.S.

The Double Bind: Women of Color in STEM

Perhaps one of the most relevant areas of study to make use of an intersectional framework is in examining the experiences of women of color in Science, Technology, Engineering, and Math (STEM) fields. STEM fields are historically white, male dominated. However, in recent years the U.S. government has implemented targeted initiates to increase the representation of women and minorities in STEM. This is important because increasing scientific advancement and innovation are in the nation's best interest, and women and minorities remain an underutilized resource (Ong, Wright, Espinosa, and Orfield 2011; Hanson 2013). STEM fields play an important role in maintaining national security and economic competitiveness of the U.S. (Ong, *et a*l 2011). Indeed, the Executive Office of the President of the United States suggests that increasing the number of women in STEM is important for the nation's ability to "out-build, out-educate, and out-innovate future competitors" (Executive Office of the President 2013).

In addition to increasing the nation's global competitiveness, increasing women and minorities in STEM has long term positive implications for social justice. As women's educational opportunities and labor force participation have increased, we have seen an increase in women in professional and STEM fields. For example, from 1958 to 2006 women's attainment of Ph.Ds. in engineering increased from 1% to 20% (Richmond, vanDellen and Wood 2011), and today women earn 41% of the Ph.Ds. in STEM fields today, and hold on 28% of the tenure track positions (whitehouse.gov 2013). Women's increased representation in fields such as STEM is important because, in the past these types of positions have been filled almost entirely by white men,

contributing to gender and race disparities in the labor force (Soo Oh and Lewis 2011). Today, women in STEM fields earn 33% more than women in non-STEM fields.

While targeted efforts to increase the representation of women and minorities in STEM fields has positive implications for both the nation and for the lives of individuals, no focus has been placed on specifically increasing women of color in STEM fields. Ong *et al* (2011) argue that the extreme underrepresentation of women of color in STEM is a result of systematically under educating and underutilizing women of color that is intimately connected to historical and contemporary issues of social justice. In their 1976 report *The Double Bind: The Problem of Being a Minority Woman in Science*, Malcolm, Hall, and Brown highlighted the unique challenges that women of color faced at the intersection or race and gender in the sciences. However, several decades have gone by and national initiatives have yet to address how the simultaneous experiences of racism and sexism systematically influence the representation of women of color in STEM. In fact, when reviewing forty years' worth of scholarship on women of color in STEM, Ong *et al* (2011) concludes that there are research gaps that span discipline, races/ethnicities, and life stages calling highlighting a need for research that offers theoretical and conceptual frameworks that treat women of color in STEM as a stand-alone population.

Labor Force Trends

Women's participation in the labor market has steadily increased since the early 1800s (England and Browne 1992). With the exception of the period immediately following WWII when many women who had taken war time jobs resigned from their temporary positions, the U.S. has seen a remarkable increase in the rate of women working outside the home for pay. In response to the increased labor market demand for

women workers and higher wages, women's participation in the labor market grew from 19% to 56% between 1890 and 1987 (England and Browne 1992). During the 1970s and 1980s, the U.S. saw an unparalleled growth in women's participation, even in traditionally male occupations (Roos and Reskin 1992). Since the 1980s, the state of women at work has once again changed. Although women still participate heavily in the labor force, the economic and professional attainment returns experienced by women of color have declined. Although labor force participation and educational attainment have improved across all racial groups (Sokoloff 1992; England , *et al*. 2004), wages and access to professional jobs have not (Newsome and Dodoo 2002; Wilson 2009; Dozier 2010). From 1970 to 2000, black women's relative earnings declined (Newsome and Dodoo; 2002 Dozier 2010). Additionally, black women and Latinas are experiencing higher rates of downward mobility than their white counterparts. Women of color are increasingly being restricted from white-collar jobs while experiencing decreases in human capital and socio-economic returns (Wilson 2009).

Wages. By the 1980s, the overall black-white wage gap for women had narrowed to the extent that some scholars suggested that, with adjustments, black women were out-earning their white counterparts (Cunningham and Zalokar 1992; Pettit and Ewert 2009). Black women and white women both experienced median wage gains through the 1990s and early 2000s. However, relative to white women, black women's incomes declined (Dozier 2010). The black-white wage gap peaked in mid the 1990s fluctuating between 12% and 15% and tripled by 2005 (Pettit and Ewert 2009; Bound and Dresser 1999; Kim 2002; Newsome and Dodoo 2002; Alon and Tienda 2005; Pettit and Ewert 2009).

Far less research has examined occupational mobility patterns of Latina subgroups. However, the research available does suggest variations across ethnicity. For example, Corcoran *et al*. (1999) found that Puerto Rican women's wages were only slightly less than those of white women during the 1980s, while Mexican women had significantly lower wages than their white counterparts. Browne (1999) found that by 1996, among women employed full time, white women experienced the highest earnings, followed by Cuban and Puerto Rican women, with black and Mexican women earning the least. While little research has examined wage mobility among Latina subgroups in the 2000s, some research suggests that Latinas as a whole have experienced a wage gap relative to white women. For example, Browne and Askew (2005) found that Latinas began the 1990s with parity in earnings with white women, but by the early 2000s earned about 28% less than white women, with the gap being the largest among the well-educated. In fact, since the 1980s, the U.S. has experienced a period of rapid income inequality growth in general compared to previous periods (Morris and Western 1999; Lindert 2000; Saez 2010; McCall and Percheski 2010). Scholars have also considered the relationship between nativity and wage. For example, Catanzarite (2000) found that relative to native born whites, blacks, and Latina/os with similar labor market characteristics, Latina/o immigrant workers experienced a worsening position. Length of time in the U.S. was also found to be related to wages for undocumented workers. Tienda and Singer (1995) found that earlier migrants earned higher wages than their counterparts that arrived after 1980.

The recent recession has had deep effects on women's economic security. Women in general experienced greater increases in poverty compared to their male counterparts

(Jacobsen 2012). Indeed, white women, black women, and Latinas experienced higher poverty rates than did the white population, black population and Latina/o population as a whole. However, the majority of the literature available on the effects of the recession focuses on unemployment rates across gender. There is little literature available on women's poverty levels at the intersection of race/ethnicity and gender, and women's income at the intersection of race/ethnicity and gender.

Occupation. While the majority of positions held by black women were still low-skill blue collar jobs, the proportion of black women in professional positions (i.e. doctors, lawyers, and engineers) increased dramatically by 1980 (Cunningham and Zalokar 1992). Black women experienced a larger growth in professional positions than in labor market participation as a whole, largely explained by the low rates of black women in professional positions prior to the 1960s (Sokoloff 1992). Since the 1980s, however, black women have not experienced an increase in professional jobs compared to white women (Pettit and Ewert 2009). Instead, black women have experienced an increase in hourly wage jobs and a decrease in public sector jobs (Dozier 2010).

Latinas have also experienced lower rates of professional attainment compared to white women. For example, Reskin (1999) found that in 1990 when the rate of white women in managerial positions ranged from 12% to 14% (varying by ethnicity), Mexican women held managerial positions at 6.7%, Puerto Rican women 9% and Cuban women 11%. Black women in Reskin's study held managerial positions at a rate of 7.2%. Wilson (2009) suggests that between 1998 and 2005 the restructuring of the U.S economy resulted in racialized downward mobility in white collar employment with

30.2% of black women, 23.1% of Latina women, and 19.2% of white women experiencing downward mobility.

Similarly, women of color experience less representation in STEM fields than their white counter parts. While women have experienced increased participation in STEM fields over the last several decades, women as a whole, but especially women of color remain underrepresented (NSF, 2014). Research suggests that while women of color are indeed obtaining STEM degrees, they remain underrepresented in the STEM workforce. For example, Hanson (2013) found that while Latinas have the same odds as white women in earning a STEM degree, and higher odds than their Black counter parts, Latinas are indeed significantly less likely than white women to work in a STEM fields, having the same odds as Black women.

Low-skill immigrant Latinas may face even more barriers to access to professional and STEM positions. While low-skill immigrants have lower rates of high school graduation, the unemployment rate of low-skill immigrants is lower than that of low-skill native born workers. Enchautegui (1998) and Holzer (1988) suggest that lower unemployment for immigrants is related to ineligibility for federal aid programs and stronger employment networks than native workers. However, Cranford (1998 and 2005) suggests that immigrant social networks can become exploitive, facilitating occupational restructuring, concentrating immigrant workers in low-wage, labor-intensive industries. She argues that employers use class, race, gender, and citizenship inequalities to guarantee low-wages, and unorganized labor in the janitorial labor force. Contrasting popular sociological discussion about the positive implications of immigrant social networks, Cranford highlights how social networking has been used to establish the

janitorial occupation as a Latino immigrant field that recruits co-ethnic workers concentrating them in low-wage, labor-intensive work where they have difficulty exercising their rights. Similarly, Catansarite (2000) suggests that immigrant workers are severely over-represented in 'brown collar' occupations that are labor-intensive, low-skill jobs. She suggests that ethnic/immigrant networks channel co-ethnics into the field while at the same time labels emerge distinguishing the field as a "Latino immigrant field".

An examination of employment trends over the last three decades demonstrates that there are racial and ethnic variations in labor market participation, educational attainment, and wage returns to employment. In this project I build on previous research by focusing on women in professional fields and STEM fields. In the next section, I review the most common explanations for women's racial/ethnic differences in occupational mobility.

Explanations for Racial Differences in Labor Market Outcomes

Various explanations have been offered for why women of color have not or are no longer seeing growing returns for their participation in the labor force, including deindustrialization in the U.S. labor market (Browne 1999), changes to welfare and affirmative action policies (Newsome and Dodoo 2002; Neal 2004), increased immigrant presence in the low skill labor market (Tienda, *et al*. 1992; Browne and Askew 2005), and discrimination (Tienda *et al*. 1992).

Labor Market Restructuring. One of the most common explanations for the gap in occupational outcomes among workers of color and their white counterparts is the restructuring of the United States labor market from a manufacturing industry to a service industry (Browne 1997, 2000; McCall 2001; Newsome and DoDoo 2002; Dickerson

2002; Pettit and Ewert 2009). From the 1970s to the mid-1990s there was a decrease in manufacturing jobs of about 50 percent, while at the same time the service industry grew (Dickerson 2002). Deindustrialization itself is characterized as a shift in the labor market from manufacturing jobs to service industry jobs in which a decline in the availability of low skill jobs in the central city (spatial mismatch thesis) was accompanied by an increase in demand for high-skill workers (skill mismatch thesis). The spatial mismatch thesis argues that residents of urban areas were especially impacted by deindustrialization because, as manufacturing jobs moved to suburban areas or overseas, workers were forced to relocate as well. As workers relocated out of urban areas, the demand for services was reduced, thereby reducing the demand for low skilled workers (Browne 1999). According to the skills mismatch thesis there has been a shift in the level of skills required for what have been traditionally "low-skill" jobs. As the level of skills required for low-skill jobs has increased, opportunities for the lowest skilled workers have decreased (Browne 1999). Though deindustrialization did not happen evenly across the United States, each region did see service jobs become a greater share of total employment, and manufacturing jobs become a smaller share of total employment (Browne 1999). Demographer Daniel Lichter (1988) argues that spatial mismatch only serves to aggravate racialized unemployment and income gaps in the urban setting. He suggests that while urban centers have seen growth in information processing jobs, they have not experienced a growth in service jobs that match losses in manufacturing jobs. While women in general were less likely to be adversely affected by deindustrialization than men, this does not hold true for all groups of women. For example, Browne (2000)

found that young black women, especially single heads of household, suffered the most from deindustrialization.

Policy Changes and Enforcement. Policy changes in the 1980s and 1990s have also been offered as a partial explanation for the downturn in the occupational mobility of women of color (Newsome and Dodoo 2002; Neal 2004). For example, key policy changes of the Reagan, Bush, and Clinton administrations have been cited as negatively influencing the earnings of black women. First, federal subsidies for social service programs were reduced, decreasing access to safety net programs for low income earners and the unemployed. Second, many of the grant funded jobs that supported social service programs were eliminated, often times displacing middle class black employees and decreasing access to safety net programs for low income earners (Newsome and Dodoo 2002). Reduction in the enforcement of equity based policies, such as Affirmative Action, has also been cited as a partial explanation for decreased returns to work for women of color (Pettit and Ewert 2009).

Current research suggests that changes to the U.S. welfare system have contributed to the widening of the wage gap between black women, Latinas and white women (Neal 2004; Browne and Askew 2005). In 1996, Aid to Families with Dependent Children (AFDC) was eliminated and replaced with Temporary Assistance for Needy Families (TANF). Though political leaders and mainstream media have claimed that the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) has successfully moved 6 million welfare recipients off of welfare rosters (Marchevsky and Theoharis 2008), social science critics have argued that term limits, incentives for states to decrease their welfare rosters, and the "welfare to work" program component of TANF

pushed many low-skilled women to leave welfare and enter the low wage labor market (Jennings and Santiago 2004). Indeed, the 'any job is a good job' sentiment of the current welfare system benefits employers rather than the participants of the welfare- to-work programs; TANF participants are required to be engaged in employment by a deadline set by each state or they face sanctioning. This particular model requires the participant to find a job based on a deadline rather than negotiations with a prospective employer. Employers are able to offer any wages they wish, knowing that the participant is required to find employment (Monnat and Bunyan 2008). Further, there is a growing body of literature that suggests that women of color experience disproportionate sanctioning of their welfare benefits. For example, Monnat (2010) found that black women and Latinas are more likely to experience sanctioning than their white counterparts. She also found that, while black women experience some relief from sanctioning in counties with higher percentages of black residents, the opposite is true for Latinas. Ethnographic data suggest that welfare sanctioning is both highly racialized and discriminatory based on immigration status. For example, Marchevsky and Theoharis (2008) found that Mexican immigrants were experiencing illegal sanctioning of their welfare benefits, that race and immigration status structured both job opportunities and social service benefits available, and that soft skills and vocational training were prioritized over real education. Welfare and welfare reform has a history of being highly racialized (Quadagno 1994). Research has consistently found race to be a predictor of welfare outcomes, and black women and Latinas face racialized stereotypes or ideologies from both case workers and employers (Neaubeck and Cazenave 2001; Schram, Soss and Fording 2003; Monnat 2010).

Findings have been somewhat mixed on the role that Affirmative Action has played on decreasing the black-white wage gap, and again on the role that the reduction of enforcement has played on the re-widening of the gap. Leonard (1996) did not find consistent success in the government's antidiscrimination efforts, arguing that the government cannot correct for differences in employment due to discrimination, and to believe so is setting equity based programs up for failure. Newsome and Dodoo (2002) found that while there were fewer black women in public sector employment post 1980s, those that were received higher returns than their white counterparts in the private sector.

There is more direct support for the positive role of equity based policy. Smith (1993) found that Affirmative Action is associated with a decrease in the post-Civil Rights Era black-white wage gap. Fuso (1992, 1995) argues that Affirmative Action was the primary mechanism for the increase in black women's occupational mobility in that time period. In the same vein, Cancio, Evans, and Maume (1996) suggest that the retreat from equity based policies in the 1980s directly contributed to the reversal in the trend toward black-white wage parity. Similarly, Burbridge (1994) and Collins (1997) argue that black women's over-representation in third-sector work made them the most vulnerable to the reduction of enforcement of Affirmative Action policy.

Demographic Shifts in the Low Skill Labor Force. While the deindustrialization and policy based explanations apply more to the black-white wage gap, research examining Latina work experiences suggest that demographic changes have influenced Latina occupational mobility. Over the last decade, growth in the Latina/o population has accounted for more than half of the total U.S. population growth (Passel, Cohn and Lopez 2011). Hispanic immigrants typically have lower levels of education than do U.S. born

workers (England *et al*. 2004; Lichter and Johnson 2009) and fewer skills that are job related (Lichter and Johnson 2009). However, Mexican, Puerto Rican and Cuban immigrants experience different push-pull factors that have created sub groups with differing economic characteristics. Mexican and Puerto Rican workers are often represented in unskilled blue-collar work. In contrast, Cuban workers have received a more favorable welcome from the U.S., relocation assistance, and benefit from an ethnic enclave built on entrepreneurial skills that provide other Cuban immigrants economic opportunities (Torres, *et al*. 2007; Kahn and Whittington 1996).

Discrimination. While many of the explanations for racial variations in women's occupational mobility emphasize macro-level factors such as labor force restructuring, policy change, and demographic shifts, there is a segment of the literature that remains focused on the individual experience of discrimination (Kirschenman and Neckerman 1991; Kennelly 1999; Moss and Tilly 2001; Thomas 2003; Timberlake and Estes 2007; Pager, Bonikowski, and Western 2009; Ortiz and Roscigno 2009). Indeed, much of the welfare literature highlights the controlling images that follow women of color into the workforce impacting their employment and earning opportunities. Pager *et al*. (2009) suggest that, though much of the literature considers the role of discrimination at either the point of hire or at the time of wage-setting decision, in practice, discrimination operates at multiple points across the employment relationship. Indeed, Ortiz and Roscigno (2009) found that discrimination operates yet at a third level, finding high instances of race-based promotion discrimination for black women. Thomas (2003) suggests that an employer's racialized discrimination may vary across skill levels, finding

that as the level of skill required increases, employers are less likely to make hiring decisions based on race and more likely to use qualifiers such as education.

A subset of the literature also considers more subtle forms of discrimination. For example, Segura (1989) found that Chicana and Mexicana workers experienced isolation, alienation, and rejection from co-workers and supervisors because of their unfamiliarity with white-collar work culture. Respondents to her study intentionally cultivated supervisory support after finding its lack to be the biggest obstacle to occupational mobility.

Above I have discussed the major trends in women's occupational mobility and income and offered micro and macro level explanations for racial and ethnic variations. Below I discuss my theoretical framework.

CHAPTER 3: THEORETICAL FRAMEWORK

In spite of the gaps in the literature highlighted above, there is a consensus that women do indeed experience variations in labor market outcomes across different and racial and ethnic groups. Sociological theory is particularly well equipped to help explain these variations because of its emphasis on the historical, political, and demographic context. Below I highlight two theories that, when combined with an intersectional framework, can be useful in understanding women's racial and ethnic variations in the labor market.

Both Bonilla-Silva's Tri-Racialization Theory (2006) and Alba's Non-Zero Sum Mobility Theory (2009) recognize the historical context of race and ethnicity. Bonilla-Silva suggests that the U.S. is witnessing a departure from its historic bi-racial system of black and non-black and moving into a period with a three tiered racial hierarchy. Alba's theory also recognizes the historical context, suggesting that the U.S. can look forward to a future where the baby boomers will retire resulting in a smaller job pool of white workers, thus creating access for minority workers.

At the same time that both of these theories recognize the historical context of a social phenomenon, they also emphasize the politics of power. Bonilla-Silva suggests that a third 'buffer' group has been created out of light skinned minorities and used to cement darker skin minorities on the bottom of the social hierarchy. Alba's theory also includes an emphasis on the politics of power, but in a different context. Alba argues that white workers will feel less threat when there is an abundance of jobs. Additionally, Alba's theory takes into account how demographic changes in the labor force will impact labor force outcomes for different groups. His theory is centered on the projected

numbers of baby boomers retiring, anticipating that the sheer numbers will leave gaping holes in the labor force.

Integrating Intersectionality and Race Theory

While both theories offer us a multi-facetted way to examine social phenomena, neither Bonilla-Silva's theory nor Alba's theory are enough to adequately examine the labor force outcomes of women across race and ethnicity. This is where an intersectional framework becomes important. In the following section I offer a discussion of both the tri-racialization theory and the non-zero sum mobility theory within the context of intersectionality.

My literature review offered a discussion of the trends and explanations for racial differences in women's labor market experiences. In an era of color-blind racism, racialized systems persist without individuals in the system having to be overtly racist (Bonilla-Silva 2006). In fact, racist ideologies continue to portray both black women and Latinas negatively. Politics and the media depict black women as lazy, unwed mothers on welfare (Collins 1990; Gilens 1999) and Latinas as overly reproductive and reliant in their male counterparts (Zinn 1982).

Theory of Tri-Racialization

Bonilla-Silva (2004) suggests that the U.S. is moving from a dual racial system (white v. non-white) to a more complex, tri-racial system (Figure 1). The tri-racial system theory illustrates how the U.S's racial system is growing more and more complex, while at the same time maintaining racial hierarchies. In the new tri-racial system, whites will remain the dominant group in the social, political and economic hierarchy. Following the 'white' group in the hierarchy are light skinned Latinos and other racial/ethnic groups

who are treated as “honorary whites” (i.e. Cubans, assimilated Mexicans). These groups buffer the upward mobility of other people of color. In the collective bottom of the social hierarchy falls the non-white group, the “collective black” (i.e. native born blacks, unassimilated Mexicans, Puerto Ricans). In the tri-racial system, race conflict will be buffered by the intermediate group, color graduations will become more salient factors of stratification, and Americans will claim that we have moved beyond race and are “all just Americans”.

Once elements of Bonilla-Silva’s theory are combined with an intersectional framework, his argument that the U.S. is becoming tri-racialized can be usefully applied to the explanations for the trends in women’s occupational mobility across race and ethnicity. Using Bonilla-Silva’s theory in an intersectional framework is important because women’s experiences in the labor market are distinctly different from men. For example, women have historically made up a much smaller proportion of the labor force than men (Michaelides and Mueser 2012), have been underrepresented in professional fields while being overrepresented in feminized fields (England 1979; Sololoff 1992), have had their labor force participation intimately tied to child rearing (Browne 1999), and faced the preverbal glass ceiling. Bonilla-Silva’s theory applied to women’s trends in occupational mobility would suggest that in spite of a strong labor market, among women, white women will remain the dominant group in labor force participation, educational attainment, wages and professional attainment, with the collective black remaining at the bottom and the two groups buffered by light skinned, assimilated Latinas. Current literature supports this theory. In terms of white- collar workers, Wilson (2009) found racial stratification in downward mobility in which Latinas are fixed as a

buffer group between white women at the top and black women at the bottom. Similarly, Browne and Askew (2005) found that black women were not experiencing the same returns to education as white women or Latinas. Bonilla-Silva's theory may also explain the difference in occupational mobility across the different ethnic groups of Latinas and answer the recent question as to why, as a population, college educated Latinas are not seeing the same returns to education as white women (Browne and Askew 2005). Bonilla-Silva suggests that certain groups of light skinned Latina/os, for example, will be included in the group of honorary whites. For this reason, and in addition to the benefits Cubans experience related to their immigration history, we should expect to see Cubans fair better across various measures of occupational mobility. In contrast, we should expect to see Mexicans and Puerto Ricans fairing worse in occupation and income measures. Bonilla-Silva's theory places a focus on two areas related to race and ethnicity: skin tone and assimilation. While there are data sets with good measures of assimilation readily available, skin tone is much more difficult to measure. Bonilla-Silva himself admits that it is impossible to adequately test his theory that lighter skinned members of a given ethnicity will occupy a higher place in the social hierarchy than darker skinned members of an ethnicity. In fact, Hunter (2002) argues that the most accurate measures of skin tone for blacks and Latina/os can be found in the 1980 National Survey of Black Americans and the 1980 National Survey of Chicanos. These data are three decades old. Considering drastic changes to the racial and ethnic makeup of this country in the last several decades, we need current data to test contemporary skin tone theories. We can, however, test across various measures of assimilation, for example, citizenship status, age at arrival in the U.S., length of time in the U.S, and English language proficiency.

