Inequity in Accommodations: Minimizing Bias in Higher Education Disability Services

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Abstract

The number of students with disabilities in higher education has risen exponentially over the last 50 years as legislation (Section 504 of the Rehabilitation Act of 1973 and Americans with Disabilities Act of 1990) demanded that collegiate environments be made more accessible, largely through the provision of accommodations. In this study, I examine the disability accommodation decision-making process in higher education through a large-scale survey experiment with staff who work in disability services in U.S. colleges. I find evidence of racial bias, as well as disability specific bias – against those with ADHD. These biases appear in attitudes and expectations for the application process, but not when it comes to the provision of specific accommodations. Perhaps most importantly, I also show that the biases can be countered by correcting unconscious stereotypes about work ethic and/or through racial implicit bias training courses. The results thus have actionable implications for moving towards a more equitable allocation of disability services.

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Introduction

Americans with disabilities are one of the largest minority groups in the US, numbering more than 55 million people or nearly 19% of the population (Brault 2012). Disabled adults have higher unemployment rates, lower income, higher rates of poverty, and are less likely to enter higher education (Brault 2012, Wagner et al. 2005). While there has been extensive literature that looks into discrimination *against* those with disabilities (versus those without), this study is interested in discrimination *among* those with disabilities, specifically racial discrimination and disability specific discrimination. Because attaining a college degree is a predictor of lower rates of poverty, lower rates of unemployment, and higher income for individuals with disabilities, bias in access to higher education is a necessary focal point (Winsor et al. 2018).

In the 2015-2016 school year, 11% of all undergraduates at U.S. colleges reported having some kind of disability (U.S. Department of Education 2019). In a university setting, one part of support services is gaining access to accommodations which have been made much more accessible through Section 504 of the Rehabilitation Act of 1973, and the Americans with Disabilities Act of 1990 (ADA). The progress in accommodation provisions has allowed students with disabilities to be academically and socially successful in a university setting, which is, in part, reflected through the increasing number of enrolled students with disabilities over the last 40 years, rising to 11% from 2.6% in 1978 (National Center for Education Statistics 1998). However, it also demands that we be more attentive to whether the increasing distribution of accommodations and services has been done in an equitable manner, or whether bias is present, such that students are being allocated fewer resources because of their race or disability.

This study specifically examines bias against Black students as Black individuals with disabilities are less likely to be diagnosed, have lower college graduation rates, and have higher

unemployment rates relative to white individuals with disabilities (Anastasiou et al. 2017, Bureau of Labor Statistics 2020).These individuals often face discrimination in the diagnosis, treatment, and subsequent support of their disabilities by teachers and health care providers (Bussing et al. 2005, Guerrero, Rodriguez, & Flores 2011). Moreover, Black students, generally face discriminatory treatments in a university setting, such as in the classroom and extracurricular activities; this discrimination compounds for Black students with disabilities (Banks & Hughes 2013).

Institutional and structural racism built into American society plays a huge role in these racial inequities, however individual discrimination is also supremely important to unveil. Because of the breadth of policies governing right for individuals with disabilities, such as ADA and Section 504, individual administrators are responsible for determining who gets resources and services, interpreting and executing policy on the ground. The role of these individuals is articulated by Lipsky (1980), who coins the term "street-level bureaucrats" to describe the impact that individual administrators and bureaucrats can have due to the subjective and discretional nature of their work. Those who fall under this umbrella of street-level bureaucrats include teachers, police officers, social workers, and legal-aid lawyers, all of whom are forced to interpret policy and apply it to unique individual cases every day.

In higher education, Disability Service Offices are responsible for the provision of accommodations and other resources to students with disabilities. They embody the role of street-level bureaucrats as they execute policy governing equitable access to higher education for students with disabilities (e.g. ADA and Section 504). Individuals in these officers have wide discretion in their work to interpret ADA and Section 504 in order to provide students with disabilities with the support and accommodations that they need. Due to a change in the rules

governing federally mandated disability accommodations from high school to college, students are often dependent on Disability Service administrators to ensure that they have access to the accommodations that they need in order to be successful in a post-secondary institution. If Disability Service administrators unconsciously internalize stereotypes, such as poor work ethic, when labeling Black student with disabilities, it could further exacerbate the barriers that Black students with disabilities face in a university setting. The resultant bias could make Black students less likely than white students to receive the accommodation and support that they need for their disability. The results of this study also have implications under federal law as Title VII of the Civil Rights Act of 1964 specifically prohibits discrimination on the basis race, which undoubtedly extends to the provision of accommodations in post-secondary institutions.