Figure 3.1: Tri-racial System in the U.S. (adapted from Bonilla-Silva 2004)
"Whites" Whites Assimilated white Latina/os
"Honorary Whites" Light-skinned Latina/os (Cubans, assimilated Mexicans)
"Collective Black" Dark Skinned Latina/os (i.e. unassimilated Mexicans and Puerto Ricans) Blacks

Theory Non-Zero Sum Mobility

Racial threat theories suggest that racial tensions exist because of one group's perceived threats to another group's resources (Blumer 1958; Blalock 1967; Bonacich 1972). For example, Blumer (1958) suggested that racial tension exist as a sense of group belonging, rather than individual responses to members of another race. He argued that racial prejudices are fundamentally a collective process. Blalock (1967) argued that population size matters. He suggested that as the size of a minority population increases, so does the majority group's perception of competition for resources. Similarly, Bonacich (1972) posited that an important source of tension between racial groups is differentials in the labor market. She argues that ethnic antagonism germinates in the labor market when there are at least two groups whose price for labor differs for the same work or would differ if they did the same work. Alba's theory of non-zero sum mobility is a complement to racial threat theories, suggesting that as the dominant group feels less group threat to resources, labor market opportunities for minority workers will increase.

Alba's (2009) non-zero sum mobility theory suggests that in a strong labor market, people of color are able to access better jobs without threatening the mobility of

the dominant group (e.g. whites). Non-zero sum is in contrast to zero sum, which exists when the gains of one group come at the cost of another group. Alba suggests that demographic changes in the labor market, through the retirement of large numbers of white baby boomers, will increase job access to people of color without threatening the positions of white workers. As baby boomers retire, the need for skilled workers to fill the vacant positions will increase. While it is white women who will be the primary beneficiaries of these job openings, they will not be a large enough group alone to satisfy the demand for highly educated workers. If the theory of non-zero sum mobility holds, in a strong labor market, all racial and ethnic groups should experience absolute increases in labor market participation and wages. Alba's theory would suggest the converse during weak economic times, that workers of color would experience declines relative to white labor market experiences. However, while all groups may indeed experience absolute mobility, racial gaps may still exist, suggesting support for the tri-racialization theory.

Alba maintains that evidence of non-zero sum mobility can be seen in the transformation of the higher education system from the 1940s to the 1970s that dramatically increased in size, allowing a much larger fraction of the college-bound age group to access education than ever before. Alba notes that occupational mobility increased at the same time that access to higher education increased. Yet similar to Bonilla-Silva's theory, the theory of non-zero sum mobility is not enough on its own to explain the labor force experiences of women. Women face different barriers to the labor market than their male counter parts. For example, women are likely to move in and out of the labor force or engage in part-time work to accommodate caring for their children and more likely to be employed in clerical positions (Browne 1999).

There is evidence in support of Alba's theory as well. Black women experienced increases in educational levels in the 1980s and the 1990s (Newsome and Dodoo 2002) and Pettit and Ewert (2009) point out that black women experienced strong employment gains through the early 2000s when the U.S. was experiencing a booming economy and then a growth in racial inequality in employment in the latter part of the decade when the economy weakened. As previous literature suggests, there are racial and ethnic variations in occupational mobility. In order to further explore the racial and ethnic variations I ask the following research questions.

As the review above suggests, there are racial and ethnic variations in women's occupational mobility. In order to further explore these variations, I test the following research questions.

Research Question and Hypotheses

Did Black, Mexican, Puerto Rican, and Cuban women experience increased representation in professional fields and STEM fields from 2001 to 2011? Did median salary and wage income change in professional fields and STEM fields with increased representation of women of color? If there were indeed changes in the representation of women of color in professional fields and STEM fields, and associated salary and wage income changes, how did the changes compare to those experienced by White women (absolute vs. relative change)?

Hypothesis 1: Odds of Being in STEM/Professional Fields

Bonilla-Silva:

1a: Relative to white women, the 'collective black' (i.e. Black and Mexican women) will have lower odds of being in a STEM or professional field.

1b: Relative to the 'collective black' the buffer group (Puerto Rican and Cuban women) will have lower higher odds of being in a STEM or professional field.

1c. Relative to native born women, the less assimilated a woman is, the lower odds she will have of being in a STEM field or professional field.

Alba:

1d: From 2001 to 2007 the 'collective black' and the 'buffer group' will have increased odds of being in STEM and professional fields than they will in from 2008 to 2011.

1e. Relative to native born women, the less assimilated a woman is, the lower odds she will have of being in a STEM field or professional field from 2008 to 2011.

Hypothesis 2: Association between Racial/Ethnic Representation and Income

Bonilla-Silva:

2a: As the number of women of color increases in STEM and professional fields, the adjusted wage and salary income decreases.

2b: Relative to the buffer group, the 'collective black' will experience deeper wage decreases.

2c: Relative to the most assimilated women, the least assimilated women will experience deeper wage decreases.

Alba:

2d: From 2001 to 2007 the ‘collective black’ and the ‘buffer group’ will experience a decreased wage gap with white women.

2e: From 2008 to 2011 the ‘collective black’ and the ‘buffer group’ will experience an increased wage gap with white women.

2f: From 2001 to 2007 all women will experience wage increases, regardless of assimilation status.

CHAPTER 4: METHODOLOGY

Data

My data for this project are from the 2001-2011 Integrated Public Use Microdata Series (IPUMS-USA). IPUMS data are integrated over time and across samples, drawing on each surveying census from 1850 to 2000 and the American Community Survey from 2001 to 2011. IPUMS data are ideal for this project for two reasons. First, IPUMS makes available demographic, income, and occupation variables. And second, the IPUMS data set has several assimilation variables, making it possible for me to best test Bonilla-Silva's concept of an assimilated 'honorary white' buffer group. For the purpose of this study I have extracted individual level data from the 2001 to 2011 American Community Survey 1% samples. My sample is restricted to women between the ages of 18 and 65 who are not in the military, who have completed the 9^{th} grade or higher, are in the labor force (either working or actively looking for work), who worked in the last five years before they were surveyed, and who worked at least one hour in the twelve months before they were surveyed. My final weighted sample size is 5,318,181.

Dependent Variables. My dependent variables are occupation and salary and wage income. Because I am interested in upward mobility, specifically, which racial and ethnic groups are experiencing increased representation in professional fields and STEM fields, and how wage and salary income is associated with given racial/ethnic representation; I coded my occupation variable into three main dummy variables: STEM fields (STEM = 1), professional fields (professional fields =1), and trade and service work (trade/service work = 1). Of my sample, 15.53% work in STEM fields, 23.65% work in professional fields and 60.82% work in trade and service fields (see Table 4.1).

It is important to note that there is not a consensus across stake holders on what constitutes a STEM field. For this project I cross referenced the IPUMS occupational categories with the Department of Homeland Security's official STEM degree program list (www.ice.gov). I have also included STEM skilled occupations. Because, while the focus on STEM workers has been placed on those who have a bachelor's degree or higher in a STEM field, about half of STEM positions are filled by workers with less than a bachelor's degree with an average income of about $53,000 (Rothwell 2013). I have also included professions such as medical doctors and psychiatrists who are not technically considered STEM workers but have a high degree of STEM knowledge and higher than average incomes. The IPUMS reports occupational categories from the census occupational standings that are organized in groups roughly by descending socioeconomic status. However, the census categories were not standardized across all 11 years of my data. There were two different occupation codebooks that I had to cross reference prior to collapsing occupation into my three occupational: 2001 and 2002, and 2003 through 2011.

Table 4.1: Percent of Sample in Occupational Categories

STEM	15.53
Professional	23.65
Trade/Service	60.82
Total	100.00

Source: IPUMS USA Current Population Survey, 2001 to 2011
N = 5,318,181

Table 4.2 shows the percent of each racial and ethnic group that works in STEM fields, professional occupations, and trade and service fields by year. Chinese and other Asian Pacific Islander women have the highest rates of representation in the STEM

fields. About a quarter of the Chinese and other Asian Pacific Islander women in my sample work in STEM. On average, 15 to 17 percent of White, black and Japanese women work in STEM fields, and on average, less than 13 percent of Puerto Rican, Mexican, Puerto Rican, and Cuban women work in STEM fields.

Chinese and Japanese women have the highest rates of representation in professional fields, at about 30 percent. White women and Cuban women work in professional fields at the rate of 25 percent and 23 percent. On average about 19 and 20 percent of Black, other Asian Pacific Islanders, and Puerto Rican women work in professional fields. And only about 15 percent of Mexican women work in professional fields.

Table 4.2: Percent of Each Race and Ethncity in Occupations by Year

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Science, Technology, Engineering and Math											
White	14.42	14.71	14.83	14.69	14.99	15.00	15.19	15.41	15.80	15.99	16.45
Black	16.16	15.92	17.17	16.58	17.14	16.95	17.32	17.94	17.89	17.93	18.65
Chinese	24.35	25.57	24.42	23.23	23.5	23.80	23.18	23.84	23.32	24.38	24.17
Japanese	13.38	15.04	14.05	12.81	13.92	14.59	15.37	17.98	14.66	16.00	16.44
Other API (including South East Asian and Filipina)	24.72	24.44	23.93	24.56	24.87	24.44	24.59	25.61	27.07	26.26	26.2
Mexican	9.64	8.43	8.80	9.71	8.83	9.33	9.12	9.50	9.87	10.26	10.47
Puerto Rican	12.50	13.37	11.69	12.13	12.88	12.48	12.40	13.63	13.52	13.99	13.62
Cuban	8.98	11.54	9.41	12.46	11.07	12.44	12.32	12.06	13.37	12.66	14.10
Professional Occupations											
White	28.27	28.55	23.89	24.1	24.07	24.14	24.80	25.05	25.21	25.70	25.59
Black	21.38	20.57	18.26	18.31	17.62	17.99	18.34	18.66	19.15	19.50	19.03
Chinese	29.41	32.89	25.75	27.48	28.39	28.94	28.05	29.03	29.79	28.50	29.70
Japanese	3.64	35.56	28.85	28.60	29.28	30.00	30.34	28.75	32.84	29.33	32.85
Other API (including South East Asian and Filipina)	19.46	22.47	17.89	17.86	18.74	18.37	19.13	19.38	19.67	19.87	20.06
Mexican	18.06	19.38	13.74	15.07	13.85	13.55	14.66	14.90	14.75	14.66	15.19
Puerto Rican	23.53	24.02	17.91	19.78	19.30	18.24	19.23	19.86	19.79	19.18	18.84
Cuban	26.48	28.73	26.11	20.99	23.97	21.90	22.46	23.67	22.53	22.00	20.84
Service and Trade Occupations											
White	57.31	56.74	61.28	61.21	60.94	60.86	60.01	59.54	59.0	58.31	57.96
Black	62.52	63.48	64.57	65.11	65.24	65.06	64.34	63.4	62.96	62.57	62.32
Chinese	46.24	41.54	49.83	49.29	48.11	47.86	48.77	47.13	46.89	47.12	46.13
Japanese	50.31	49.40	54.10	48.59	56.80	55.41	54.28	53.27	52.5	54.67	50.72
Other API (including South East Asian and Filipina)	55.83	53.09	58.18	57.58	56.40	57.19	56.28	55.01	53.26	53.86	53.74
Mexican	72.30	72.19	77.46	75.22	77.32	77.12	76.22	75.60	75.38	75.08	74.34
Puerto Rican	63.98	62.61	70.40	68.09	67.82	69.28	68.37	66.51	66.69	66.82	67.65
Cuban	64.54	59.73	64.48	65.55	64.96	65.65	65.22	64.26	64.10	65.67	65.06
N=	455,676	461,060	463,484	467,179	472,667	489,490	492,727	509,672	505,550	500,188	500,487

Source: IPUMS USA Current Population Survey, 2001 to 2011
N = 5,318,181

Table 4.3 shows STEM fields, professional occupations, and service/trade fields by racial and ethnic group. Over 70 percent of STEM workers and service/trade workers are White women, and almost 80 percent of professional workers are white. Black women make up about 15 percent of the STEM workers, just fewer than 14 percent of the service/trade workers, and about 10 percent of the professional workers. Chinese women make up less than two percent of STEM workers, just over one percent of professional workers, and less than one percent of trade/service workers. Japanese and Cuban women each make up less than one percent of the three occupational categories. Other Asian Pacific Islander women make up about five percent of STEM workers and about 3 percent of professional and trade/service workers. Mexican women make up about four percent of STEM workers and professional workers, and about twice as many trace/service workers, at just fewer than eight percent. On average, Puerto Rican women are about one percent of STEM workers and trade/service workers, and about two and a half percent of professional workers.

Table 4.3: Percent of Occupation by Race and Ethncity

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Science, Technology, Engineering and Math											
White	74.20	74.35	73.81	73.21	73.09	72.48	72.45	71.40	71.50	70.45	70.21
Black	15.57	14.24	14.84	14.6	14.9	14.81	14.9	15.4	14.86	14.83	15.18
Chinese	1.60	1.67	1.60	1.66	1.62	1.74	1.63	1.62	1.65	1.820	1.800
Japanese	0.27	0.32	0.30	0.26	0.29	0.28	0.29	0.30	0.24	0.29	0.28
Other API (including South East Asian and Filipina)	4.65	4.92	4.99	5.09	5.31	5.49	5.50	5.72	5.94	6.23	6.16
Mexican	3.40	3.09	3.28	3.75	3.44	3.79	3.73	4.10	4.28	4.74	4.89
Puerto Rican	1.02	1.05	0.91	1.04	1.00	1.01	1.00	1.07	1.10	1.19	1.16
Cuban	0.28	0.36	0.27	0.40	0.34	0.40	0.41	0.39	0.43	0.45	0.50
Professional Occupations											
White	80.74	80.19	80.35	79.72	79.9	79.46	79.24	78.62	78.32	77.61	77.22
Black	10.68	10.29	10.66	10.70	10.43	10.70	10.63	10.85	10.91	11.05	10.81
Chinese	1.08	1.20	1.14	1.30	1.33	1.41	1.32	1.34	1.45	1.46	1.56
Japanese	0.41	0.42	0.41	0.38	0.42	0.39	0.38	0.32	0.38	0.36	0.40
Other API (including South East Asian and Filipina)	2.03	2.51	2.52	2.46	2.72	2.81	2.86	2.93	2.96	3.23	3.33
Mexican	3.53	3.94	3.46	3.87	3.68	3.74	4.02	4.36	4.39	4.65	5.02
Puerto Rican	1.07	1.04	0.94	1.13	1.02	18.24	1.04	1.06	1.11	1.12	1.13
Cuban	0.47	0.50	0.51	0.45	0.51	0.48	0.50	0.52	0.49	0.53	0.52
Service and Trade Occupations											
White	73.98	73.33	73.74	73.32	72.86	72.20	71.95	71.36	71.14	69.69	69.26
Black	14.15	14.49	13.49	13.78	13.91	13.94	14.0	14.07	13.93	14.04	14.03
Chinese	0.76	0.69	0.79	0.85	0.81	0.86	0.86	0.83	0.89	0.95	0.96
Japanese	0.25	0.27	0.29	0.28	0.29	0.26	0.26	0.23	0.23	0.29	0.24
Other API (including South East Asian and Filipina)	2.64	2.73	2.93	2.87	2.95	3.15	3.16	3.18	3.11	3.47	3.54
Mexican	6.39	6.76	6.97	6.99	7.39	7.68	7.85	8.44	.8.7	9.42	9.72
Puerto Rican	1.31	1.25	1.33	1.40	1.29	1.38	1.39	1.36	1.45	1.54	1.61
Cuban	0.51	0.47	0.45	0.51	0.50	0.52	0.54	0.54	0.55	0.63	0.64
N=	455,676	461,060	463,484	467,179	472,667	489,490	492,727	509,672	505,550	500,188	500,487

Source: IPUMS USA Current Population Survey, 2001 to 2011
N = 5,318,181

Table 4.4: Percent of Each Race and Ethncity in Occupations, Pre & During/Post Recession

	Pre (2001 to 2008)	Post (2009 to 2011)
Science, Technology, Engineering and Math		
White	14.84	15.90
Black	16.76	18.10
Chinese	23.96	23.94
Japanese	14.16	16.26
Other API (including South East Asian and Filipina)	24.51	26.28
Mexican	9.12	10.04
Puerto Rican	12.49	13.69
Cuban	11.25	13.07
Professional Occupations		
White	25.39	25.38
Black	18.89	19.08
Chinese	28.56	29.26
Japanese	31.24	30.95
Other API (including South East Asian and Filipina)	19.08	19.79
Mexican	15.34	14.88
Puerto Rican	20.22	19.40
Cuban	24.25	22.13
Service and Trade Occupations		
White	59.78	58.71
Black	64.34	62.82
Chinese	47.47	46.80
Japanese	54.59	52.79
Other API (including South East Asian and Filipina)	56.41	53.96
Mexican	75.54	75.08
Puerto Rican	67.29	66.71
Cuban	64.51	64.91
N=	3,811,956	1,506,225

Source: IPUMS USA Current Population Survey, 2001 to 2011
N = 5,318,181

Table 4.5: Percent Occupation by Race and Ethnicity, Pre & During/Post Recession

	Pre (2001 to 2008)	Post (2009 to 2011)
Science, Technology, Engineering and Math		
White	73.34	70.88
Black	14.71	15.02
Chinese	1.65	1.72
Japanese	0.29	0.28
Other API (including South East Asian and Filipina)	5.15	6.02
Mexican	3.50	4.51
Puerto Rican	1.00	1.13
Cuban	0.35	0.44
Total	99.99	100.00
Professional Occupations		
White	79.95	77.94
Black	10.57	10.91
Chinese	1.25	1.41
Japanese	0.40	0.37
Other API (including South East Asian and Filipina)	2.55	3.13
Mexican	3.75	4.61
Puerto Rican	1.04	1.11
Cuban	0.49	0.52
Total	100.00	100.00
Service and Trade Occupations		
White	73.03	70.38
Black	13.96	14.02
Chinese	0.81	0.91
Japanese	0.27	0.24
Other API (including South East Asian and Filipina)	2.93	3.32
Mexican	7.17	9.06
Puerto Rican	1.34	1.49
Cuban	0.50	0.59
Total	100.01	100.01
N=	3,811,956	1,506,225

Source: IPUMS USA Current Population Survey, 2001 to 2011
N = 5,318,181

My second dependent variable is wage and salary income. I have adjusted the wage and salary income each year to 2011 inflation using the Bureau of Labor Statistics CPI inflation calculator. The mean adjusted income is $34,094.24 and the median adjusted income is $27,000.00 (minimum = $1.00, maximum = $723,350.00; SD = $35,458.00). Income is not normally distributed so I have transformed my income variable and will be reporting the logit in Chapter 6.

Independent Variables. My main independent variables are year, race/ethnicity, nativity, and assimilation. My year variable includes: 2001 to 2011. The Great Recession, the country's worst economic down-turn since the Great Depression, officially began in December 2007 and ended in June 2009 (National Bureau of Economic Research). In order to test Alba's group threat theory, the theory of Non-Zero Sum Mobility, for this study I am using 2001 to 2007 as a pre-recession time and 2008 to 2011 as a recession/post-recession time period.

Given that Asian women, in particular Chinese and other Asian Pacific Islander women such as South East Asian and Filipina women, are over represented in STEM fields I am presenting descriptive statistics for Chinese, Japanese, and other Asian Pacific Islander along with my main race/ethnicities of interest, White, Black, Mexican, Puerto Rican, and Cuban women. My weighted sample consists of 73.78% White women, 13.34% Black women, 1.09% Chinese women, 0.29% Japanese women, 3.38% other Asian Pacific Islander women, 6.36% Mexican women, 1.26% Puerto Rican women, and 0.50% Cuban women (see Table 4.6). My final race/ethnicity variable is a merged variable from the race variable and the Spanish ethnicity variable that I recoded into eight

categories: White/non-Hispanic, Black/non-Hispanic, Chinese, Japanese, other Asian Pacific Islander, Mexican, Puerto Rican, and Cuban.

Table 4.6: Percent Race and Ethnicity in Sample

White	73.78
Black	13.34
Chinese	1.09
Japanese	0.29
Other API (including South East Asian and Filipina)	3.38
Mexican	6.36
Puerto Rican	1.26
Cuban	0.50
Total	100.00

Source: IPUMS USA Current Population Survey, 2001 to 2011;
N = 5,318,181

Table 4.7 presents the racial and ethnic composition of my sample for each year. My population percentages remain fairly consistent with only two exceptions. White women drop from just under 76 percent of the sample in 2001 to about 71 percent of the sample in 2011, and Mexican women increase from about five percent of the sample in 2001 to just under 8 percent of the sample in 2011 (see Table 4.7).

Table 4.7: Percent Race and Ethnicity by Year

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
White	75.81	75.32	75.23	74.48	74.48	73.87	73.71	73.05	72.88	71.69	71.3
Black	13.29	13.3	13.06	13.21	13.28	13.35	13.38	13.53	13.37	13.46	13.43
Chinese	0.97	0.97	0.99	1.07	1.05	1.12	1.08	1.07	1.14	1.21	1.24
Japanese	0.30	0.32	0.32	0.30	0.32	0.29	0.29	0.26	0.27	0.29	0.29
Other API (including South East Asian and Filipina)	2.77	3.0	3.15	3.11	3.26	3.43	3.45	3.52	3.53	3.86	3.93
Mexican	5.19	5.46	5.63	5.80	5.95	6.20	6.33	6.81	6.98	7.52	7.80
Puerto Rican	1.20	1.17	1.18	1.29	1.19	1.24	1.25	1.24	1.31	1.38	1.42
Cuban	0.47	0.46	0.44	0.48	0.48	0.49	0.51	0.51	0.51	0.58	0.59
N=	455,676	461,060	463,484	467,179	472,667	489,490	492,727	509,672	505,550	500,188	500,487

Source: IPUMS USA Current Population Survey, 2001 to 2011
N = 5,318,181

My nativity variable is a dummy variable recoded from the original birth place variable where native born equals 'born in the U.S, mainland. I chose to include cases that reported being Puerto Rican as foreign born (Acevedo 2004; Aranda 2008; Landale, Oropesa, and Gorman 2000). While Puerto Rico is a U.S. territory and barriers to migration are different from the barriers faced by other immigrants (Acevedo 2004; Aranda 2008), Island-born Puerto Ricans experience political, economic and cultural distinctions from their main-land born counter parts (Acevedo 2004). Because I anticipated this being somewhat of an analytical problem, I have also created a 'born in Puerto Rico' dummy variable so that I could cross reference Island-born versus mainland born when necessary (see Table 4.8).

Table 4.8: Percent U.S. Born, Island Born, and Foreign Born

Nativity	
Born in the U.S. (Main-land	87.12
Born outside of the U.S. (including Island-born Puerto Ricans)	12.88
Total	100.00
Puerto Rican Born	
Born in Puerto Rico (Island-born)	0.46

Source: IPUMS USA Current Population Survey, 2001 to 2011
N = 5,318,181

Assimilation Index. In order to test for assimilation in my foreign born groups I created an assimilation index that includes: citizenship status, length of time in the U.S., age of arrival, and English language skills. My citizenship variable is coded: not a U.S citizen, a naturalized citizen, and a citizen or born abroad of American parents. My years in the U.S. variable is coded: : 0 to 5 years, 6 to 10 years, 11 to 15 years, 16 to 20 years, 21 years and over, and native born. For the years 2001 and 2002 the only 'years in the U.S.' variable that was available was a continuous variable the used 0 as both an

indicator as native born status and as immigrant status with less than one year in the country. To account for this I cross referenced all of my length of time in the U.S. with the birthplace variable as I recoded.

Recoding for age of arrival in the U.S. was a more complex process. First, I created a minimum possible number of years in the U.S. and a maximum possible number of years on the U.S. variable so each respondent would then have a minimum and maximum number of years in the country. Second, I created a youngest possible age off arrival (ypaa) variable where yppa is equal to age minus the maximum number of years in the U.S. I also created an oldest possible age of arrival variable (opaa) where opaa is equal to age minus the minimum number of years in the U.S. Third, I created a six category age of arrival variable where each category represents the youngest possible age of arrival and the oldest possible age of arrive for a given category. The categories are: 0 to 5 years, 6 to 10 years, 11 to 15 years, 16 to 20 years, 21 years and over, and native born. For the first category I had to account for cases that reported a number years in the U.S. that was slightly over their actual age.

The final variable in my assimilation index is a language variable that asked if English was spoken in the home. I have recoded my English language variable into five dummy variables: does not speak English, speaks English but not well, speaks English well, speaks English very well, and speaks only English (see Table 4.9).

Table 4.9: Indicators of Assimilation by Percent

Years in the U.S.	
<1 to 5 years in the US	1.76
6 to 10 years in the US	2.02
11 to 15 years in the US	1.95
16 to 20 years in the US	1.85
21 or more years in the US	5.31
Native born (main-land only)	87.12
Total	100.01
Age of arrival	
<1 to 5 years of age	8.03
6 to 10 years of age	2.82
11 to 15 years of age	1.01
16 to 20 years of age	0.66
21 or more years of age	0.36
Native born (main-land only)	87.12
Total	100.00
English language	
Speaks no English	0.48
Speaks English but not well	1.81
Speaks English well	3.02
Speaks English very well	10.13
Speaks only English	3.06
Native born/speaks only English	81.50
Total	100.00
Citizenship status	
Is not a citizen	6.10
Is a naturalized citizen	5.41
Native born citizen (main-land only)	88.50
Total	100.01

Source: IPUMS USA Current Population Survey, 2001 to 2011
N = 5,318,181

Table 4.10 presents the mean assimilation index score by year. The minimum possible points available on the assimilation index were 4 and the maximum points available were 21 points. The mean assimilation index score dropped from 19.7 in 2001 to 19.37 in 2011 (see Table 4.10). Generally, the women in this analysis are fairly assimilated in the United States and have mean assimilation index scores near the maximum index score.

Table 4.10: Assmilation Index Mean Score by Year

	2001		2002		2003		2004		2005		2006		2007		2008		2009		2010		2011	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Assimilation Index	19.68	4.67	19.65	4.97	19.62	4.81	19.60	4.86	19.56	3.20	19.51	3.25	19.51	3.25	19.47	3.29	19.46	3.29	19.40	3.35	19.37	3.39

Source: IPUMS USA Current Population Survey, 2001 to 2011; minimum=4.0, maximum=21.0

N = 5,318,181

Control Variables. The relevant literature suggests a number of variables that may help explain occupational mobility. Accordingly, I am using education, labor force participation, age, marital status, the presence of children, and region as my control variables (see Table 4.11).

In order to examine variables that may account for the relationship between my dependent and independent variables I am including education and labor force participation in my analysis. The IPUMS offers one variable that measures educational attainment and records for up to five years of college completed. I have recoded this variable into dummy variables that include: has not completed any high school level grades, completed some high school, completed high school, completed four years of college, and completed five years of college. I am using two measures of labor force participation: usual hours worked and employment status. I have recoded usual hours worked from a continuous variable into two dummy variables: full-time (35 or more hours worked) and part-time (34 or fewer hours worked). The IPUMS offers one employment status variable for all of the years in my sample. I have recoded this variable from employed, unemployed, and not in the labor force into two dichotomous variables: employed and unemployed variable, eliminating the respondents that were not in the labor force.

Age is important because it is often used as a proxy for labor market experience (Dozier 2010), and research suggests that there are variations in occupational mobility across the different racial and ethnic categories by age (Pettit and Ewert 2009). After restricting my sample to women between the ages of 18 and 65, I recoded the variable into three dummy variables: young (18 to 25), middle (26 to 34), and old (35 to 64).

Research also suggests a relationship between marital status and occupational mobility. For example, employed black women are less likely to be unmarried or never married compared to white women (Pettit and Ewert 2009) and black unmarried mothers are less likely to be employed than their married counterparts (Concoran 1999). To account for the possibility that marital status may help explain racial and ethnic variations in occupational mobility I have recoded marital status into two dummy variables: married and not married.

Yet another variable that may help explain the relationship between race/ethnicity and occupational mobility is the presence of children (Kim 2002 and England *et al* 2004). In order to account for the possibility that the presence of children may help explain the relationship between race/ethnicity and occupational mobility I have recoded the presence of children into two dummy variables: has children and does not have children.

In keeping with Census regions I have used the original IPUMS variable for region recoding each into a dummy variable: Northeast, Midwest, South, and West.

Table 4.11: Demographic Variables for Sample

Employment Status	
Employed	95.48
Unemployed	4.52
Total	100.00
Hours worked	
Employed Full-time	73.87
Employed Part-time	26.13
Total	100.00
Educational Attainment	
No College	40.69
Some College	27.82
Completed Four Years	20.61
Completed Five Years or More	10.88
Total	100.00
Age	
18 to 25 Years of Age	16.12
26 to 34 Years of Age	19.88
35 to 64 Years of Age	64.00
Total	100.00
Marital Status	
Married	52.87
Not Married	47.13
Total	100.00
Children	
Has Children	46.46
Does Not Have Children	53.54
Total	100.00
Region	
Northeast	19.02
Midwest	23.65
South	35.97
West	21.36
Total	100.00

Source: IPUMS USA Current Population Survey, 2001 to 2011
N = 5,318,181

Analytical Strategy

The goal of this project is to examine the relationship between women's race and ethnicity and their representation in STEM and professional fields, and associated income variations. For this project I will make use of basic descriptive statistics across time; binary logistic regression to predict the odds of a women being in a STEM or profession field by race and ethnicity across time, and pre/post-recession; and Ordinary Least Squares (OLS) to examine the linear relationship between the racial and ethnic composition of each profession and wage and salary income.

Results Chapter: Odds of Being in STEM Fields and Professional Occupations. In Chapter 5 I present the results of a binary logistic regression predicting the odds of a women being STEM and professional fields, by race and ethnicity. I used binary logistic regression to predict my categorical occupation variable from a group of predictor variables.

First, I present the yearly change in each racial and ethnic group's representation in STEM and professional field, beginning with the percent change from 2001 to 2002. I then present two sets of regression models, four models examining the odds of being in a STEM field from 2001 to 2011, and four sets examining the odds of being in a professional field from 2001 to 2011. For both sets of regression models, model 1 predicts the odds of Black, Mexican, Puerto Rican, and Cuban women being in STEM/professional fields using white women as the reference group. Model 2 predicts the odds of foreign born and Island-born Puerto Rican women being in a STEM/professional field using native born women as the reference group. Model 3 predicts the odds of least assimilated, some assimilated, more assimilated, and most

assimilate women being in STEM/professional fields using native born women as the reference group. Finally, model 4 introduces my control variables. In Model 5 I introduce my race, assimilation, and education interaction variables,

Next I use binary logistic regression to predict the odds of a women being in STEM/professional fields by race and ethnicity for a pre-recession time period, 2001 to 2007, and for a recession/post-recession time period, 2008 to 2011. I use the same five models for these two groups of regressions.

Results Chapter: Linear Relationship between Racial/Ethnic Composition and Income. In Chapter 6 I present the results of an Ordinary Least Squares Regression predicting the relationship between the increase in the number of women of color in STEM/professional fields and associated wage and salary income changes. I begin by examining descriptive statistics for the change in racial and ethnic composition in STEM and professional fields by year and the percent income change in each occupation by race for each year.

Next I run two sets of Ordinary Least Squares regression models. The first set of models examines the change in income in STEM fields pre-recession and during/post-recession. Model 1 and Model 2 examine the change in income by race. Model 3 and Model 4 introduces nativity. Model 5 and Model 6 introduces my assimilation index. And Model 7 and Model 8 introduce my control variables. In Model 9 and Model 10 I introduce my race, assimilation, and education interaction variables. Next, I run the same set of regressions for professional fields pre-recession and during/post-recession.

CHAPTER 5: WOMEN'S OCCUPATION IN STEM AND PROFESSIONAL FIELDS BY RACE/ETHNICITY, NATIVITY, AND ASSIMILTION

In this chapter I present the results of my analysis of women's occupational status by race/ethnicity, nativity, and assimilation. First, I begin by presenting the yearly change in occupational status. Second, I discuss the odds of being in a STEM field or a professional field from 2001 to 2011. Third, I discuss the odds of being in a STEM field or a professional field for two different time periods, pre-recession and during/post-recession. Finally, I discuss my findings support for my hypotheses and theoretical connections.

Yearly Change in Occupation by Race/Ethnicity

Beginning with 2001, the women in my sample were represented in STEM fields as follows: 14.42 percent of my White sample, 16.16 percent of my Black sample, 9.64 percent of my Mexican sample, 12.50 percent of my Puerto Rican sample, and 8.98 percent of my Cuban sample. Table 5.1 and Figure 5.1 present the yearly percent change in STEM fields by race and ethnicity. Black women remain the best represented in STEM fields experiencing a steady increase from 16.16 percent in 2001 to 18.65 percent in 2011. White women have the second best representation in STEM fields experiencing less of an increase, but an increase none the less from 14.42 percent in 2001 to 16.45 percent in 2011. Puerto Rican women remain better represented than their Mexican and Cuban counter parts, yet under represented compared to Black and White women. Additionally, Puerto Rican women experienced periods of increases and decreases that Black and White women did not experience shifting from a high of 13.37 percent in 2002 to a low of 11.69 percent in 2003, and a second high in 2010 at 13.99 percent. Cuban

women did not experience a notable trend in representation, rather increasing and decreasing from one year to the next. However, Cuban women did experience the largest overall increase moving from 8.98 percent of the sample working in STEM fields in 2001 to 14.10 percent in 2011. Mexican women remained the least represented in STEM with a low in 2002 at 8.43 percent and a high in 2011 at 10.47 percent.

Table 5.1 and Figure 5.2 present the yearly percent change in each professional fields by race and ethnicity. White women and Cuban women are the best represented in professional fields, both experiencing peak representation in 2001 and 2002, and a sharp decline in 2003. After 2003 White women experience a slight but steady incline to 25.59 percent in 2011 while Cuban women experienced periods of extreme highs and lows ending 2011 at 19.13 percent, down eight percentage points from 2001. Black women and Puerto Rican women were similarly represented in professional fields and experienced a similar trend to that of their White counter parts, a sharp decline in the early 2000s and a very gradual incline to 2001. Mexican women remain the poorest represented in professional fields with only a peak 19.38 percent of the sample working in professional fields in 2002 and topping out at 15.09 percent in 2011 after the same sharp decline in 2003.

Table 5.1: Yearly Change in Percent of Each Race and Ethnicity in Each Occupation

	2001	2002	%Change	2003	%Change	2004	%Change	2005	%Change	2006	%Change	2007	%Change	2008	%Change	2009	%Change	2010	%Change	2011	%Change
Science, Technology, Engineering and Math																					
White	14.42	14.71	0.29	14.83	0.12	14.69	-0.14	14.99	0.30	15.0	0.01	15.19	0.19	15.41	0.22	15.8	0.39	15.99	0.19	16.45	0.46
Black	16.16	15.92	-0.24	17.17	1.25	16.58	-0.59	17.14	0.56	16.95	-0.19	17.32	0.37	17.94	0.62	17.89	-0.05	17.93	0.04	18.65	0.72
Chinese	24.35	25.57	1.22	24.42	-1.15	23.23	-1.19	23.5	0.27	23.80	0.30	23.18	-0.62	23.84	0.66	23.32	-0.52	24.38	1.06	24.17	-0.21
Japanese	13.38	15.04	1.66	14.05	-0.99	12.81	-1.24	13.92	1.11	14.59	0.67	15.37	0.78	17.98	2.61	14.66	-3.32	16	1.34	16.44	0.44
Other API (including South East Asian and Filipina)	24.72	24.44	-0.28	23.93	-0.51	24.56	0.63	24.87	0.31	24.44	-0.43	24.59	0.15	25.61	1.02	27.07	1.46	26.26	-0.81	26.2	-0.06
Mexican	9.64	8.43	-1.21	8.80	0.37	9.71	0.91	8.83	-0.88	9.33	0.50	9.12	-0.21	9.50	0.38	9.87	0.37	10.26	0.39	10.47	0.21
Puerto Rican	12.50	13.37	0.87	11.69	-1.68	12.13	0.44	12.88	0.75	12.48	-0.40	1.24	-11.24	13.63	12.39	13.52	-0.11	13.99	0.47	13.62	-0.37
Cuban	8.98	11.54	2.56	9.41	-2.13	12.46	3.05	11.07	-1.39	12.44	1.37	12.32	-0.12	12.06	-0.26	13.37	1.31	12.66	-0.71	14.1	1.44
Professional Occupations																					
White	28.27	28.55	0.28	23.89	-4.66	24.10	0.21	24.07	-0.03	24.14	0.07	24.80	0.66	25.05	0.25	25.21	0.16	25.7	0.49	25.59	-0.11
Black	21.32	20.57	-0.75	18.26	-2.31	18.31	0.05	17.62	-0.69	17.99	0.37	18.34	0.35	18.66	0.32	19.15	0.49	19.5	0.35	19.03	-0.47
Chinese	29.41	32.89	3.48	25.75	-7.14	27.48	1.73	28.39	0.91	28.34	-0.05	28.05	-0.29	29.03	0.98	29.79	0.76	28.5	-1.29	29.7	1.2
Japanese	36.40	35.56	-0.84	28.85	-6.71	28.60	-0.25	29.28	0.68	30.0	0.72	30.34	0.34	28.75	-1.59	32.84	4.09	29.33	-3.51	32.85	3.52
Other API (including South East Asian and Filipina)	19.46	22.47	3.01	17.89	-4.58	17.86	-0.03	18.74	0.88	18.37	-0.37	19.13	0.76	19.38	0.25	19.67	0.29	19.87	0.2	20.06	0.19
Mexican	18.06	19.38	1.32	13.74	-5.64	15.07	1.33	13.85	-1.22	13.55	-0.30	14.66	1.11	14.90	0.24	14.75	-0.15	14.66	-0.09	15.19	0.53
Puerto Rican	23.53	24.02	0.49	17.91	-6.11	19.78	1.87	19.30	-0.48	18.24	-1.06	19.23	0.99	19.86	0.63	19.79	-0.07	19.18	-0.61	18.84	-0.34
Cuban	26.48	28.73	2.25	26.11	-2.62	20.99	-5.12	23.97	2.98	21.90	-2.07	22.46	0.56	23.67	1.21	22.53	-1.14	19.18	-3.35	20.84	1.66
Service and Trade Occupations																					
White	57.31	56.74	-0.57	61.28	4.54	61.21	-0.07	60.94	-0.27	60.86	-0.08	60.01	-0.85	59.54	-0.47	59	-0.54	58.31	-0.69	57.96	-0.35
Black	62.52	63.48	0.96	64.87	1.39	65.11	0.24	65.24	0.13	65.06	-0.18	64.34	-0.72	63.40	-0.94	62.96	-0.44	62.57	-0.39	62.32	-0.25
Chinese	46.24	41.54	-4.7	49.83	8.29	49.29	-0.54	48.11	-1.18	47.86	-0.25	48.77	0.91	47.13	-1.64	46.89	-0.24	47.12	0.23	46.13	-0.99
Japanese	50.31	49.40	-0.91	57.10	7.70	48.59	-8.51	56.8	8.21	55.41	-1.39	54.28	-1.13	53.27	-1.01	52.5	-0.77	54.67	2.17	50.72	-3.95
Other API (including South East Asian and Filipina)	55.83	53.09	-2.74	58.18	5.09	57.58	-0.60	56.40	-1.18	57.19	0.79	56.28	-0.91	55.01	-1.27	53.26	-1.75	53.86	0.6	53.74	-0.12
Mexican	72.30	72.19	-0.11	77.46	5.27	75.22	-2.24	77.32	2.10	77.12	-0.20	76.22	-0.90	75.60	-0.62	75.38	-0.22	75.08	-0.3	74.34	-0.74
Puerto Rican	63.98	62.61	-1.37	70.40	7.79	75.22	4.82	67.82	-7.40	69.28	1.46	68.37	-0.91	66.51	-1.86	66.69	0.18	66.82	0.13	67.55	0.73
Cuban	64.54	59.73	-4.81	64.48	4.75	65.55	1.07	64.96	-0.59	65.65	0.69	65.22	-0.43	64.26	-0.96	6.41	-57.85	65.67	59.26	65.06	-0.61
N=	455,676	461,060		463,484		467,179		472,667		489,490		492,727		509,672		505,550		500,188		500,487	

Source: IPUMS USA Current Population Survey, 2001 to 2011

N = 5,318,181

Figure 5.1: Yearly Change in Percent Race, STEM

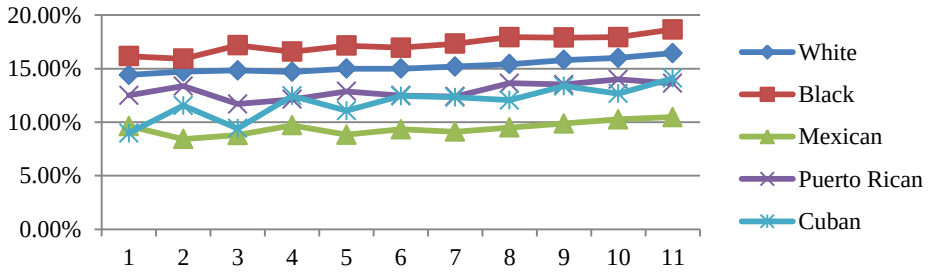
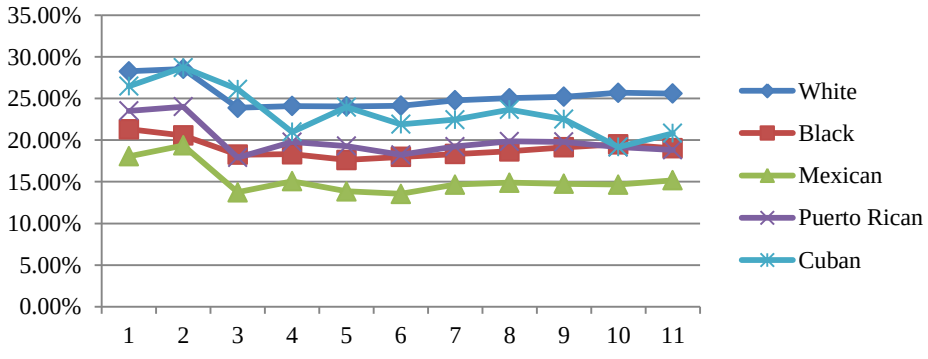


Figure 5.2: Yearly Change in Percent Race, Professional



Odds of being in a STEM Field or Professional Field

In this next section I present the results of two binary logistic regressions predicting the odds of a women being in a STEM field or professional field by race and ethnicity using odds ratios. I include in the analysis nativity, assimilation, and various covariates. Table 5.2 displays odds ratios for STEM workers from 2001 to 2011. My reference groups for the following four models include: White women, native born, women between the ages of 35 and 65, women without children, married women, northeast, five years of college or more, employed, working 35 hours or more. Model 1 includes my race and ethnicity variables. Compared to White women, Black women have 11.4 percent greater odds of being in a STEM field. All three of my Latina subgroups have lower odds of being in a STEM field than White women. Mexican women have 43.8 percent lower odds, Puerto Rican women have 20.5 percent lower odds, and Cuban women have 27.2 percent lower odds. In Model 2 I include nativity and find that foreign born women have 46.3 percent greater odds of being in STEM fields than native born women, while Island-born Puerto Rican women have 26.6 lower odds than main-land born women. Once I introduced nativity into the model, while remaining significant at .0001, Cuban women's odds of being in a STEM field decreased almost 16 percent.

In Model 3 I introduce my assimilation index. Compared to the native born women, least assimilated women have 31.2 percent greater odds of being in a STEM field, some assimilated women have 82.7 percent greater odds of being in a STEM field, more assimilated women have 46.2 percent greater odds, and the most assimilated women have 14.6 percent greater odds that native born women of being in a STEM field. This is consistent with the finding from Model 2 that suggests that foreign born women

have significantly greater odds of being in a STEM field than native born women. With the introduction of the assimilation index, all three Latina subgroups experience decreased odds of being in STEM fields.

Model 4 introduces my control variables. When I introduced control variables into the model the odds of being in a STEM field increased for Black, Mexican, and Puerto Rican women, though only Black women had higher odds of being in STEM than white women. In contrast, Cuban women's odds of being in STEM decreased with control variables. Consistent with Model 3, assimilated women have greater odds of being in a STEM field than native born women, though in my final model the effect off nativity decreases. In Model 5 I introduce interaction variables for race, assimilation, and education. The introduction of interactions variables has no effect on Black women's odds of being in a STEM field, but increases the odds of Mexican women being in a STEM field by 20 percentage points, Puerto Rican women by two percentage points, and Cuban women by 13 percentage points, though Black women remain the only group that have higher odds of being in STEM fields than White women. In Model 5 foreign born women once again have higher odds than white women of being in STEM fields, and Island-born Puerto Rican women remain consistent, with lower odds of being in STEM fields than their White counter parts. Compared to White, native born women with five years or more of education, Mexican women and Puerto Rican women who are least assimilated, some assimilated and more assimilated across all levels of education have significantly lower odds of being in STEM fields. On the other hand, Mexican women who are the most assimilated, in spite of having no college have higher odds of being in STEM fields, as do Puerto Rican women who are more assimilated and most assimilated,

in spite of having no college. Over all, Cuba women across all assimilated levels educational levels have higher odds than Mexican and Puerto Rican women of being in STEM fields, though lower levels than White women with the exception of least assimilated Cuban women with some college and the most assimilated Cuban women with no college who have slightly higher odds than their white, native born counter parts.

Table 5.2: Logistic Analysis Predicting Odds of being in a STEM/STEM Skilled Field, 2001 to 2011

	Model 1	Model 2	Model 3	Model 4	Model 5
	Estimates	Estimates	Estimates	Estimates	Estimates
Intercept	0.19	0.18	0.18	0.29	0.29 ***
White (reference group)					
Black	1.11 ***	1.11 ***	1.11 ***	1.21 ***	1.21 ***
Mexican	0.56 ***	0.50 ***	0.48 ***	0.64 ***	0.84 ***
Puerto Rican	0.80 ***	0.80 ***	0.75 ***	0.82 ***	0.84 ***
Cuban	0.73 ***	0.58 ***	0.57 ***	0.61 ***	0.74 ***
Nativity Variables					
U.S. Born (reference group)					
Foreign Born		1.46 ***	0.91 **	0.97	1.08 **
Puerto Rican Born		0.73 ***	0.81 ***	0.82 ***	0.86 **
Assimilation Variables					
U.S. Born (reference group)					
Least Assimilated			1.31 ***	1.24 ***	1.25 ***
Some Assimilated			1.83 ***	1.62 ***	1.55 ***
More Assimilated			1.46 ***	1.28 ***	1.13 ***
Most Assimilated			1.15 ***	1.09 ***	0.95 ***
Control Variables					
Oldest (reference group)					
Young				0.84 ***	0.84 ***
Middle				1.15 ***	1.15 ***
No Children (reference group)					
Has Children				1.17 ***	1.17 ***
Married (reference group)					
Not Married				0.96 ***	0.96 ***
Northeast (reference group)					
Midwest				1.00	1.01 **
South				0.91 ***	0.91 ***
West				0.83 ***	0.83 ***
Five Years of College (reference group)					
No College				0.35 ***	0.35 ***
Some College				0.81 ***	0.82 ***
Four Years of College				0.77 ***	0.77 ***
Employed (reference group)					
Unemployed				0.61 ***	0.61 ***
Working Full-time (reference group)					
Working Part-time				0.99 **	0.99 **
Interaction Effects					
US. Born (reference group)					
Mexican*Least Assimilated*No College					0.16 ***
Mexican*Least Assimilated*Some College					0.19 ***
Mexican*Least Assimilated*Four Years					0.31 ***
Mexican*Some Assimilated*No College					0.40 ***
Mexican*Some Assimilated*Some College					0.42 ***
Mexican*Some Assimilated*Four Years					0.42 ***
Mexican*More Assimilated*No College					0.89 **
Mexican*More Assimilated*Some College					0.75 ***
Mexican*More Assimilated*Four Years					0.55 ***
Mexican*Most Assimilated*No College					1.42 ***
Mexican*Most Assimilated*Some College					1.01
Mexican*Most Assimilated*Four Years					0.87 ***
Puerto Rican*Least Assimilated*No College					0.51 ***
Puerto Rican*Least Assimilated*Some College					0.54 **
Puerto Rican*Least Assimilated*Four Years					0.84
Puerto Rican*Some Assimilated*No College					0.89 **
Puerto Rican*Some Assimilated*Some College					0.42 ***
Puerto Rican*Some Assimilated*Four Years					0.88
Puerto Rican*More Assimilated*No College					1.46 ***
Puerto Rican*More Assimilated*Some College					0.83 **
Puerto Rican*More Assimilated*Four Years					0.89
Puerto Rican*Most Assimilated*No College					1.49 ***
Puerto Rican*Most Assimilated*Some College					0.94
Puerto Rican*Most Assimilated*Four Years					0.88 *
Cuban*Least Assimilated*No College					0.94
Cuban*Least Assimilated*Some College					1.06
Cuban*Least Assimilated*Four Years					0.96
Cuban*Some Assimilated*No College					0.67 ***
Cuban*Some Assimilated*Some College					0.53 ***
Cuban*Some Assimilated*Four Years					0.60 ***
Cuban*More Assimilated*No College					0.78
Cuban*More Assimilated*Some College					0.67 **
Cuban*More Assimilated*Four Years					0.88
Cuban*Most Assimilated*No College					1.07
Cuban*Most Assimilated*Some College					0.86
Cuban*Most Assimilated*Four Years					0.94

Source: IPUMS USA Current Population Survey, 2001 to 2011; *<.05, **<.01, ***<.001; exponentiated estimates reported

Note: Interactions included Black women so that White women were the only reference group

N = 5,318,181

In contrast to the STEM fields, each of my four populations have lower odds of being in professional fields than their White counter parts (see Table 5.3). Black women have 30.5 percent lower odds, Mexican women have 43 percent lower odds, 26.3 percent lower odds, and Cuban women have the highest odds of being in professional fields at 9.5 percent lower odds than White women. Foreign born women have about 24 percent lower odds of being in professional fields than native born women, with the exception of Island-born Puerto Rican women who have 16.7 percent higher odds. With the introduction of nativity in Model 2, Cuban women now have 4.3 percent higher odds of being in professional fields than white women. The introduction of assimilation in Model 3 makes little change to the odds ratio. However, relative to native born women, the least assimilated women have almost half the odds of being in professional fields. More assimilated women have the highest odds, at 46.9 percent higher odds than native born women.

With the introduction of control variables in Model 4, all women's odds of being in professional fields increase substantially. Black women's odds increase from 30.5 percent lower odds than White women to 10.8 percent lower odds. Mexican, Puerto Rican, and Cuban women now all have higher odds of being in professional fields. When controlling for covariates, foreign born and Island-born women now have higher odds of being in professional fields, though the effect of assimilation is decreased.

In Model 5 I introduce my race, assimilation, and education interactions variables. With the exception of Black women who continue to have lower odds than White women of being in professional fields, all women have higher odds than their White counter parts of being in professional fields. Foreign born women and Island-born Puerto Rican

women also have higher odds of being in professional fields than U.S. born women. Of the Mexican women in my sample, only those who are some assimilated with some college, some assimilated with four years, more assimilated with some college, more assimilated with four years, and most assimilated with four years have higher odds of being in professional fields. For Puerto Rican women, only those who are some assimilated with some college and more assimilated with some college have higher odds of being in professional fields. In contrast, the majority of Cuban women had higher odds of being in professional fields than white, native born women with fiveyears of education with the exception of the least assimilated Cuban women regardless of education.

Table 5.3: Logistic Analysis Predicting Odds of being in a Professional Field, 2001 to 2011

	Model 1	Model 2	Model 3	Model 4	Model 5
	Estimates	Estimates	Estimates	Estimates	Estimates
Intercept	0.34	0.35	0.34	2.16	2.15 ***
White (reference group)					
Black	0.70 ***	0.70 ***	0.69 ***	0.89 ***	0.89 ***
Mexican	0.53 ***	0.57 ***	0.54 ***	1.00	1.04 ***
Puerto Rican	0.74 ***	0.75 ***	0.69	1.06 ***	1.12 ***
Cuban	0.91 ***	1.04 *	1.06 ***	1.32 ***	1.14 ***
Nativity Variables					
U.S. Born (reference group)					
Foreign Born		0.77 ***	0.77 ***	1.06 **	1.05
Puerto Rican Born		1.17 ***	1.01 ***	1.01	1.06
Assimilation Variables					
U.S. Born (reference group)					
Least Assimilated			0.55 ***	0.29 ***	0.31 ***
Some Assimilated			1.07 **	0.53 ***	0.53 ***
More Assimilated			1.47 ***	0.87 ***	0.87 ***
Most Assimilated			1.16 ***	1.01 **	1.02 **
Control Variables					
Oldest (reference group)					
Young				0.60 ***	0.61 ***
Middle				0.87 ***	0.87 ***
No Children (reference group)					
Has Children				1.01 ***	1.01 ***
Married (reference group)					
Not Married				0.82 ***	0.82 ***
Northeast (reference group)					
Midwest				0.94 ***	0.94 ***
South				1.04 ***	1.04 ***
West				1.10 ***	1.10 ***
Five Years of College (reference group)					
No College				0.08 ***	0.08 ***
Some College				0.14 ***	0.14 ***
Four Years of College				0.50 ***	0.50 ***
Employed (reference group)					
Unemployed				0.80 ***	0.80 ***
Working Full-time (reference group)					
Working Part-time				0.46 ***	0.46 ***
Interaction Effects					
U.S. Born (reference group)					
Mexican*Least Assimilated*No College					0.55 ***
Mexican*Least Assimilated*Some College					0.88
Mexican*Least Assimilated*Four Years					0.78 ***
Mexican*Some Assimilated*No College					0.74 ***
Mexican*Some Assimilated*Some College					1.23 ***
Mexican*Some Assimilated*Four Years					1.14 ***
Mexican*More Assimilated*No College					0.90 **
Mexican*More Assimilated*Some College					1.05
Mexican*More Assimilated*Four Years					1.35 ***
Mexican*Most Assimilated*No College					0.81 ***
Mexican*Most Assimilated*Some College					0.95 **
Mexican*Most Assimilated*Four Years					1.27 ***
Puerto Rican*Least Assimilated*No College					0.59 **
Puerto Rican*Least Assimilated*Some College					0.51 **
Puerto Rican*Least Assimilated*Four Years					0.74
Puerto Rican*Some Assimilated*No College					0.68 ***
Puerto Rican*Some Assimilated*Some College					1.13
Puerto Rican*Some Assimilated*Four Years					0.94
Puerto Rican*More Assimilated*No College					0.83 **
Puerto Rican*More Assimilated*Some College					1.00
Puerto Rican*More Assimilated*Four Years					0.85 **
Puerto Rican*Most Assimilated*No College					0.88 **
Puerto Rican*Most Assimilated*Some College					0.90 **
Puerto Rican*Most Assimilated*Four Years					0.93
Cuban*Least Assimilated*No College					0.51 ***
Cuban*Least Assimilated*Some College					0.88
Cuban*Least Assimilated*Four Years					0.70 ***
Cuban*Some Assimilated*No College					1.39 ***
Cuban*Some Assimilated*Some College					1.77 ***
Cuban*Some Assimilated*Four Years					1.49 ***
Cuban*More Assimilated*No College					1.27 *
Cuban*More Assimilated*Some College					1.52 **
Cuban*More Assimilated*Four Years					1.33 *
Cuban*Most Assimilated*No College					1.02
Cuban*Most Assimilated*Some College					1.16 *
Cuban*Most Assimilated*Four Years					1.03

Source: IPUMS USA Current Population Survey, 2001 to 2011; *<.05, **<.01, ***<.001; exponentiated estimates reported

Note: Interactions included Black women so that White women were the only reference group

N = 5,318,181

Odds of being in a STEM Field or Professional Field: Pre and During/Post-Recession

Alba theorizes that during strong economic times the dominant group will feel less threat and all groups will experience mobility. In order to test this theory, I examine the odds of being in a STEM field or professional field for a pre-recession (2001 to 2007) time period and a during/post-recession time period (2008 to 2011). In table 5.4a and 5.4b I present the results of a binary logistic regression from for the odds of being in a STEM field both pre- and during/post-recession. Models 1 through 6 are presented in Table 5.4a and Models 7 through 10 are presented in Table 5.4b. In Model 1 and Model 2, consistent with finding from my overall sample, Black women have higher odds of being in STEM fields than White women, about 11 percent higher odds. In fact, Black women experience slightly better odds during/post-recession. Also consistent with previous findings, with the introduction of nativity (Model 3 and Model 4), foreign born women have higher odds of being in STEM fields than native born women, 48.2 percent higher, and Island-born Puerto Rican women have about 28 percent lower odds than main-land born women.

In Model 5 and Model 6 I introduce assimilation. Black women's odds of being in a STEM field remain consistent with previous models, in fact increasing slightly for during/post-recession time period. Mexican women's odds also remain fairly consistent with previous models, at about half the odds of White women of being in a STEM field, also increasing slight during/post-recession. The introduction of assimilation decreases Puerto Rican women's odds of being in STEM by about five percentage points, though they also experience higher odds during/post-recession. Cuban women's odds of being in STEM have been decreasing with the introduction of covariates, however, in Model 6

they experience about a nine percent increase in odds during/post-recession with the introduction of assimilation. In Model 7 and Model 8 I introduce my control variables. With the introduction of control variables Black women experience the highest odds of being in STEM fields, 22.8 percent higher odds than White women, though the control variables decrease the odds slightly in the during/post-recession time period. The introduction of control variables also increases the odds of Mexican women being in a STEM field by about 10 percentage points. However, similar to Black women, Mexican women have lower odds of being in a STEM field during/post-recession. When controlling for covariates, Puerto Rican women's odds of being in a STEM field also increase, about 8 percent, though their odds remain consistent from pre-recession to during/post-recession. Cuban women's odds of being in a STEM field remain consistently about 40 lower than that of White women across the eight models, though with each model, Cuban women have about one percentage point higher odds of being in a STEM field in the during/post-recession time period.

In Model 9 and Model 10 I introduce my race, assimilation, and education interaction variables. The same trends continue both pre-recession and during/post-recession. Black women continue to have higher odds than White women of being in STEM fields, while Mexican, Puerto Rican, and Cuban women have lower odds. I Model 9, pre-recession, nativity is significant. Foreign born women have higher odds of being in STEM fields than native born women, and Island-born Puerto Rican women have lower odds. In Model 10, during/post-recession, nativity is no longer significant. With the exception of the most assimilated Mexican women with no college, Mexican women interacted with assimilation and education had significantly lower odds of being in STEM

fields than White, native born women with five years or more of college during both time periods. Puerto Rican women who are more assimilated with no college and most assimilated with no college have higher odds of being STEM fields in both time periods. The only clear trend for Cuban women once interacted with assimilation and education is that those who are some assimilated across all educational levels have significantly lower odds of being in STEM fields. Most of the interactions for Cuban women are not significant.

Table 5.4a: Logistic Analysis Predicting Odds of being in a STEM/STEM Skilled Field, Pre-Recession & During/Post-Recession

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	Pre Recession	Post Recession	Pre Recession	Post Recession	Pre Recession	Post Recession
	Estimates	Estimates	Estimates	Estimates	Estimates	Estimates
Intercept	0.18	0.20	0.18	0.19	0.17 ***	0.19
White (reference group)						
Black	1.11 ***	1.12 ***	1.11 ***	1.11 ***	1.11 ***	1.11 ***
Mexican	0.55 ***	0.56 ***	0.49 ***	0.51 ***	0.47 ***	0.49 ***
Puerto Rican	0.79 ***	0.80 ***	0.80 ***	0.81 ***	0.74 ***	0.75 ***
Cuban	0.70 ***	0.76 ***	0.55 ***	0.63 ***	0.54 ***	0.62 ***
Nativity Variables						
U.S. Born (reference group)						
Foreign Born			1.48 ***	1.43 ***	0.94	0.86 **
Puerto Rican Born			0.72 ***	0.76 ***	0.80 ***	0.84 ***
Assimilation Variables						
U.S. Born (reference group)						
Least Assimilated					1.28 ***	1.36 ***
Some Assimilated					1.81 ***	1.85 ***
More Assimilated					1.43 ***	1.52 ***
Most Assimilated					1.15 ***	1.15 ***
Control Variables						
Oldest (reference group)						
Young						
Middle						
No Children (reference group)						
Has Children						
Married (reference group)						
Not Married						
Northeast (reference group)						
Midwest						
South						
West						
Five Years of College (reference group)						
No College						
Some College						
Four Years of College						
Employed (reference group)						
Unemployed						
Working Full-time (reference group)						
Working Part-time						
Interaction Effects						
U.S. Born (reference group)						
Mexican*Least Assimilated*No College						
Mexican*Least Assimilated*Some College						
Mexican*Least Assimilated*Four Years						
Mexican*Some Assimilated*No College						
Mexican*Some Assimilated*Some College						
Mexican*Some Assimilated*Four Years						
Mexican*More Assimilated*No College						
Mexican*More Assimilated*Some College						
Mexican*More Assimilated*Four Years						
Mexican*Most Assimilated*No College						
Mexican*Most Assimilated*Some College						
Mexican*Most Assimilated*Four Years						
Puerto Rican*Least Assimilated*No College						
Puerto Rican*Least Assimilated*Some College						
Puerto Rican*Least Assimilated*Four Years						
Puerto Rican*Some Assimilated*No College						
Puerto Rican*Some Assimilated*Some College						
Puerto Rican*Some Assimilated*Four Years						
Puerto Rican*More Assimilated*No College						
Puerto Rican*More Assimilated*Some College						
Puerto Rican*More Assimilated*Four Years						
Puerto Rican*Most Assimilated*No College						
Puerto Rican*Most Assimilated*Some College						
Puerto Rican*Most Assimilated*Four Years						
Cuban*Least Assimilated*No College						
Cuban*Least Assimilated*Some College						
Cuban*Least Assimilated*Four Years						
Cuban*Some Assimilated*No College						
Cuban*Some Assimilated*Some College						
Cuban*Some Assimilated*Four Years						
Cuban*More Assimilated*No College						
Cuban*More Assimilated*Some College						
Cuban*More Assimilated*Four Years						
Cuban*Most Assimilated*No College						
Cuban*Most Assimilated*Some College						
Cuban*Most Assimilated*Four Years						

Source: IPUMS USA Current Population Survey, 2001 to 2011; *<.05, **<.01, ***<.001; exponentiated estimates reported

Note: Interactions included Black women so that White women were the only reference group

N = 5,318,181

Table 5.4b: Logistic Analysis Predicting Odds of being in a STEM/STEM Skilled Field, Pre-Recession & During/Post-Recession

	Model 7	Model 8	Model 9	Model 10
	Pre Recession	Post Recession	Pre Recession	Post Recession
	Estimates	Estimates	Estimates	Estimates
Intercept	0.29	0.29	0.29 ***	0.28 ***
White (reference group)				
Black	1.23 ***	1.19 ***	1.23 ***	1.19 ***
Mexican	0.65 ***	0.63 ***	0.83 ***	0.85 ***
Puerto Rican	0.82 ***	0.81 ***	0.84 ***	0.84 ***
Cuban	0.58 ***	0.66 ***	0.70 ***	0.78 ***
Nativity Variables				
U.S. Born (reference group)				
Foreign Born	0.99	0.93	1.11 **	1.05
Puerto Rican Born	0.81 ***	0.84 ***	0.81 ***	0.95
Assimilation Variables				
U.S. Born (reference group)				
Least Assimilated	1.20 ***	1.29 ***	1.21 ***	1.31 ***
Some Assimilated	1.61 ***	1.64 ***	1.53 ***	1.57 ***
More Assimilated	1.25 ***	1.33 ***	1.10 **	1.17 **
Most Assimilated	1.08 ***	1.10 ***	0.95 ***	0.95 ***
Control Variables				
Oldest (reference group)				
Young	0.85 ***	0.82 ***	0.85 ***	0.81 ***
Middle	1.14 ***	1.17 ***	1.14 ***	1.17 ***
No Children (reference group)				
Has Children	1.18 ***	1.17 ***	1.17 ***	1.17 ***
Married (reference group)				
Not Married	0.97 ***	0.94 ***	0.97 ***	0.94 ***
Northeast (reference group)				
Midwest	1.00	1.01	1.00	1.02 *
South	0.91 ***	0.92 ***	0.91 ***	0.92 ***
West	0.82 ***	0.83 ***	0.82 ***	0.83 ***
Five Years of College (reference group)				
No College	0.33 ***	0.39 ***	0.33 ***	0.39 ***
Some College	0.77 ***	0.87 ***	0.78 ***	0.88 ***
Four Years of College	0.75 ***	0.79 ***	0.76 ***	0.80 ***
Employed (reference group)				
Unemployed	0.64 ***	0.58 ***	0.63 ***	0.58 ***
Working Full-time (reference group)				
Working Part-time	1.02 ***	0.95 ***	1.02 ***	0.95 ***
Interaction Effects				
U.S. Born (reference group)				
Mexican*Least Assimilated*No College			0.18 ***	0.14 ***
Mexican*Least Assimilated*Some College			0.19 ***	0.19 ***
Mexican*Least Assimilated*Four Years			0.33 ***	0.28 ***
Mexican*Some Assimilated*No College			0.44 ***	0.34 ***
Mexican*Some Assimilated*Some College			0.43 ***	0.42 ***
Mexican*Some Assimilated*Four Years			0.46 ***	0.40 ***
Mexican*More Assimilated*No College			0.94	0.83 **
Mexican*More Assimilated*Some College			0.78 ***	0.71 ***
Mexican*More Assimilated*Four Years			0.56 ***	0.56 ***
Mexican*Most Assimilated*No College			1.43 ***	1.40 ***
Mexican*Most Assimilated*Some College			1.02	0.98
Mexican*Most Assimilated*Four Years			0.92 *	0.82 ***
Puerto Rican*Least Assimilated*No College			0.43 **	0.61 *
Puerto Rican*Least Assimilated*Some College			0.55 **	0.52 **
Puerto Rican*Least Assimilated*Four Years			0.82	0.86
Puerto Rican*Some Assimilated*No College			0.94	0.83
Puerto Rican*Some Assimilated*Some College			0.44 ***	0.39 ***
Puerto Rican*Some Assimilated*Four Years			0.94	0.80
Puerto Rican*More Assimilated*No College			1.62 ***	1.23 *
Puerto Rican*More Assimilated*Some College			0.83 *	0.82 *
Puerto Rican*More Assimilated*Four Years			0.90	0.87
Puerto Rican*Most Assimilated*No College			1.44 ***	1.59 ***
Puerto Rican*Most Assimilated*Some College			0.93	0.95
Puerto Rican*Most Assimilated*Four Years			0.89	0.86
Cuban*Least Assimilated*No College			1.10	0.75 **
Cuban*Least Assimilated*Some College			1.07	1.02
Cuban*Least Assimilated*Four Years			1.07	0.85
Cuban*Some Assimilated*No College			0.64 ***	0.71 **
Cuban*Some Assimilated*Some College			0.47 ***	0.62 ***
Cuban*Some Assimilated*Four Years			0.59 ***	0.64 **
Cuban*More Assimilated*No College			0.55 *	1.47
Cuban*More Assimilated*Some College			0.68 *	0.68
Cuban*More Assimilated*Four Years			0.80	1.15
Cuban*Most Assimilated*No College			1.01	1.14
Cuban*Most Assimilated*Some College			0.96	0.74
Cuban*Most Assimilated*Four Years			0.86	1.03

Source: IPUMS USA Current Population Survey, 2001 to 2011; *<.05, **<.01, ***<.001; exponentiated estimates reported

Note: Interactions included Black women so that White women were the only reference group

N = 5,318,181

Similar to my findings for my overall sample, Black, Mexican, Puerto Rican, and Cuban women all have lower odds of being in professional fields than their white counter parts as seen in Table 5.5a and 5.5b. Models 1 through 6 are presented in Table 5.5a and Models 7 through 10 are presented in Table 5.5b. Black women have about 30 percent lower odds, Mexican women about half the odds, and Puerto Rican women about 25 percent lower odds. Cuban women have the highest odds of being in a professional field, five percent lower odds than White women. All women's odds remain fairly consistent during/post-recession, with the exception of Cuban women who experience a 10 percent decrease in the odds of being in a professional field. In Model 3 and Model 4 I introduce nativity. All women's odds stay consistent with the results of the two previous models with the exception of Cuban women who have higher odds of being in a professional field pre-recession, and experience a 10 percent increase in odds during/post-recession, though still having lower odds than White women during that time period. Similar to previous findings all year combined, foreign born women have lower odds of being in a professional field than native born women, and Island-born Puerto Rican women a have higher odds (Model 5 and Model 6). Foreign born women's odds remain about 25 percent lower than native born women both pre- and during/post-recession. Puerto Rican women have about 18 percent higher odds pre-recession and lost about five percentage points during/post-recession. Results remain fairly consistent with the introduction of assimilation though the effects of being Island-born are no longer significant for Puerto Rican women.

In Model 7 and Model 8 I introduce my control variables and Black women's odds of being in a professional field increase by about 20 percentage points, though still

having about 10 percent lower odds than white women. With the introduction of control variables Mexican, Puerto Rican, and Cuban women now have higher odds of being in professional fields pre-recession. Odds of being in a professional field remain consistent for Puerto Rican and Cuban women, though the effect of being Mexican is no longer significant. Control variable decrease the significance of being native born to .05 and eliminate the effect of being Island-born for Puerto Rican women pre-recession. Nativity is no longer significant for both measures during/post-recession.

In Model 9 and Model 10 I introduce my race assimilation, and education interaction variables. In the pre-recession time period race is significant. Black women have lower odds of being in professional fields than White women, while Mexican, Puerto Rican, and Cuban women have higher odds. Race is only significant for Black women and Puerto Rican women during/post-recession, though Black women continue to have lower odds and Puerto Rican women continue to have slightly higher odds. Nativity is only significant for foreign born women in the pre-recession time period. For Mexican women that I interacted with assimilation and education, only those who are least assimilated with no college, some assimilated with no college, some assimilated with some college, more assimilated with four, most assimilated with no college, and most assimilated with four years are significant in both time periods. The majority of the odds remain fairly consistent across the two time periods. With the exception of some assimilated with some college who lose 10 percentage points, and some assimilated with four years who gain almost twenty percentage points, and more assimilated with four years who lose almost 20 percentage points. For Puerto Rican women only those who some assimilated no college, more assimilated no college, most assimilated no college,

and most assimilated no college are significant in both time periods. All four groups have lower odds of being in a professional field than their white, native born counter parts with five years or more of education. However, Puerto Rican women who are some assimilated with no college do experience a 12 percent increase in odds of being in a professional field from the pre-recession to during/post-recession time periods. Cuba women who are least assimilated with no college, least assimilated with four years, some assimilated no college, some assimilated some college, and some assimilated with four years are significant from pre-recession to during/post-recession, all having higher odds of being in professional fields than their White, native-born women with five years of college.

Table 5.5a: Logistic Analysis Predicting Odds of being in a Professional Field, Pre-Recession and During/Post-Recession

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	Pre Recession	Post Recession	Pre Recession	Post Recession	Pre Recession	Post Recession
	Estimates	Estimates	Estimates	Estimates	Estimates	Estimates
Intercept	0.34	0.34	0.35	0.35	0.34	0.35
White (reference group)						
Black	0.69 ***	0.70 ***	0.69 ***	0.70 ***	0.69 ***	0.70 ***
Mexican	0.54 ***	0.52 ***	0.58 ***	0.55 ***	0.55 ***	0.53 ***
Puerto Rican	0.75 ***	0.72 ***	0.76 ***	0.73 ***	0.70	0.68
Cuban	0.95 **	0.84 ***	1.10 ***	0.96 *	1.11 ***	1.00 **
Nativity Variables						
U.S. Born (reference group)						
Foreign Born			0.77 ***	0.77 ***	0.82 ***	0.70 ***
Puerto Rican Born			1.18 ***	1.14 ***	1.02	0.98
Assimilation Variables						
U.S. Born (reference group)						
Least Assimilated					0.52 ***	0.60 ***
Some Assimilated					1.01 ***	1.20 ***
More Assimilated					1.41 ***	1.60 ***
Most Assimilated					1.17 ***	1.14 ***
Control Variables						
Oldest						
Young						
Middle						
No Children (reference group)						
Has Children						
Married (reference group)						
Not Married						
Northeast (reference group)						
Midwest						
South						
West						
Five Years of College (reference group)						
No College						
Some College						
Four Years of College						
Employed (reference group)						
Unemployed						
Working Full-time (reference group)						
Working Part-time						
Interaction Effects						
U.S. Born (reference group)						
Mexican*Least Assimilated*No College						
Mexican*Least Assimilated*Some College						
Mexican*Least Assimilated*Four Years						
Mexican*Some Assimilated*No College						
Mexican*Some Assimilated*Some College						
Mexican*Some Assimilated*Four Years						
Mexican*More Assimilated*No College						
Mexican*More Assimilated*Some College						
Mexican*More Assimilated*Four Years						
Mexican*Most Assimilated*No College						
Mexican*Most Assimilated*Some College						
Mexican*Most Assimilated*Four Years						
Puerto Rican*Least Assimilated*No College						
Puerto Rican*Least Assimilated*Some College						
Puerto Rican*Least Assimilated*Four Years						
Puerto Rican*Some Assimilated*No College						
Puerto Rican*Some Assimilated*Some College						
Puerto Rican*Some Assimilated*Four Years						
Puerto Rican*More Assimilated*No College						
Puerto Rican*More Assimilated*Some College						
Puerto Rican*More Assimilated*Four Years						
Puerto Rican*Most Assimilated*No College						
Puerto Rican*Most Assimilated*Some College						
Puerto Rican*Most Assimilated*Four Years						
Cuban*Least Assimilated*No College						
Cuban*Least Assimilated*Some College						
Cuban*Least Assimilated*Four Years						
Cuban*Some Assimilated*No College						
Cuban*Some Assimilated*Some College						
Cuban*Some Assimilated*Four Years						
Cuban*More Assimilated*No College						
Cuban*More Assimilated*Some College						
Cuban*More Assimilated*Four Years						
Cuban*Most Assimilated*No College						
Cuban*Most Assimilated*Some College						
Cuban*Most Assimilated*Four Years						

Source: IPUMS USA Current Population Survey, 2001 to 2011; *<.05, **<.01, ***<.001; exponentiated estimates reported

Note: Interactions included Black women so that White women were the only reference group

N = 5,318,181

Table 5.5b: Logistic Analysis Predicting Odds of being in a Professional Field, Pre-Recession and During/Post-Recession

	Model 7	Model 8	Model 9	Model 10
	Pre Recession	Post Recession	Pre Recession	Post Recession
	Estimates	Estimates	Estimates	Estimates
Intercept	2.14	2.17	2.14 ***	2.16 ***
White (reference group)				
Black	0.90 ***	0.89 ***	0.90 ***	0.89 ***
Mexican	1.02 *	0.99	1.07 ***	1.02
Puerto Rican	1.08 ***	1.04 *	1.16 ***	1.09 **
Cuban	1.38 ***	1.24 ***	1.24 ***	1.04
Nativity Variables				
U.S. Born (reference group)				
Foreign Born	1.08 *	1.01	1.07 *	1.00
Puerto Rican Born	1.03	0.98	1.08	1.02
Assimilation Variables				
U.S. Born (reference group)				
Least Assimilated	0.28 ***	0.31 ***	0.30 ***	0.33 ***
Some Assimilated	0.51 ***	0.56 ***	0.52 ***	0.56 ***
More Assimilated	0.86 ***	0.91 *	0.86 ***	0.91
Most Assimilated	1.02 *	1.00	1.03 **	1.01
Control Variables				
Oldest				
Young	0.62 ***	0.58 ***	0.62 ***	0.58 ***
Middle	0.88 ***	0.84 ***	0.88 ***	0.84 ***
No Children (reference group)				
Has Children	1.00	1.02 ***	1.00	1.02 ***
Married (reference group)				
Not Married	0.82 ***	0.83 ***	0.82 ***	0.83 ***
Northeast (reference group)				
Midwest	0.92 ***	0.96 ***	0.92 ***	0.96 ***
South	1.02 ***	1.06 ***	1.02 ***	1.06 ***
West	1.10 ***	1.10 ***	1.10 ***	1.10 ***
Five Years of College (reference group)				
No College	0.08 ***	0.07 ***	0.08 ***	0.07 ***
Some College	0.14 ***	0.13 ***	0.14 ***	0.13 ***
Four Years of College	0.52 ***	0.47 ***	0.52 ***	0.47 ***
Employed (reference group)				
Unemployed	0.78 ***	0.85 ***	0.78 ***	0.85 ***
Working Full-time (reference group)				
Working Part-time	0.49 ***	0.42 ***	0.49 ***	0.42 ***
Interaction Effects				
U.S. Born (reference group)				
Mexican*Least Assimilated*No College			0.52 ***	0.59 ***
Mexican*Least Assimilated*Some College			0.94	0.79
Mexican*Least Assimilated*Four Years			0.71 ***	0.86
Mexican*Some Assimilated*No College			0.72 ***	0.76 ***
Mexican*Some Assimilated*Some College			1.28 ***	1.18 ***
Mexican*Some Assimilated*Four Years			1.06	1.25 ***
Mexican*More Assimilated*No College			0.89 **	0.91
Mexican*More Assimilated*Some College			1.10 *	0.99
Mexican*More Assimilated*Four Years			1.43 ***	1.25 **
Mexican*Most Assimilated*No College			0.81 ***	0.81 ***
Mexican*Most Assimilated*Some College			0.97	0.92 **
Mexican*Most Assimilated*Four Years			1.25 ***	1.30 ***
Puerto Rican*Least Assimilated*No College			0.69	0.39
Puerto Rican*Least Assimilated*Some College			0.59	0.39 *
Puerto Rican*Least Assimilated*Four Years			0.81	0.64
Puerto Rican*Some Assimilated*No College			0.64 ***	0.76 *
Puerto Rican*Some Assimilated*Some College			1.15	1.10
Puerto Rican*Some Assimilated*Four Years			0.85 *	1.10
Puerto Rican*More Assimilated*No College			0.83 **	0.80 *
Puerto Rican*More Assimilated*Some College			1.04	0.95
Puerto Rican*More Assimilated*Four Years			0.84 *	0.86
Puerto Rican*Most Assimilated*No College			0.90 *	0.82 **
Puerto Rican*Most Assimilated*Some College			0.86 **	0.95
Puerto Rican*Most Assimilated*Four Years			0.89 *	0.98
Cuban*Least Assimilated*No College			0.51 ***	0.52 **
Cuban*Least Assimilated*Some College			0.87	0.88
Cuban*Least Assimilated*Four Years			0.72 **	0.64 **
Cuban*Some Assimilated*No College			1.29 **	1.52 ***
Cuban*Some Assimilated*Some College			1.68 ***	1.86 ***
Cuban*Some Assimilated*Four Years			1.41 ***	1.56 ***
Cuban*More Assimilated*No College			1.27	1.02
Cuban*More Assimilated*Some College			1.14	2.51 ***
Cuban*More Assimilated*Four Years			1.21	1.46
Cuban*Most Assimilated*No College			0.86	1.28 *
Cuban*Most Assimilated*Some College			1.07	1.28 *
Cuban*Most Assimilated*Four Years			1.03	1.05

Source: IPUMS USA Current Population Survey, 2001 to 2011; *<.05, **<.01, ***<.001; exponentiated estimates reported

Note: Interactions included Black women so that White women were the only reference group

N = 5,318,181

Support for Hypothesis and Conclusion

My above analysis suggests partial support for both the theory of tri-racialization the theory of non-zero sum mobility. I hypothesized that relative to White women, the collective black would have lower odds of being in a STEM or professional field. While this was indeed the case for both Black women and Mexican women in professional fields, Black women had higher odds of being in a STEM field than White women, yet lower odds of being in a professional field than White women. Mexican had lower odds than White women across fields.

I also hypothesized that the buffer group would have higher odds of being in a STEM field or professional field than the collective black. This was indeed the case for professional fields. Puerto Rican and Cuban women had higher odds of being in a professional field pre-recession and during/post-recession than Black and Mexican women. Mexican women also had lower odds of being in a STEM field than Puerto Rican and Cuban women. Black women, on the other hand, had higher odds of being in a STEM field than the buffer group, higher than White women in fact, suggesting that Bonilla-Silva's theory of tri-racialization may not apply across all occupational categories.

My findings also showed mixed support for my hypothesis that assimilation was positively associated with the odds of being in a STEM or professional field. Because foreign born women had higher odds of being in a STEM field than native born women, assimilating women across the index had higher odds of being in a STEM field than their non-assimilating native born counter parts. In contrast, assimilation mattered in the professional fields, though not to the extent that I hypothesized. There was a general

trend that the more assimilated a women was, the higher her odds of being employed in a professional field, though the least assimilated women had lower odds of being in a professional field than native born women.

My second set of hypotheses for this chapter suggested women of color would have better odds of being a STEM or professional field during the pre-recession time period of 2001 to 2007 than they would in the during/post-recession time period of 2008 to 2011. My findings actually showed very little support for this hypothesis. Indeed, with very few exceptions odds of being both in a STEM field and professional field increased for women of color during/post-recession, with the exception of Cuban women in professional fields. I also did not find support for my hypothesis that the less assimilated a woman was, the lower her odds would be in being in a STEM field or professional field during/post-recession. Again, much of the time women experienced increased odds during/post-recession.

Overall, my findings showed mixed support for Bonilla-Silva's theory and very limited support of Alba's theory. Bonilla-Silva's theory would suggest that Black and Mexican women would have lower odds of being in STEM and professional fields than Puerto Rican women and Cuban women. While this was the case for professional fields, this was not the case for Black women in STEM fields. In fact Bonilla-Silva's theory seems not to apply to Black women in STEM who have higher odds than their White counter parts. Alba's theory seems to not apply to women in STEM and professional fields. The theory of non-zero sum mobility would suggest that during/post-recession Women of Color would experience decreased odds of being in a STEM or professional

field, when in fact, my findings suggest that women as a whole have increased odds of working during/post-recession.

CHAPTER 6: THE RACIAL COMPOSITION OF STEM AND PROFESSIONAL FIELDS AND ASSOCIATED INCOME CHANGES

In Chapter 6, I discuss the relationship between the racial composition of STEM and professional fields and associated income changes. I present the results of an Ordinary Least Squares regression and discuss the linear relationship between racial composition in each field and income changes, and discuss my findings and support for my hypotheses.

For this analysis I used Ordinary Least Squares regression to predict the linear relationship between the changes in racial composition of STEM and professional fields and associated income changes. Because my independent variable is a non-linear variable, I have used dummy variables to capture the effect of race/ethnic composition in STEM and professional fields on income. My original income variable is not normally distributed, so for this analysis I used a transformed log of income.

STEM and Professional Fields, All Years

In this next section I present the results of two ordinary least squares regressions examining the relationship between the racial composition of STEM and professional fields and associated logged income changes. I include in the analysis nativity, assimilation, various covariates, and interactions variables. Table 6.1 presents the results for women in STEM fields. The results of Model 1 suggest that that there is a significant negative relationship between racial composition of the STEM field and logged income. We can expect the average median wage and salary income of a Black woman in STEM to be .28 logged dollars lower than that of White women in STEM. Similarly, Mexican women will be expected to have.38 lower logged median salary, Puerto Rican women

will be expected to have .24 lower logged median salaries, and Cuban women will be expected to have .13 lower logged median salary.

In Model 2 I add my nativity variables. Compared to U.S. born women, we can expect that foreign born women will have .22 higher logged mean wage a salary income and Island-born Puerto Rican women will have a .14 lower logged mean salary. The difference in mean logged income between White women and Black, Mexican, and Puerto Rican women remains fairly consistent with the previous model, but the difference in mean logged salary between White women and Cuban women now almost doubles. In Model 3 I introduce my assimilation variables. The effects of assimilation are positive and we can expect to see a difference of .23 mean logged salary for least assimilating women, .57 for some assimilated women, and .44 for more assimilated women, though the effect of assimilating is not significant for the most assimilated women and is zero.

With the introduction of my control variables in Model 4 the difference in mean logged salary for White women and Black women decreases to negative .11. Mexican women see a substantial decrease in relative difference at negative .12. Once controlling for covariates we can now expect Puerto Rican women to have a mean salary that is only .04 logged dollars lower than white women and Cuban women .09 logged dollars lower. With the introduction of my control variables foreign born women now have a mean logged salary that is .01 lower than U.S. born, and Island-born Puerto Rican women have a mean difference that is .10 logged dollars lower than main-land born women. Assimilation now has a negative effect on the least assimilated women who we now can expect to have a .28 lower mean logged salary than the U.S. born women.

In Model 5 I introduce my interaction variables. The effects of the race/ethnicity, education, and assimilation interactions are very mixed. For Mexican women, all significant interactions are negative. Regardless of education and assimilation, all assimilating Mexican women can expect to see a lower mean logged salary than white, U.S. born, women with years or more of education. However, the most assimilated Mexican women do see the lower wage penalty. Similarly, assimilating Puerto Rican women can expect to have lower mean logged salaries than their White, U.S. born, counter parts with five years or more of higher education. For Puerto Rican women who are the most assimilated, the interaction effect is largely not significant. The interaction effect is largely insignificant for Cuban women, though when it is significant, Cuban women can also expect to see lower mean logged salaries compared to the reference group.

Table 6.1: Ordinary Least Squares Analysis Predicting Income for STEM/STEM Skilled Fields, 2001 to 2011

	Model 1	Model 2	Model 3	Model 4	Model 5
	Estimates	Estimates	Estimates	Estimates	Estimates
Intercept	10.47 ***	10.44 ***	10.44 ***	11.31 ***	11.30 ***
White (reference group)					
Black	-0.28 ***	-0.30 ***	-0.30 ***	-0.11 ***	-0.11 ***
Mexican	-0.38 ***	-0.40 ***	-0.41 ***	-0.12 ***	-0.06 ***
Puerto Rican	-0.24 ***	-0.24 ***	-0.24 ***	-0.04 ***	-0.01
Cuban	-0.13 ***	-0.25 ***	-0.22 ***	-0.09 ***	-0.07 **
Nativity Variables					
U.S. Born (reference group)					
Foreign Born		0.22 ***	-0.26 ***	-0.01	-0.01
Puerto Rican Born		-0.14 ***	-0.13 ***	-0.10 ***	-0.02
Assimilation Variables					
U.S. Born (reference group)					
Least Assimilated			0.23 ***	-0.26 ***	-0.26 ***
Some Assimilated			0.57 ***	0.04 *	0.06 **
More Assimilated			0.44 ***	0.08 ***	0.09 ***
Most Assimilated			0.00	-0.01 **	-0.02 ***
Control Variables					
Older (reference group)					
Young				-0.68 ***	-0.68 ***
Middle				-0.23 ***	-0.23 ***
No Children (reference group)					
Has Children				0.00 **	0.00 *
Married (reference group)					
Not Married				-0.08 ***	-0.08 ***
Northeast (reference group)					
Midwest				-0.09 ***	-0.09 ***
South				-0.11 ***	-0.11 ***
West				0.00	0.00
Five Years of College (reference group)					
No College				-0.86 ***	-0.86 ***
Some College				-0.50 ***	-0.50 ***
Four Years of College				-0.18 ***	-0.18 ***
Employed (reference group)					
Unemployed				-0.83 ***	-0.83 ***
Working Full-time (reference group)					
Working Part-time				-0.79 ***	-0.79 ***
Interaction Effects					
U.S. Born (reference group)					
Mexican*Least Assimilated*No College					-0.09 **
Mexican*Least Assimilated*Some College					-0.08
Mexican*Least Assimilated*Four Years					-0.28 ***
Mexican*Some Assimilated*No College					-0.22 ***
Mexican*Some Assimilated*Some College					-0.26 ***
Mexican*Some Assimilated*Four Years					-0.24 ***
Mexican*More Assimilated*No College					-0.07 **
Mexican*More Assimilated*Some College					-0.14 ***
Mexican*More Assimilated*Four Years					-0.08
Mexican*Most Assimilated*No College					-0.04 **
Mexican*Most Assimilated*Some College					-0.04 **
Mexican*Most Assimilated*Four Years					0.00
Puerto Rican*Least Assimilated*No College					0.44 **
Puerto Rican*Least Assimilated*Some College					-0.27 *
Puerto Rican*Least Assimilated*Four Years					-0.05
Puerto Rican*Some Assimilated*No College					-0.13 **
Puerto Rican*Some Assimilated*Some College					-0.25 ***
Puerto Rican*Some Assimilated*Four Years					-0.15 **
Puerto Rican*More Assimilated*No College					-0.15 ***
Puerto Rican*More Assimilated*Some College					-0.20 ***
Puerto Rican*More Assimilated*Four Years					-0.07
Puerto Rican*Most Assimilated*No College					-0.02
Puerto Rican*Most Assimilated*Some College					-0.06 *
Puerto Rican*Most Assimilated*Four Years					0.01
Cuban*Least Assimilated*No College					0.02
Cuban*Least Assimilated*Some College					-0.19 **
Cuban*Least Assimilated*Four Years					-0.31 ***
Cuban*Some Assimilated*No College					0.02
Cuban*Some Assimilated*Some College					-0.18 ***
Cuban*Some Assimilated*Four Years					0.03
Cuban*More Assimilated*No College					0.08
Cuban*More Assimilated*Some College					0.07
Cuban*More Assimilated*Four Years					0.05
Cuban*Most Assimilated*No College					0.16 *
Cuban*Most Assimilated*Some College					0.09
Cuban*Most Assimilated*Four Years					0.09

Source: IPUMS USA Current Population Survey, 2001 to 2011; *<.05, **<.01, ***<.001

Note: Interactions included Black women so that White women were the only reference group

N = 5,318,181

Table 6.2 present the results of the OLS for professional fields. Women of color can also expect to see lower mean logged salaries in professional fields. In Model 1 Black women and Puerto Rican women have slightly lower means than their White professional counter parts. The mean logged salary for Black women in professional fields in .07 lower than White women and for Puerto Rican women it is .06 lower. Mexican women see a larger difference in mean logged salary than other Latinas at .20 mean lower logged mean than White women. Cuban women, on the other hand, have slightly higher mean logged incomes at .04 mean logged income than White women.

In Model 2 I introduce nativity which has virtually no effect on the relationship between race/ethnicity and mean income. Foreign born women have a slightly higher mean logged income than U.S. born women, .01 logged dollars, and Island-born Puerto Rican women have a slightly lower mean than main-land born women, .04 lower logged dollars. Assimilation has mixed effects for women in professional fields in Model 3. Those who are least assimilated and those who are most assimilated have lower mean logged salaries than U.S. born women, and those who are some assimilated and more assimilated have slightly higher mean salaries than U.S. born women. Foreign born women now see a .23 wage penalty in mean logged salary.

In Model 4 I introduce my control variables. The introduction of control variables decreases the wage penalty for Black women, Mexican women, and Puerto Rican women, and increases the wage gain for Cuban women. Foreign born women no longer have a wage penalty, though Island-born Puerto Rican women continue to have a lower mean logged salary than main-land born women. Assimilation has little effect in income

now, with the exception of the least assimilated who we now can expect to have a .32 lower mean logged salary than U.S. born women.

In Model 5 I introduce my race/ethnicity, assimilation, and education interaction variables. The interaction effect is not significant for the least assimilated Mexican women. Some assimilated, more assimilated, and most assimilated Mexican women all can expect to see lower mean logged salaries than their U.S. born counter parts. The results of the interact effect are mixed for Puerto Rican women. Though like Mexican women, the significant relationship between the interaction variable and Puerto Rican women is negative resulting in a lower mean logged income than their White, U.S. born counter parts. The least assimilated women with some college have the highest wage penalty with an expected .68 lower mean logged income than the reference group. The interaction effect has little significance for Cuban women. The least assimilated Cuban women with four years of education can expect a .25 lower mean logged income than the reference group. Cuban women who are more assimilated with no college, and most assimilated with no college have a slightly higher mean logged income than the reference group.

Table 6.2: Ordinary Least Squares Analysis Predicting Income for Professional Fields, 2001 to 2011

	Model 1	Model 2	Model 3	Model 4	Model 5
	Estimates	Estimates	Estimates	Estimates	Estimates
Intercept	10.59 ***	10.59 ***	10.59 ***	11.22 ***	11.21 ***
White (reference group)					
Black	-0.07 ***	-0.07 ***	-0.07 ***	-0.06 ***	-0.06 ***
Mexican	-0.20 ***	-0.20 ***	-0.19 ***	-0.06 ***	-0.03 ***
Puerto Rican	-0.06 ***	-0.05 ***	-0.03 **	0.01	0.03 **
Cuban	0.04 **	0.04 **	0.04 ***	0.06 ***	0.04 **
Nativity Variables					
U.S. Born (reference group)					
Foreign Born		0.01 **	-0.23 ***	0.03 *	0.03 *
Puerto Rican Born		-0.04 *	-0.09 ***	-0.13 ***	-0.08 ***
Assimilation Variables					
U.S. Born (reference group)					
Least Assimilated			-0.12 ***	-0.32 ***	-0.32 ***
Some Assimilated			0.30 ***	-0.02	-0.01
More Assimilated			0.28 **	0.02	0.04 *
Most Assimilated			-0.04 ***	-0.01 ***	-0.01 **
Control Variables					
Older (reference group)					
Young				-0.67 ***	-0.67 ***
Middle				-0.22 ***	-0.22 ***
No Children (reference group)					
Has Children				-0.05 ***	-0.05 ***
Married (reference group)					
Not Married				-0.02 ***	-0.02 ***
Northwest (reference group)					
Midwest				-0.15 ***	-0.15 ***
South				-0.17 ***	-0.17 ***
West				-0.04 ***	-0.04 ***
Five Years of College (reference group)					
No College				-0.46 ***	-0.46 ***
Some College				-0.37 ***	-0.37 ***
Four Years of College				-0.17 ***	-0.17 ***
Employed (reference group)					
Unemployed				-0.73 ***	-0.73 ***
Working Full-time (reference group)					
Working Part-time				-1.22 ***	-1.22 ***
Interaction Effects					
U.S. Born (reference group)					
Mexican*Least Assimilated*No College					0.03
Mexican*Least Assimilated*Some College					0.05
Mexican*Least Assimilated*Four Years					-0.07
Mexican*Some Assimilated*No College					-0.16 ***
Mexican*Some Assimilated*Some College					-0.15 ***
Mexican*Some Assimilated*Four Years					-0.13 ***
Mexican*More Assimilated*No College					-0.11 ***
Mexican*More Assimilated*Some College					-0.13 ***
Mexican*More Assimilated*Four Years					-0.13 ***
Mexican*Most Assimilated*No College					-0.05 ***
Mexican*Most Assimilated*Some College					-0.05 ***
Mexican*Most Assimilated*Four Years					-0.03 **
Puerto Rican*Least Assimilated*No College					0.10
Puerto Rican*Least Assimilated*Some College					-0.68 **
Puerto Rican*Least Assimilated*Four Years					-0.15
Puerto Rican*Some Assimilated*No College					-0.06
Puerto Rican*Some Assimilated*Some College					-0.16 ***
Puerto Rican*Some Assimilated*Four Years					-0.21 ***
Puerto Rican*More Assimilated*No College					-0.14 ***
Puerto Rican*More Assimilated*Some College					-0.09 **
Puerto Rican*More Assimilated*Four Years					-0.06
Puerto Rican*Most Assimilated*No College					-0.07 **
Puerto Rican*Most Assimilated*Some College					0.00
Puerto Rican*Most Assimilated*Four Years					-0.05 *
Cuban*Least Assimilated*No College					0.03
Cuban*Least Assimilated*Some College					0.01
Cuban*Least Assimilated*Four Years					-0.25 ***
Cuban*Some Assimilated*No College					0.01
Cuban*Some Assimilated*Some College					0.05
Cuban*Some Assimilated*Four Years					0.03
Cuban*More Assimilated*No College					0.17 *
Cuban*More Assimilated*Some College					-0.06
Cuban*More Assimilated*Four Years					0.00
Cuban*Most Assimilated*No College					0.12 *
Cuban*Most Assimilated*Some College					0.07
Cuban*Most Assimilated*Four Years					0.02

Source: IPUMS USA Current Population Survey, 2001 to 2011; *<.05, **<.01, ***<.001

Note: Interactions included Black women so that White women were the only reference group

N = 5,318,181

STEM and Professional Fields, Pre-During/Post-Recession

In this section I present the results of two ordinary least squares regressions examining the relationship between the racial composition of STEM and professional fields and associated logged income changes for two time periods, pre-recession (2001 to 2007) and during/post-recession (2008 to 2011).

Table 6.3a and 6.3b present the results of the OLS regression for women in STEM fields. Models 1 through 6 are presented in Table 6.3a and Models 7 through 10 are presented in Table 6.3b. In Model 1 we see that all women of color experience wage penalties compared to the mean logged income for White women in the pre-recession time period. Black women and Mexican women experience the largest wage penalty. Black women can expect to see a .27 lower mean logged income than White women and Mexican women can expect to see a .39 lower mean logged income than White women. Puerto Rican women can expect a .24 mean lower logged income and Cuban women can expect a .13 lower mean logged income. The only group that we can expect to see a wage penalty for during/post-recession is Black women (Model 2).

In Model 3 and Model 4 I introduce nativity. All women experience a slight increase in wage penalties compared to the first two models. Compared to U.S. born women, foreign born women can expect to see a .22 higher mean logged income and Island-born Puerto Rican women can expect to see a .13 lower lean logged income. Again, Black women and Island-born Puerto Rican women are the only women who see their wage penalty increase during/post-recession. In Model 5 and Model 6 I introduce assimilation variables. Assimilating women see increased wage gains during/post-recession. All other women have very little change in expected mean logged salary.

In Model 7 and Model 8 I introduce my control variables. With the introduction of control variable women of color see decreased wage penalties. Black women are now expected to now have a .10 lower mean logged income than White women, Mexican women have a .13 lower mean logged income, Puerto Rican women can be expected to have a .05 lower mean logged income, and Cuban women now are expected to have a .09 lower mean logged income. Foreign born women have no wage penalty and Island-born Puerto Rican women now can expect a .10 lower mean logged wage than main-land born women. Black women, foreign born women, and Island-born Puerto Rican women all see increased wage penalties during/post-recession.

In Model 9 and Model 10 I introduce the race/ethnicity, assimilation, and education interaction variables. The inclusion of the interaction variable had mixed effects for Mexican women, some of the interactions were significant, some were not. However, for all of the interactions that were significant Mexican women experience lower mean logged incomes than white, U.S. born women. Overall, assimilating Mexican women experienced a decrease in wage penalties during/post-recession. Puerto Rican women also experienced mixed results with the interaction variables. There were few categories that were significant across both time periods and of those that were significant, there were no clear patterns. Findings were similar for Cuban women. Few interactions were significant and there were no clear patterns to explain.

Table 6.3a: Ordinary Least Squares Analysis Predicting Income for STEM/STEM Skilled Fields, Pre-Recession & During/Post-Recession

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	Pre Recession	During/Post Recession	Pre Recession	During/Post Recession	Pre Recession	During/Post Recession
	Estimates	Estimates	Estimates	Estimates	Estimates	Estimates
Intercept	10.46 **	10.48 ***	10.43 ***	10.45 ***	10.43 ***	10.45 ****
White (reference group)						
Black	-0.27 ***	-0.29 ***	-0.29 ***	-0.31 ***	-0.29 ***	-0.31 ***
Mexican	-0.39 ***	-0.37 ***	-0.42 ***	-0.39 ***	-0.42 ***	-0.39 ***
Puerto Rican	-0.24 ***	-0.23 ***	-0.25 ***	-0.23 ***	-0.25 ***	-0.23 ***
Cuban	-0.13 ***	-0.13 ***	-0.25 ***	-0.24 ***	-0.22 ***	-0.22 ***
Nativity Variables						
U.S. Born (reference group)						
Foreign Born			0.22 ***	0.23 ***	-0.20 ***	-0.35 ***
Puerto Rican Born			-0.13 ***	-0.15 ***	-0.13 ***	-0.11 ***
Assimilation Variables						
U.S. Born (reference group)						
Least Assimilated					0.16 ***	0.34 ***
Some Assimilated					0.50 ***	0.67 ***
More Assimilated					0.39 ***	0.51 ***
Most Assimilated					0.00	0.01
Control Variables						
Older (reference group)						
Young						
Middle						
No Children (reference group)						
Has Children						
Married (reference group)						
Not Married						
Northeast (reference group)						
Midwest						
South						
West						
Five Years of College (reference group)						
No College						
Some College						
Four Years of College						
Employed (reference group)						
Unemployed						
Working Full-time (reference group)						
Working Part-time						
Interaction Effects						
U.S. Born (reference group)						
Mexican*Least Assimilated*Some College						
Mexican*Least Assimilated*Four Years						
Mexican*Some Assimilated*No College						
Mexican*Some Assimilated*Some College						
Mexican*Some Assimilated*Four Years						
Mexican*More Assimilated*No College						
Mexican*More Assimilated*Some College						
Mexican*More Assimilated*Four Years						
Mexican*Most Assimilated*No College						
Mexican*Most Assimilated*Some College						
Mexican*Most Assimilated*Four Years						
Puerto Rican*Least Assimilated*No College						
Puerto Rican*Least Assimilated*Some College						
Puerto Rican*Least Assimilated*Four Years						
Puerto Rican*Some Assimilated*No College						
Puerto Rican*Some Assimilated*Some College						
Puerto Rican*Some Assimilated*Four Years						
Puerto Rican*More Assimilated*No College						
Puerto Rican*More Assimilated*Some College						
Puerto Rican*More Assimilated*Four Years						
Puerto Rican*Most Assimilated*No College						
Puerto Rican*Most Assimilated*Some College						
Puerto Rican*Most Assimilated*Four Years						
Cuban*Least Assimilated*No College						
Cuban*Least Assimilated*Some College						
Cuban*Least Assimilated*Four Years						
Cuban*Some Assimilated*No College						
Cuban*Some Assimilated*Some College						
Cuban*Some Assimilated*Four Years						
Cuban*More Assimilated*No College						
Cuban*More Assimilated*Some College						
Cuban*More Assimilated*Four Years						
Cuban*Most Assimilated*No College						
Cuban*Most Assimilated*Some College						
Cuban*Most Assimilated*Four Years						

Source: IPUMS USA Current Population Survey, 2001 to 2011; *<.05, **<.01, ***<.001
Note: Interactions included Black women so that White women were the only reference group
N = 5,318,181

Table 6.3b: Ordinary Least Squares Analysis Predicting Income for STEM/STEM Skilled Fields, Pre-Recession & During/Post-Recession

	Model 7	Model 8	Model 9	Model 10
	Pre Recession	During/Post Recession	Pre Recession	During/Post Recession
	Estimates	Estimates	Estimates	Estimates
Intercept	11.27 ***	11.36 ***	11.27 ***	11.35 ***
White (reference group)				
Black	-0.10 ***	-0.12 ***	-0.10 ***	-0.12 ***
Mexican	-0.13 ***	-0.11 ***	-0.07 ***	-0.06 ***
Puerto Rican	-0.05 **	-0.03 *	-0.01	-0.01
Cuban	-0.09 ***	-0.08 ***	-0.10 *	-0.03
Nativity Variables				
U.S. Born (reference group)				
Foreign Born	0.00	-0.04	0.01	-0.04
Puerto Rican Born	-0.10 ***	-0.11 ***	-0.05	0.01
Assimilation Variables				
U.S. Born (reference group)				
Least Assimilated	-0.29 ***	-0.21 ***	-0.29 ***	-0.21 ***
Some Assimilated	0.03	0.06 *	0.05	0.08 **
More Assimilated	0.08 **	0.09 **	0.07 **	0.10 **
Most Assimilated	-0.02 **	-0.01	-0.02 **	-0.02 **
Control Variables				
Older (reference group)				
Young	-0.66 ***	-0.72 ***	-0.66 ***	-0.72 ***
Middle	-0.21 ***	-0.24 **	-0.21 ***	-0.25 ***
No Children (reference group)				
Has Children	-0.01 **	0.00	-0.01 **	0.00
Married (reference group)				
Not Married	-0.07 ***	-0.09 ***	-0.07 ***	-0.09 ***
Northeast (reference group)				
Midwest	-0.09 ***	-0.10 ***	-0.09 ***	-0.10 ***
South	-0.11 ***	-0.10 ***	-0.11 ***	-0.10 ***
West	-0.01 *	0.01 **	-0.01 *	0.01 **
Five Years of College (reference group)				
No College	-0.84 ***	-0.89 ***	-0.83 ***	-0.89 ***
Some College	-0.47 ***	-0.55 ***	-0.47 ***	-0.55 ***
Four Years of College	-0.16 ***	-0.22 ***	-0.16 ***	-0.22 ***
Employed (reference group)				
Unemployed	-0.77 ***	-0.93 ***	-0.76 ***	-0.93 ***
Working Full-time (reference group)				
Working Part-time	-0.79 ***	-0.80 ***	-0.79 ***	-0.80 ***
Interaction Effects				
U.S. Born (reference group)				
Mexican*Least Assimilated*Some College			0.14	-0.33 ***
Mexican*Least Assimilated*Four Years			-0.34 ***	-0.17 *
Mexican*Some Assimilated*No College			-0.25 ***	-0.16 ***
Mexican*Some Assimilated*Some College			-0.26 ***	-0.26 ***
Mexican*Some Assimilated*Four Years			-0.26 ***	-0.20 ***
Mexican*More Assimilated*No College			-0.08 *	-0.05
Mexican*More Assimilated*Some College			-0.13 **	-0.15 ***
Mexican*More Assimilated*Four Years			-0.11	-0.04
Mexican*Most Assimilated*No College			-0.05 **	-0.03
Mexican*Most Assimilated*Some College			-0.06 **	-0.03
Mexican*Most Assimilated*Four Years			0.03	-0.04
Puerto Rican*Least Assimilated*No College			0.51 **	0.38 **
Puerto Rican*Least Assimilated*Some College			-0.37 *	-0.14
Puerto Rican*Least Assimilated*Four Years			-0.13	0.02
Puerto Rican*Some Assimilated*No College			-0.04	-0.26 ***
Puerto Rican*Some Assimilated*Some College			-0.25 **	-0.25 **
Puerto Rican*Some Assimilated*Four Years			-0.20 **	-0.06
Puerto Rican*More Assimilated*No College			-0.14 **	-0.15 **
Puerto Rican*More Assimilated*Some College			-0.08	-0.32 ***
Puerto Rican*More Assimilated*Four Years			-0.07	-0.06
Puerto Rican*Most Assimilated*No College			-0.07 *	0.07 *
Puerto Rican*Most Assimilated*Some College			-0.06	-0.06
Puerto Rican*Most Assimilated*Four Years			0.05	-0.04
Cuban*Least Assimilated*No College			0.07	-0.03
Cuban*Least Assimilated*Some College			-0.13	-0.27 **
Cuban*Least Assimilated*Four Years			-0.23 **	-0.43 ***
Cuban*Some Assimilated*No College			0.02	0.03
Cuban*Some Assimilated*Some College			-0.14 *	-0.20 **
Cuban*Some Assimilated*Four Years			0.11	-0.06
Cuban*More Assimilated*No College			0.08	0.08
Cuban*More Assimilated*Some College			0.07	0.09
Cuban*More Assimilated*Four Years			0.07	0.02
Cuban*Most Assimilated*No College			0.13	0.19 *
Cuban*Most Assimilated*Some College			0.08	0.11
Cuban*Most Assimilated*Four Years			0.15	0.02

Source: IPUMS USA Current Population Survey, 2001 to 2011; *<.05, **<.01, ***<.001

Note: Interactions included Black women so that White women were the only reference group

N = 5,318,181

Table 6.4a and Table 6.4b present the findings form the OLS regression for women in professional fields. Models 1 through 6 are presented in Table 6.3a and Models 7 through 10 are presented in Table 6.4b. Compared to White women, Black women, Mexican women and Puerto Rican women in professional fields can expect to see lower mean logged incomes. Cuban women can expect to see slighlty higher mean logged incomes. During/post-recession Black women, Mexican women, and Cuban women expereinced wage penalties while Puerto Rican women gained back about half of their pre-recession losses (Model 1 and Model 2).

In Model 3 and Model 4 In introduce my nativity variables. Similar to previous findings, foreign born women do not experience wage penalties compared to U.S. born women. Island-born Puerto Rican women expereience slight wage penalties from .04 lower mean logged income in the pre-recession time period to .01 lower logged income during/post-recession time period. Black women, Mexican women, Puerto Rican women, and Cuban women all have very similar mean logged wages to the mean logged wages presented in the previous two models. In Model 5 and Model 6 I introduce my assimilation variables. The least assimilated women and the most assimilated women experience wage penalties, while those who are some assimilated and more assimilated can expect to have slighlty higher mean logged incomes. Again, the effects of race change very little with the inclusion of assimilation variables.

In Model 7 and Model 8 I introduce my control variables. With the introduction of control variables all women of color see decreased wage penalties, and Puerto Rican and Cuban women now have slightly higher mean logged incomes than White women. However all women experience during/post recession losses. Foreign born women now

have higher mean logged incomes, though Island-born Puerto Rican women now can expect to see a .14 lower mean logged income than main-land born women. The only significant difference for assimilating women during the two time periods is for the least assimiled women who no have only a .26 lower mean logged income during/post-recession.

In Model 9 and Model 10 I introduce my race/ethnicity, assimilation, and interactions effects. Some assimilated and more assimilated Mexican women had significantly lower mean logged income than their White, U.S. born counter parts. However, the interaction effect had no clear trend across the two time periods. For Puerto Rican women only those who were some assimilated and had some college, and those who where some assimilated and had four years of college had signficant differences in mean logged income across the two time period, this those with some college experience an increase in wage penalty while those with four years experienced a decrease in wage penalty. For Cuban women, only those who were least assimilated with four years of college had significant differenes in mean logged wage, though the wage penalty decreased by two points during/post-recession.

Table 6.4a: Ordinary Least Squares Analysis Predicting Income for Professional Fields, Pre-Recession & During/Post-Recession

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	Pre Recession	During/Post Recession	Pre Recession	During/Post Recession	Pre Recession	During/Post Recession
	Estimates	Estimates	Estimates	Estimates	Estimates	Estimates
Intercept	10.57 ***	10.62 ***	10.57 ***	10.62 ***	10.57 ***	10.62 ***
White (reference group)						
Black	-0.06 ***	-0.08 ***	-0.06 ***	-0.08 ***	-0.07 ***	-0.09 ***
Mexican	-0.20 ***	-0.21 ***	-0.20 ***	-0.21 ***	-0.19 ***	-0.20 ***
Puerto Rican	-0.07 ***	-0.04 **	-0.06 ***	-0.04 **	-0.04 **	-0.02
Cuban	0.06 **	0.02	0.06 **	0.01	0.06 **	0.02
Nativity Variables						
U.S. Born (reference group)						
Foreign Born			0.00	0.02 ***	-0.21 ***	-0.27 ***
Puerto Rican Born			-0.04 *	-0.01	-0.10 ***	-0.05 *
Assimilation Variables						
U.S. Born (reference group)						
Least Assimilated					-0.15 ***	-0.08 **
Some Assimilated					0.27 ***	0.35 ***
More Assimilated					0.27 ***	0.32 ***
Most Assimilated					-0.03 ***	-0.04 ***
Control Variables						
Older (reference group)						
Young						
Middle						
No Children (reference group)						
Has Children						
Married (reference group)						
Not Married						
Northeast (reference group)						
Midwest						
South						
West						
Five Years of College (reference group)						
No College						
Some College						
Four Years of College						
Employed (reference group)						
Unemployed						
Working Full-time (reference group)						
Working Part-time						
Interaction Effects						
U.S. Born (reference group)						
Mexican*Least Assimilated*No College						
Mexican*Least Assimilated*Some College						
Mexican*Least Assimilated*Four Years						
Mexican*Some Assimilated*No College						
Mexican*Some Assimilated*Some College						
Mexican*Some Assimilated*Four Years						
Mexican*More Assimilated*No College						
Mexican*More Assimilated*Some College						
Mexican*More Assimilated*Four Years						
Mexican*Most Assimilated*No College						
Mexican*Most Assimilated*Some College						
Mexican*Most Assimilated*Four Years						
Puerto Rican*Least Assimilated*No College						
Puerto Rican*Least Assimilated*Some College						
Puerto Rican*Least Assimilated*Four Years						
Puerto Rican*Some Assimilated*No College						
Puerto Rican*Some Assimilated*Some College						
Puerto Rican*Some Assimilated*Four Years						
Puerto Rican*More Assimilated*No College						
Puerto Rican*More Assimilated*Some College						
Puerto Rican*More Assimilated*Four Years						
Puerto Rican*Most Assimilated*No College						
Puerto Rican*Most Assimilated*Some College						
Puerto Rican*Most Assimilated*Four Years						
Cuban*Least Assimilated*No College						
Cuban*Least Assimilated*Some College						
Cuban*Least Assimilated*Four Years						
Cuban*Some Assimilated*No College						
Cuban*Some Assimilated*Some College						
Cuban*Some Assimilated*Four Years						
Cuban*More Assimilated*No College						
Cuban*More Assimilated*Some College						
Cuban*More Assimilated*Four Years						
Cuban*Most Assimilated*No College						
Cuban*Most Assimilated*Some College						
Cuban*Most Assimilated*Four Years						

Source: IPUMS USA Current Population Survey, 2001 to 2011; *<.05, **<.01, ***<.001
Note: Interactions included Black women so that White women were the only reference group
N = 5,318,181

Table 6.4b: Ordinary Least Squares Analysis Predicting Income for Professional Fields, Pre-Recession & During/Post-Recession

	Model 7	Model 8	Model 9	Model 10
	Pre Recession	During/Post Recession	Pre Recession	During/Post Recession
	Estimates	Estimates	Estimates	Estimates
Intercept	11.20 ***	11.23 ***	11.20 ***	11.23 ***
White (reference group)				
Black	-0.05 ***	-0.07 ***	-0.05 ***	-0.07 ***
Mexican	-0.06 ***	-0.08 ***	-0.02 **	-0.04 ***
Puerto Rican	0.01	0.00	0.04 **	0.02
Cuban	0.08 ***	0.05 **	0.05 *	0.03
Nativity Variables				
U.S. Born (reference group)				
Foreign Born	0.05 *	-0.01	0.05 *	-0.01
Puerto Rican Born	-0.14 ***	-0.11 ***	-0.08 **	-0.07 **
Assimilation Variables				
U.S. Born (reference group)				
Least Assimilated	-0.36 ***	-0.26 ***	-0.36 ***	-0.26 ***
Some Assimilated	-0.04	0.02	-0.04	0.03
More Assimilated	0.01	0.06 *	0.02	0.07 **
Most Assimilated	-0.01 **	-0.01	-0.02 **	0.00
Control Variables				
Older (reference group)				
Young	-0.65 ***	-0.70 ***	-0.65 ***	-0.70 ***
Middle	-0.20 ***	-0.25 ***	-0.20 ***	-0.25 ***
No Children (reference group)				
Has Children	-0.06 ***	-0.03 ***	-0.06 ***	-0.03 ***
Married (reference group)				
Not Married	-0.01 ***	-0.03 ***	-0.01 ***	-0.03 **
Northeast (reference group)				
Midwest	-0.15 ***	-0.16 ***	-0.15 ***	-0.16 ***
South	-0.17 ***	-0.17 ***	-0.17 ***	-0.17 ***
West	-0.04 ***	-0.04 ***	-0.04 ***	-0.04 ***
Five Years of College (reference group)				
No College	-0.47 ***	-0.45 ***	-0.47 ***	-0.45 ***
Some College	-0.38 ***	-0.37 ***	-0.37 ***	-0.37 ***
Four Years of College	-0.17 ***	-0.17 ***	-0.17 ***	-0.17 ***
Employed (reference group)				
Unemployed	-0.66 ***	-0.83 ***	-0.66 ***	-0.83 ***
Working Full-time (reference group)				
Working Part-time	-1.20 ***	-1.25 ***	-1.20 ***	-1.25 ***
Interaction Effects				
U.S. Born (reference group)				
Mexican*Least Assimilated*No College			0.05	-0.01
Mexican*Least Assimilated*Some College			-0.01	0.17 *
Mexican*Least Assimilated*Four Years			-0.13 *	0.01
Mexican*Some Assimilated*No College			-0.17 ***	-0.13 ***
Mexican*Some Assimilated*Some College			-0.17 ***	-0.11 ***
Mexican*Some Assimilated*Four Years			-0.13 ***	-0.14 ***
Mexican*More Assimilated*No College			-0.08 **	-0.17 ***
Mexican*More Assimilated*Some College			-0.16 ***	-0.08 *
Mexican*More Assimilated*Four Years			-0.16 ***	-0.08 *
Mexican*Most Assimilated*No College			-0.02	-0.10 ***
Mexican*Most Assimilated*Some College			-0.03 *	-0.07 ***
Mexican*Most Assimilated*Four Years			-0.02	-0.03 *
Puerto Rican*Least Assimilated*No College			0.05	0.23
Puerto Rican*Least Assimilated*Some College			-0.85 ***	-0.24
Puerto Rican*Least Assimilated*Four Years			-0.28	0.05
Puerto Rican*Some Assimilated*No College			-0.10	0.02
Puerto Rican*Some Assimilated*Some College			-0.14 *	-0.20 **
Puerto Rican*Some Assimilated*Four Years			-0.24 ***	-0.15 **
Puerto Rican*More Assimilated*No College			-0.18 ***	-0.04
Puerto Rican*More Assimilated*Some College			-0.13 **	-0.03
Puerto Rican*More Assimilated*Four Years			-0.04	-0.09
Puerto Rican*Most Assimilated*No College			-0.08 **	-0.05
Puerto Rican*Most Assimilated*Some College			0.01	-0.02
Puerto Rican*Most Assimilated*Four Years			-0.06 *	-0.04
Cuban*Least Assimilated*No College			-0.07	0.15
Cuban*Least Assimilated*Some College			-0.10	0.18
Cuban*Least Assimilated*Four Years			-0.25 **	-0.23 **
Cuban*Some Assimilated*No College			-0.01	0.04
Cuban*Some Assimilated*Some College			0.06	0.04
Cuban*Some Assimilated*Four Years			0.06	0.00
Cuban*More Assimilated*No College			0.19	0.06
Cuban*More Assimilated*Some College			-0.01	-0.12
Cuban*More Assimilated*Four Years			-0.03	0.05
Cuban*Most Assimilated*No College			0.11	0.14 *
Cuban*Most Assimilated*Some College			0.09	0.05
Cuban*Most Assimilated*Four Years			0.05	-0.01

Source: IPUMS USA Current Population Survey, 2001 to 2011; *<.05, **<.01, ***<.001

Note: Interactions included Black women so that White women were the only reference group

N = 5,318,181

Support for Hypotheses and Conclusion

In order to test Bonilla-Silva's theory of tri-racialization hypothesized that as the number of women of color increased in STEM and professional fields that income would decrease. Overall, my results suggested the support for this hypothesis in the STEM fields. Women of color overwhelmingly experienced lower mean logged incomes than their White counter parts. I found the same results to be the case in the pre-recession and during/post-recession time periods. Similarly, as representation of each racial/ethnic group increased in professional fields so did their logged income in my analysis for all years, and in my analysis of pre-recession and during/post-recession.

I also hypothesized that that the collective Black group would experience deeper income decreases than the buffer group. My findings for the STEM fields and professional fields partially supported this hypothesis. Mexican women did indeed experience deeper wage penalties than the buffer group. However, Black women's wages were more closely aligned with Puerto Rican women's wages and in some cases, Cuban women's wages.

Finally, in order to test Bonilla-Silva's theory, I hypothesized that the less assimilated a woman was, the deeper her wage decreases would be. Again, my findings partially supported this hypothesis for both the STEM fields and the professional fields. Those who were least assimilated has either the deepest wage penalties or the smallest wage gains, while those who were somewhat assimilated and more assimilated had the lowest wage penalties and the deepest wage gains. However, those who were the most assimilated had very little mean logged incomes differences from U.S. born women, even when less assimilated women experienced wage gains.

I also had three hypotheses to test Alba's theory of non-zero sum mobility. First I hypothesized that during the pre-recession time period, women of color would experience a decreased wage gap. However, with the exception of Cuban women in professional fields, women of color experienced significantly lower mean logged incomes in spite of the strong economic time period. I also hypothesized that women of color would experience an increased wage gap in the during/pre-recession time period. This hypothesis proved to be false, as women of color experienced slight decreases in wage penalties even in tough economic times. Finally I hypothesized that from 2001 to 2007 all women would experience wage increases regardless of assimilation status. This hypothesis proved to be true for the somewhat assimilated and more assimilated women, and had mixed support for the least assimilated and the most assimilated women.

CHAPTER 7: DISCUSSION AND CONCLUSION

The goal of this project was two-fold. The first goal was to integrate intersectionality theory with sociological race theories in order to help explain variations in women's labor market outcomes by race and ethnicity, and by assimilation. Both Bonilla-Silva and Alba offer theories that are easily applicable to the examination of the labor market, and both the theory of tri-racialization and the theory of non-zero sum mobility fit well with intersectionality theory. Intersectionality theory suggests that the lives of all women are not the same just by virtue of shared gender. In the same vein, Bonilla-Silva suggests that the lives of people of color and immigrants are not all the same just by virtue of sharing a marginalized status. Alba's theory does not address the complexities of gender, race, and immigration in itself, yet combined with intersectionality theory helps explain how labor market outcomes may vary for different populations across economic periods.

Combined, the three theories help to explain not only variations by race/ethnicity, but also variations by assimilation.

The second goal of this project was to examine specific variations by race, ethnicity, and assimilation in STEM fields and professional fields. This project serves as a methodological example of the application of intersectionality theory, making use of the combination of three theories in a manner that has not been done before, and adds to two growing bodies of literature by disaggregating subgroups of Latinas and by examining outcomes for women of color in STEM fields.

In order to address the two goals of this project I used IPUMS data, a subset of Census data, years 2001 to 2011. IPUMS data not only has good measures of occupation

and income, it also has good measures of both subsets of Latinas and indicators of assimilation. By using IPUMS data I was also able to examine labor market outcomes between two different time periods, pre-recession and during/post-recession. In the rest of this chapter I will discuss the major findings from this project and the examination of women's racial and ethnic variations in STEM and professional fields.

Black Women's Labor Market Outcomes

Black women are more likely than white women to be employed in STEM/STEM skilled fields. In fact, while White women comprise the majority of STEM workers, Black women, in spite of being a much smaller proportion of the STEM labor force, have increased odds of being a STEM worker. I suspect that this is in part due to the recent efforts of government and educational institutions to increase women and minorities in STEM (ADVANCE: Increasing the Participation and Advancement of Women in Academic Science and Engineering Careers; NGCP: The National Girls Collaboration Project). A second possible explanation for Black women's representation in STEM fields is their over-representation as single head of household in the labor force. Given that many Black women are solely responsible for families, we may be seeing a trend of Black women moving from service work to STEM and STEM skilled fields as their education increases at the same time we see the Latina population grow and be more and more represented in service work. However, while Black women have good odds of being in STEM, they do not see income rewards. The increased odds of being in the STEM labor force do not result in increased incomes. This is an important social justice issue because STEM workers have higher average incomes than non-STEM workers (Executive Office of the President 2013).While increasing Black women in STEM fields

serves as a growing resource in this country's efforts to increase the national economy and to increase national innovation, an increase in Black women in STEM has the potential to augment the median income for a population that has traditionally been at the lowest end of the economic hierarchy.

While Black women are faring well in STEM fields, they are not experiencing the same successes in professional fields. Black women continue to find themselves under represented in the professional labor force, relative to white women. While this is not surprising considering that Black women have historically been under-represented in professional fields, this finding suggests that even in today's increased access to education and post-Civil Rights that Black women continue to face barriers to traditional modes of mobility. Even, when Black women do find themselves in professional positions, they do not experience a positive economic payoff. However, the disparity between Black women's representation in STEM fields and their representation in professional fields suggests a continued devaluation of Black women that may be connected to consistent individual and structural racism.

Ripe for further research is the possibility of an association between Black women's representation in technology based fields versus their under-representation in subjective social systems, such as management. Even when controlling for education, Black women are not well represented in the professional labor market at the same rate as their White, Puerto Rican, and Cuban counter parts. According to both the theory of tri-racialization and the theory of non-zero sum mobility Black women should both be underrepresented in STEM and professional fields, and be under paid in each. I suspect that Black women may be seeing their better representation in the STEM skilled fields

like radiology technicians and medical assistants, rather than the traditional STEM fields such as engineers and architects. It may also be possible that anti-immigrant sentiment plays a role in a preference of Black women of immigrant women and Latinas.

Mexican Women's Labor Market Outcomes

In contrast to Black women, Mexican women have very low odds of being employed in both STEM fields and professional fields. In fact, all other racial and ethnic groups have much better chances of working in both fields than Mexican women. However, while Mexican women are not represented in STEM fields and professional fields at the same rate as other women, they did experience increases in the STEM labor force following the economic recession. Yet, similar to Black women, they do not see the same during/post-recession increases in professional fields. Additionally, Mexican women do not see the same financial returns to their labor in the STEM fields and professional fields that other women do. This may be in part due to the youthful age of the Mexican labor force. However, even controlling for age as a proxy for experience in the labor market, and controlling for educational level, Mexican women still remain under-represented in the STEM and professional fields, and remain under-paid. Even when considering assimilation, Mexican women do not see the same increases in occupation and income that most women do. However, another body of work suggests that anti-immigrant sentiment is flourishing in this society, and that Mexican immigrants, and even U.S. born Mexicans, bear the burden of U.S. nativist prejudice (Kunovich 2013). Is there an association between ethnic composition of the labor market or returns to labor, and anti-immigrant sentiment? This question is worthy of further research. Intersectionality and multiplicative disadvantage may be useful in explaining why

Mexican women see lower representation in both fields and lower wages in both fields. Not only are Mexican women a marginalized ethnic group and may be experiencing structural racism by virtue of group belonging, their marginalized status in the labor market may also be impacted by anti-immigrant sentiment. In addition to anti-immigrant sentiment, skin tone may be a factor in Mexican women's in the labor market outcomes. Though impossible to test for skin tone with available data, Bonilla-Silva's theory of tri-racialization may apply here. Mexican women may indeed be suffering in the labor market from inherent racism surrounding Mexican immigrants, and from pervasive stereotypes that suggest that Mexican women will work hard for less. The stereotypes of Mexican women's work and pay may be directly tied to their immigration history and the U.S.'s practice of recruiting and maintaining Mexican workers in low skill, low pay jobs. In addition to being a young, possibly less assimilated immigrant group, and often times darker skinned, Mexican immigrants do not have the same support for immigration as the Cuban counter parts did. The combination of these various factors may be having a profound impact on Mexican women and work.

Puerto Rican Women's Labor Market Outcomes

While relative to White women and Black women Puerto Rican women find themselves under-represented in STEM fields, they do have higher odds of being employed in the STEM labor force compared to White women than other Latinas compared to White women, especially compared to Mexican women. Similarly, Puerto Rican women find themselves either experiencing higher wage gains for labor market participation or lower wage penalties than their Mexican and Cuban counter parts. And while relative to Black women and Mexican women, Puerto Rican women are more

likely to be employed in the professional labor force, they remain less likely to hold professional positions than White women and Cuban women. However, when Puerto Rican women are employed in professional positions they do receive higher returns than Black women and Mexican women. Bonilla-Silva's theory of tri-racialization may also be useful here in explaining why Puerto Rican women are not better represented in professional fields. Indeed, regarding professional fields, Puerto Rican women may be members of the collective black. While I cannot test for skin tone with these data, racism may play a role in cementing darker skinned Puerto Rican women in lower status and lower paying occupations. Additionally, Puerto Rican women may be seeing penalties in the labor force are also tied to their immigration history and the U.S.'s colonization of Puerto Rico.

Island-born Puerto Rican women have similar representation in STEM fields as their main-land born counter parts. Though not at parity with Black women, Island-born Puerto Rican women are employed in STEM fields more often than Mexican women and Cuban women. And while their gains in income are about half that of main-land born Puerto Rican women, when there is a wage penalty, it is consistent with main-land born women. In contrast, Island Puerto Rican women fared well in professional fields, though they saw minimal returns. And while they experienced little wage losses in weak economic times, they also did not see high returns to labor pre-recession. Much of the literature suggests that because Island-born Puerto Rican women are both U.S. citizens and born outside of mainland culture that it is difficult to treat them as U.S. born. But because they do not face the same barrier to migration as other Latinas, that they cannot be treated as foreign born. My findings suggest that while Island-born Puerto Rican

women do not have the same deficits in labor market outcomes as Mexican women, that they indeed do not see the same returns to labor as other U.S. born women.

Cuban Women's Labor Market Outcomes

Cuban women are not as well represented in STEM fields as Black women, but not as under-represented as Mexican women. However, they did see consistent gains in representation in STEM fields during/post-recession. In spite of their occupational gains, Cuban women experienced wage loss during/post-recession, even when other women experienced gains.

While Cubans are not well represented in STEM fields, they are overwhelmingly well represented in professional fields. No other racial/ethnic group in this study is as strongly represented in professional fields as Cuban women. Cuban women also have the highest returns to labor by far, though they do experience some wage loss in the during/post-recession period when not all women in this study do. It is possible that Cuban women see better outcomes in the labor market than other Latinas do because they have higher levels of education and their higher socio-economic status fueled, in part, by their legacy of U.S. government supported immigration and their reprieve from anti-immigrant sentiment and structural racism. It is also possible that they do not suffer the same skin tone penalties that darker skinned Latinas suffer from. Cuban women may indeed be the buffer group that Bonilla-Silva references. Their lighter skin tones, higher levels of education, and social and cultural capital from a legacy of successful immigration and assimilation may work together to provide Cuban women access to the professional arena and to higher wages than other Latinas who are lighter skinned, have

lower levels of education, and who are entering the workforce in a society rich with anti-immigrant sentiment.

Nativity, Assimilation, and Labor Market Outcomes

With the exception of Black women, foreign born women have the highest representation in STEM fields, though they did experience occupational loss during/post-recession, when some U.S. born experienced gains. However, foreign born women did experience significant wage penalties for increases in representation. And when most women were seeing healthy wage increases, foreign born women's gains were nominal. Foreign born women also had strong representation in professional fields, though not as strong as Cuban women. And again, similar to STEM fields, foreign born women had high odds of being employed in professional fields, but experienced wage losses for increases representation when other groups did not, and very nominal wage increases, relative to the healthy increases of other women. Simply put, foreign born women experienced wage penalties for increased representation in both occupational categories. I suspect that the intersection of gender and nativity may be impacting foreign born women's wages in the assumption that foreign born laborers will work for less, especially foreign born women. Foreign born women may be experiencing a multiplicative disadvantage as both women of color and foreign born women that has real life consequences for wage and salary. In a society that devalues women of color to begin with, foreign born women may not be seeing the same wage gains as other women, or may experiencing deeper wage penalties than other women because the labor market may not value their labor and expect foreign born women to work for less.

Assimilating women had high odds of being STEM fields which is consistent with the odds for foreign born women. However, I did have one surprising finding. Contrary to what I hypothesized based on theory and previous literature; the most assimilated women did not have the highest odds of being in STEM fields. This is likely due in part to the government and educational institutions focus on recruiting women and minorities into the STEM fields via access to education that overlooks the older demographic of immigrant women. And while assimilating women had high odds of being in STEM fields, they also experienced wage penalties for increased representation, especially the least assimilated women.

Conclusion

This project sought to do two things. First, to make a contribution to the literature by integrating intersectionality theory with race relations theory in order to better explain how women's labor market outcomes vary by race, ethnicity, and assimilation. Important to this study, and one of its primary contributions to the women and work literature, was the disaggregation of Latina subgroups. One of my key findings in addressing this goal was that our increasingly growing and young Mexican labor force is not finding itself in to the STEM labor force or the professional labor force. It is not surprising to see women of color under-represented in professional fields, as they have historically been left out of that labor force. However, given that we have seen a surge in government and educational initiatives to increase women of color and minorities in STEM fields in the last two decades that has happened simultaneously with the growth of the Mexican population in the last twenty years, Mexican women should not be as underrepresented in the STEM labor force as I found them to be in this study. One of the unique attributes of

this study and its contribution to the intersectional literature is the assimilation index. Considering that Latinas make up such a large proportion of the labor force today, we cannot ignore assimilation when examining the labor market outcomes of women. Of the three Latina subgroups in my study, Mexican women are the largest. Considering the robust growth of the Latina population in the last couple of decades, we must considering issues of assimilation when disaggregating Latinas in analysis. Bonilla-Silva would possibly suggest that Mexican women may be seeing wage penalties because their assimilation status maintains their position as members of the collective black.

The second goal of this study was to explain in detail the racial and ethnic variations in the STEM and professional fields. Here, I offered a second major contribution to the literature by including STEM skilled jobs in the STEM fields. STEM skilled jobs are traditionally overlooked in an examination of STEM fields, yet workers in STEM skilled fields earn higher than average incomes. There were several key findings that I would like to highlight. First, Black women are surprisingly well represented in STEM fields though they experience wage penalties to their labor in STEM. On the other hand, Black women are under-represented in professional fields. Second, Puerto Rican women, while having lower odds of being employed in STEM than White women or Black women, have higher odds than their Mexican and Cuban counter parts. And like Black women, Puerto Rican women are under-represented in professional fields, relative to White women and Cuban women. These findings suggest that one, either the targeted efforts of recruiting women and minorities into the STEM fields is working to some extent, at least for two populations, or two, that STEM fields are innately more diversity friendly. I suspect that this may be due to the STEM field's

reliance on hard skills and the professional field's reliance in soft skills. A third important finding here was that while foreign born women are well represented in the STEM labor force and the professional labor force, they do not benefit from the same wage returns that U.S. born women benefit from, and they face steeper wage penalties than U.S. born women face. I suspect that anti-immigrant sentiment may be at work here. The question remains, is the relationship between assimilation the same for foreign born Latinas as it is for foreign born Asian women.

My findings have some important implications that I would argue, need to be addressed from a three tiered approach: policy, programming, and practice. Here, I will focus on what we can do in the education arena from a programming and practice perspective. It is common knowledge that education opens doors professionally and increases income. And while we have seen enrollment in college increase as a whole, and accessed by previously excluded populations in the last several decades, there are still groups that are severely under-represented in college and therefore, locked out of professions such as STEM fields and STEM skilled fields that require education and technical training. The U.S. government and state and local educational institutions have worked jointly and as individual entities to create and fund Go To College programming and STEM enrichment programs such as the Las Vegas Latin Chamber of Commerce Latina/o Youth Leadership Conference (lvlcc.com), the College Preparatory Program at the Harlem Children's Zone (htc.org), and Girls Who Code (girlswhocode.com). Below I discuss the three programs and their contributions to creating a college going culture.

The Latina/o Youth Leadership Conference (LYLC) is a full immersion youth leadership conference that brings high school juniors and seniors to University of

Nevada, Las Vegas campus for a week-long training in college success skills, leadership training, professional development, and social networking that introduces students to the process of connecting to campus student leaders and their organizations. One of the LYLC's strengths is that all of the work is done from a culturally relevant context. So not only do students learn many college success strategies, they learn these strategies with their peers and have an opportunity to reaffirm and celebrate their cultural identities. Additionally, the LYLC is a safe space to learn strategies for navigating a system that has historically excluded the Latina/o student population. The LYLC is now in its 21st year and has successfully served over 1,000 students. Many of its alumni are leaders in the Las Vegas Community, for example, Nevada State Assembly Woman and Lt. Governor candidate, Lucy Flores, and Nevada State Senator, Ruben Kihuen.

The Harlem Children's Zone (HCZ) is a cradle to college program that works to change poverty through education by address the needs of both children and community. Beginning in 1970, HCZ is now national model in the fields of education, youth and community development, and the fight against poverty. The HCZ has a five tiered educational program that encompasses early childhood, elementary school, middle school, high school, and college, and boasts a seamless pipeline that ensures that every student will enroll in and succeed in college. The HCZ served 7,738 children in the educational pipeline in 2013 alone.

Girls Who Code is a program working to bring computer science training to one million young women by the year 2020. Girls Who Code is working towards a goal of realizing gender parity in the 1.4 million computer specialist jobs that will be open by the year 2020. Established in 2012, Girls Who Code expanded its summer immersion

program to eight programs in five cities and plans to substantially increase their reach in the summer of 2014. Girls Who Code uses a model that combines robotics training, web design, and mobile development with high-touch mentorship and exposure with the nation's top female computer science engineers and entrepreneurs.

These programs have proven to be successful with the college bound students that they serve. However, in order to reach a broader audience, I would argue that these initiatives, like the Harlem Children's Zone, must extend beyond high schools and middle schools. They need to offer college bound and college readiness programs as early as elementary school. While there are many successful programs like the ones I just discussed, one criticism of have of them is that they tend to serve the already college bound student. Students who already have some skills for success and some leadership skills are frequently the students that access and using Go To College programming. This is problematic because students who are underprepared and have few college success skills may not be accessing college readiness programs, and they are the very students that need the programs the most. This is especially a concern regarding STEM/STEM skilled disciplines because under-preparedness is often cited as a reason that students of color are not engaging in STEM studies and cannot remain in rigorous STEM programs.

Additionally, and especially relevant to marginalized racial and ethnic populations like the Mexican population, Go To College initiatives need to move beyond the school setting and into communities and homes. For many marginalized populations, when you serve a student, you are serving an entire family that does not come equipped with the same cultural capital that inter-generational college going families come equipped with. I envision this type of family outreach to take a couple different forms. First, by intensive

outreach to community events. For example, at cultural events and church events. Having a presence at in social settings may be a way for outreach specialists to reach marginalized groups and begin to build rapport. Second, after building rapport, outreach specialists should make themselves available to meet in family homes. Again, when we serve marginalized students, we need to serve the whole family. The family home may be a safe space for Latina/o families, for example, to gain valuable information about applying for college and finding financial aid compared to the traditional institutional structure that has historically excluded them.

A second and equally critical piece of increasing access to education in an effort to increase representation in STEM and professional fields for women of color is to address the practice issue of cultural competency. Just as my data suggest that labor market outcomes need to be addressed from an intersectional perspective as they vary by race and ethnicity, the educational experience also needs to be addressed from an intersectional perspective. Education professionals need to be ready to serve, not just first generation college students, but also student from very diverse cultural backgrounds, low incomes students, and their families.

Increasing access to education and success in education for students of color not only serves to address important social justice issues, but it is also in the nation's best interest. As of 2012 the Latina/o population made up 16.9 percent of the total U.S. population and the Black population made up 13.1 percent of the total U.S. population (http://www.census.gov/population/). Given that these populations that are such a large proportion of the total U.S. population, maintaining an undereducated and underemployed status means that the U.S. is missing out on valuable labor force

resources. The U.S. government recognizes the need to remain internationally competitive in the sciences and innovation, and that women and workers of color are resources in this endeavor, which is why we see many government supported initiatives in STEM. However, increasing labor force competitiveness for people of color can also have economic benefits. Between the years of 2000 and 2010 the Hispanic population in the U.S. experienced the largest increase in buying power at 108%, with an expected $1.2 trillion contribution to the U.S. market in 2013. And from 2000 to 2010 the Black/African American population experienced a 60% increase in its buy power and is expected to contribute $1 trillion to the U.S. market in 2013 (Selig Center). Given that the Latina/o population is projected the makeup about one third of the U.S. population by 2050 (PEW Research Institute), investing in educational and labor market future of this particular population is an investment in the U.S.'s future. People of color are increasingly becoming a larger part of the national market.

I conclude from this project that women do indeed experience variations in employment in STEM and professional fields by race, ethnicity and assimilation, and that women's returns to labor in STEM and professional fields varies across race, ethnicity, and assimilation. The theory of tri-racialization and the theory of non-zero sum mobility integrated into an intersectional framework help to explain these variations. While there is still much left to be learned about women's labor market experiences in STEM and professional fields, what we can say from these findings is that race and ethnicity are still a meaningful factor impacting the experiences of women in the workforce.

APPENDIX

STEM/STEM Skilled Fields

Computer Scientists and Systems Analysts
Computer and Information Research Scientists
Computer Systems Analysts
Information Security Analysts
Computer Programmers
Computer Software Engineers
Software Developers, Applications and Systems Software
Web Developers
Computer Support Specialists
Database Administrators
Network and Computer Systems Administrators
Computer Network Architects
Computer Occupations, All Other
Network Systems and Data Communications Analysts
Actuaries
Mathematicians
Operations Research Analysts
Statisticians
Miscellaneous Mathematical Scientists and Technicians
Miscellaneous mathematical science occupations, including mathematicians and statisticians
Architects, Except Naval
Surveyors, Cartographers, and Photogrammetrists
Aerospace Engineers
Biomedical and agricultural engineers
Chemical Engineers
Civil Engineers
Computer Hardware Engineers
Electrical and Electronics Engineers
Environmental Engineers
Industrial Engineers, including Health and Safety
Marine Engineers and Naval Architects
Materials Engineers
Mechanical Engineers
Mining and Geological Engineers, Including Mining Safety Engineers
Nuclear Engineers
Petroleum Engineers
Petroleum, mining and geological engineers, including mining safety engineers

Engineers, All Other
Miscellaneous Engineers including nuclear engineers
Drafters
Engineering Technicians, Except Drafters
Surveying and Mapping Technicians
Agricultural and Food Scientists
Biological Scientists
Conservation Scientists and Foresters
Medical Scientists
Medical Scientists, and Life Scientists, All Other
Astronomers and Physicists
Atmospheric and Space Scientists
Chemists and Materials Scientists
Environmental Scientists and Geoscientists
Physical Scientists, All Other
Economists
Market and Survey Researchers
Psychologists
Sociologists
Urban and Regional Planners
Miscellaneous Social Scientists and Related Workers
Miscellaneous social scientists including sociologists
Miscellaneous Social Scientists, Including Survey Researchers and Sociologists
Agricultural and Food Science Technicians
Biological Technicians
Chemical Technicians
Geological and Petroleum Technicians
Geological and Petroleum Technicians, and Nuclear Technicians
Nuclear Technicians
Other Life, Physical, and Social Science Technicians
Miscellaneous life, physical, and social science technicians, including social science research assistants and nuclear technicians
Miscellaneous Life, Physical, and Social Science Technicians, Including Social Science Research Assistants
Chiropractors
Dentists
Dieticians and Nutritionists
Optometrists
Pharmacists
Physicians and Surgeons
Physician Assistants

Podiatrists
Registered Nurses
Audiologists
Occupational Therapists
Physical Therapists
Radiation Therapists
Recreational Therapists
Respiratory Therapists
Speech Language Pathologists
Therapists, All Other
Other Therapists, Including Exercise Physiologists
Veterinarians
Registered Nurses
Nurse Anesthetists
Nurse Practitioners, and Nurse Midwives
Health Diagnosing and Treating Practitioners, All Other
Clinical Laboratory Technologists and Technicians
Dental Hygienists
Diagnostic Related Technologists and Technicians
Emergency Medical Technicians and Paramedics
Health Diagnosing and Treating Practitioner Support Technicians
Health Practitioner Support Technologists and Technicians
Licensed Practical and Licensed Vocational Nurses
Medical Records and Health Information Technicians
Opticians, Dispensing
Miscellaneous Health Technologists and Technicians
Other Healthcare Practitioners and Technical Occupations
Nursing, Psychiatric, and Home Health Aides
Occupational Therapy Assistants and Aides
Physical Therapist Assistants and Aides
Massage Therapists
Dental Assistants
Medical Assistants
Medical Transcriptionists
Pharmacy Aides
Veterinary Assistants and Laboratory Animal Caretakers
Phlebotomists
Medical Assistants and Other Healthcare Support Occupations, except dental assistants

Professional Occupations

Chief Executives
Chief executives and legislators
General and Operations Managers
Legislators
Advertising and Promotions Managers
Marketing and Sales Managers
Public Relations Managers
Public Relations and Fundraising Managers
Administrative Services Managers
Computer and Information Systems Managers
Financial Managers
Human Resources Managers
Compensation and Benefits Managers
Human Resources Managers
Training and Development Managers
Industrial Production Managers
Purchasing Managers
Transportation, Storage, and Distribution Managers
Farm, Ranch, and Other Agricultural Managers
Farmers, Ranchers, and Other Agricultural Managers
Farmers and Ranchers
Constructions Managers
Education Administrators
Engineering Managers
Architectural and Engineering Managers
Food Service Managers
Funeral Directors
Gaming Managers
Lodging Managers
Medical and Health Services Managers
Natural Science Managers
Postmasters and Mail Superintendents
Property, Real Estate, and Community Association Managers
Social and Community Service Managers
Emergency Management Directors
Miscellaneous managers including postmasters and mail superintendents
Miscellaneous Managers, Including Funeral Service Managers and Postmasters and Mail Superintendents
Agents and Business Managers of Artists, Performers, and Athletes

Buyers and Purchasing Agents, Farm Products
Wholesale and Retail Buyers, Except Farm Products
Purchasing Agents, Except Wholesale, Retail, and Farm Products
Claims Adjusters, Appraisers, Examiners, and Investigators
Compliance Officers, Except Agriculture, Construction, Health and Safety, and Transportation
Compliance Officers
Cost Estimators
Human Resources, Training, and Labor Relations Specialists
Human Resource Workers
Compensation, Benefits, and Job Analysis Specialists
Training and Development Specialists
Logisticians
Management Analysts
Meeting and Convention Planners
Meeting, Convention, and Event Planners
Fundraisers
Other Business Operations Specialists
Market Research Analysts and Marketing Specialists
Business Operations Specialists, All Other
Accountants and Auditors
Appraisers and Assessors of Real Estate
Budget Analysts
Credit Analysts
Financial Analysts
Personal Financial Advisors
Insurance Underwriters
Financial Examiners
Credit Counselors and Loan Officers
Tax Examiners and Collectors, and Revenue Agents
Tax Preparers
Financial Specialists, All Other
Counselors
Social Workers
Miscellaneous Community and Social Service Specialists
Probation Officers and Correctional Treatment Specialists
Social and Human Service Assistants
Miscellaneous Community and Social Service Specialists, Including Health Educators and Community Health Workers
Clergy
Directors, Religious Activities and Education

Religious Workers, All Other
Lawyers
Lawyers, and judges, magistrates, and other judicial workers
Judges, Magistrates, and Other Judicial Workers
Judicial Law Clerks
Paralegals and Legal Assistants
Miscellaneous Legal Support Workers
Postsecondary Teachers
Elementary and Middle School Teachers
Secondary School Teachers
Special Education Teachers
Archivists, Curators, and Museum Technicians
Librarians
Library Technicians

ALL OTHER OCCUPATIONS WERE CODED AS SERVICE/OTHER

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CURRICULUM VITAE

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EDUCATION

June 2014 *Expected*	Ph.D., Sociology, University of Nevada, Las Vegas Dissertation: "*Intersectionality and Labor Market Outcomes: Women's Racial and Ethnic Variation in Professional Occupations and STEM Fields, 2001 to 2011*" Advisory Committee: Christie Batson, Ph.D., Chair Department of Sociology, University of Nevada, Las Vegas David R. Dickens, Ph.D., Member Department of Sociology, University of Nevada, Las Vegas Andrew Spivak, Ph.D., Member Department of Sociology, University of Nevada, Las Vegas Sandra Owens. Ph.D., Graduate College Representative School of Social Work, University of Nevada, Las Vegas
2013	Graduate Certificate, Women's Studies, University of Nevada, Las Vegas "*Feminist Demography as Praxis: The Process of Examining Income Variations of Mexican, Puerto Rican, and Cuban Women*." Lynn Comella, Ph.D., Advisor
2008	Master of Social Work, University of Nevada, Las Vegas
2007	Bachelors of Social Work, University of Nevada, Las Vegas

TEACHING AND RESEARCH INTERESTS

Race and Ethnicity
Women and Minorities in STEM Fields
Racialized Disparities in Access to Education & Educational Outcomes
College Success
Minority Serving Institutions
Social Science Research Methods

AWARDS

2013	Outstanding Graduate Student Teaching Award, Department of Sociology, University of Nevada, Las Vegas

COURSES TAUGHT

Ethnic Groups in Contemporary Society
Instructor, University of Nevada, Las Vegas
Spring 2014, Spring 2013, Fall 2012

Racial and Ethnic Conflict in the United States
Instructor, University of Nevada, Las Vegas, *Distance Education (Blackboard)*
Fall 2013, Spring 2013, Fall 2012, Spring 2012, Fall 2011

Techniques of Social Research
Lab Instructor, University of Nevada, Las Vegas
Spring 2014

Statistics for Social Sciences
Teaching Assistant, University of Nevada, Las Vegas, *Distance Education (Blackboard)*
Spring 2011

Advanced Analytical Techniques
Lab Instructor, University of Nevada, Las Vegas
Spring 2011

Gender and Society
Instructor, University of Nevada, Las Vegas, *Distance Education (Blackboard)*
Spring 2012
Teaching Assistant, University of Nevada, Las Vegas, *Distance Education (Blackboard)*
Summer 2011

Introduction to Sociology
Instructor, University of Nevada, Las Vegas
Fall 2013, Fall 2011, Spring 2010

Introduction to Women's Studies
Discussion Leader, University of Nevada, Las Vegas
Fall 2009

Race, Class, and Gender
Instructor, University of Nevada, Las Vegas
Fall 2013
Discussion Leader, University of Nevada, Las Vegas
Fall 2008

CURRENT AND PREVIOUS POSITIONS

January 2010 to Present	Graduate Assistant (Teaching), UNLV, Department of Sociology, Las Vegas, NV

May 2012 to 2013	Program Evaluation Consultant, Latin Chamber of Commerce Community Foundation, Las Vegas, NV
August 2012 to 2013	Research Assistant (Social Networking Analysis), Department of Sociology and the Lincy Institute, UNLV, Las Vegas, NV
January 2007 to 2010	Programming Development/ Evaluation and Community Engagement, UNLV Diversity Initiatives, Office of the Vice President for Diversity and Initiatives, and Office of Civic Engagement and Diversity

GRANTS

October 2011 *Nevada System of Higher Education GotoCollege Grant* ($260,000 including matched funds). To fund the Leadership Education for the Advancement of Diverse Student Success (L.E.A.D.S.S. Initiative), Role: Co-Author and Program Evaluator.

October 2010 *Nevada System of Higher Education GotoCollege* Grant ($280,000 including matched funds). To fund the Leadership Education for the Advancement of Diverse Student Success (L.E.A.D.S.S. Initiative), Role: Co-Author and Program Evaluator.

July 2010 *Nevada System of Higher Education College Access Grant* ($21,000). To Fund the Multicultural Center Parent Advocate for Student Success Program (M.C.P.A.S.S.). Co-Author and Program Evaluator.

DIVERSITY AND COMMUNITY ENGAGEMENT

Since the Spring of 2007 I have been involved in on-going diversity and community engagement initiates that work to *create a college- going culture* in Southern Nevada, *increase access to higher education* for underrepresented groups, and *create a more inclusive campus environment*. I have served in three broad capacities: as a student intern or graduate assistant, as UNLV professional staff, and in a volunteer/service capacity. In these roles I have worked, or currently work, for the Office of the Vice President for Diversity Initiatives (previously the Office of the Vice President for Diversity and Inclusion) and the Office of Civic Engagement and Diversity (previously the Office of Student Diversity Programs and Services). The following is a selection of my work:

- Program development, implementation and assessment with UNLV faculty, staff, and students; Las Vegas business and political leaders; and Las Vegas community members. Including professional conferences, family engagement programming, GotoCollegeNevada programming, and student leadership conferences.
- Diversity trainings delivered to UNLV faculty, staff, and students; and Las Vegas community members. Including Diversity 101, Ally Training, and LGBTQ Safe Zone Training.
- Minority Serving Institutions (MSI) Task Force. Designed to develop and sustain infrastructure that supports an increasing diverse student body, and to

pursue/sustain Title III and Title V Designation from the U.S. Department of Education.

- Campus Diversity Reporting. Analysis and Reporting on campus diversity. Including student enrollment trends by ethnicity and faculty trends by gender and ethnicity.
- Grant writing.
- Research Activities. L.E.A.D.S.S. assessment tool development, L.E.A.D.S.S. data base management, L.E.A.D.S.S. program evaluation; Campus Diversity Climate Survey development, implementation, and analysis. Campus Diversity Climate focus groups.

PROFESSIONAL PRESENTATIONS/INVITED LECTURES &TALKS

April 2014	Invited lecture: The Construction of Reality: Race and Ethnicity, for University of Nevada, Las Vegas Introduction to Sociology
October 2013	Diversity 101: Practicing Cultural Competency, for University of Nevada, Las Vegas School of Social Work
September 2013	Invited lecture: Feminist Demography as Praxis, for the University of Nevada, Las Vegas Feminist Research Methods
September 2013	Invited lecture: Cultural Constructions, for Nevada State College Introduction to Sociology
September 2012	Diversity 101: Practicing Cultural Competency, for University of Nevada, Las Vegas Academic Success Center
October 2012	Invited lecture: The Construction of Reality: Race and Ethnicity, for Nevada State College Introduction to Sociology
November 2011	Interviewed for the *Las Vegas Weekly Josh Hates Everything Podcast* Nov.18, 2011 about the fourth movie in the *Twilight* Saga and my research on the *Twilight* Phenomenon.
August 2011	American Sociological Association, Las Vegas, NV; Smedley, Anna C. and Shannon M. Monnat. *Losing Ground? Examining the Racial Wage Gap between High-, Middle-,and Low-Income Earning Women from 1988 to 2009.* Co-Presenter
March 2010	Pacific Sociological Association, Oakland, CA; Smedley, Anna C. *The Meaning of Twilight: The Readership of Middle Aged Women.* Presenter
March 2010	Invited lecture: Feminist Methods/Feminist Methodology, for University of Nevada, Las Vegas Research Methods in Sociology

September 2008	National Association of Social Workers, Las Vegas, NV; *Understanding the Coming-Out Process* Co-Presenter
June 2008	Latina/o Youth Leadership Conference, Las Vegas NV; *Managing Multiple Identities in College.* Co-Presenter

MANUSCRIPTS/REPORTS

Shannon M. Monnat, Anna C. Smedley, and Fatma Nasoz"Identifying and Describing the Network of Health, Education, and Social Service Non-profit Organizations in Southern Nevada." The Lincy Institute. http://www.unlv.edu/lincyinstitute/research-policy-briefs

Takashi Yamashita, Timothy S, Melnyk, Jennifer R. Keene, Shannon M. Monnat, and Anna C. Smedley. "Ethnicity in Ageing America: A Tale of Ethnicities and Life-course." *Forthcoming in* "Life-course Perspective on Ageing Populations: A Critical and International Approach."

MANUSCRIPTS IN PROGRESS

Smedley, Anna C. "Feminist Demography as Praxis: Engaging in the Process of Examining Women's Racial and Ethnic Variations in Income."

Smedley, Anna C. "Feminist Demography Gets Its Legs: How The Central Tenants of Feminist Research, Reflexivity and Addressing Power Differentials, Really Do Work in Demographic Research."

SERVICE

Current	Department of Sociology Undergraduate Studies Committee
Current	Department of Sociology Introduction to Sociology Committee
Current	Department of Sociology Cultural Competency Committee
Current	UNLV Minority Serving Institute (MSI) Task Force
Current	Outside Faculty Reader for Interdisciplinary Studies