In order to investigate bias in higher education, this study uses an experimental vignette survey sent to Disability Service administrators at post-secondary institutions across the United States, to measure the attitudes and behaviors of the individuals who make decisions concerning academic accommodations for student with disabilities. The study design is comprised of an experimental vignette that varies the race, disability, and work ethic of a student who is emailing a Disability Service Office with the purpose of understanding what accommodations would be available to them in college. This experimental setup presents a 2x2x2 design as follows: race (Black/white) x Disability (ADHD/visual impairment) x Work ethic (Hard work/no hard work), with each variable randomly and independently assigned to every respondent, presenting eight different treatment conditions. The vignette is followed by a set of questions that asks the respondent to assess their attitudes towards the student, their expectations for the application process, and what accommodations they believe that the student would receive. The aim of the study is to answer the question: Do those who work in Disability Services in higher education

exhibit biased decision-making based on 1) disability type, 2) race and/or 3) work ethic? Moreover, are there ways to counteract any biases that do exist?

This study finds evidence of racial bias and disability specific bias – against Black students and students with ADHD (as opposed to visual impairment). These biases appear in attitudes and expectations for the application process of receiving accommodations (including documentation submission), however not in the provision of specific accommodations. Black students and students with ADHD are seen as less deserving and have higher barriers to accessing accommodations, relative to white students and students with visual impairments, respectively. However, perhaps most importantly, the study also finds that these biases can be countered 1) by correcting unconscious stereotypes about work ethic of Black students and students with ADHD or 2) through racial bias training courses. The results thus provide veritable evidence for actionable implications, such as widespread implicit bias training courses, to ensure more equitable allocation of disability services.

In Chapter 1, we will first cover different models of disability that have evolved over time and dive into a brief overview of the policy that governs accessibility for students, with attention to how specific models of disability are cemented in legislation. Chapter 2 will take us through the experience of students with disabilities as they move through the education system, considering contrasting experiences of Black students and other Students of Color. In Chapter 3, the theory of Street-Level Bureaucracy is unpacked in an attempt to better understand the importance of the role of Disability Service administrators. Chapter 4 covers the grave racial inequities seen in the diagnosis, treatment, and support of individuals with disabilities and Chapter 5 turns our attention to what attitudes and stereotypes may be underlying this

discriminatory behavior. In Chapter 6, the method and design of the study is laid out and in Chapter 7 the results are articulated, and I explain the implications of these findings.

Often, many hold on to the hope that once a student has access to higher education, these institutions will function as an equalizing factor – holding onto the misconception that in one of the highest academic echelons, we offer equal opportunity regardless of identity. However, if we seek to create a more equitable society for People of Color, individuals with disabilities and other poor and marginalized folks, we *must* continue to combat racial and disability prejudice in higher education. The results of this study show that many Disability Service offices at colleges and universities around that nation are already taking significant steps through implicit bias training. This training has been successful in mitigating racial and disability stereotypes and discriminatory behavior. It is my hope that this study supports these individuals and their offices in their critical work, while providing an empirical bases on which to advocate for expanding access to implicit bias trainings and continuing to remedy this intersectional oppression.

Chapter 1

Disability: In Society and the Law

I. Models of Disability

As we start to think about the experience of students with disabilities in education and everyday life, it is necessary to reflect on the lenses through which society and institutions think about disability. This discussion will briefly touch on the different paradigms through which disability is discussed, in everyday life and in the law. While each of these models has their merits and downfalls, it is critical that we understand the constructs through which policy was written, as well as the models of disability enacted by students, faculty and staff at colleges and universities, specifically as we seek to study administrators at U.S. colleges. Within the field of disability studies, three models have been put forward: the medical model, the social model, and the universal model.

The medical model (also called the individual model) defines disabilities as defects or deficiencies that individuals have, which sets them apart from other "normal" people. Individuals who have these deficiencies can be identified, and the solution is to create policies to fix, treat, or care for these individuals (Barnes, Mercer, Shakespeare 1999). Often disability is seen as a "personal tragedy," or a horrible occurrence that random individuals are subjected to. In this case, individuals with disabilities are seen as passive victims of their impairment. This paradigm often ignores the actual desires and needs of those with disabilities, instead putting the onus on "experts" such as doctors and allied professionals to define the individual's needs and how they should be met (Scullion 2010). This is paralleled by medicalization of disability, which aims to "cure" or "treat" disabilities.

The social model came into the light as individuals with disabilities began boldy organizing and advocating for their rights (Oliver 2009). It focuses attention, not on the limitations of the individual, but on the social environment that fails to meet the needs of the individual. It acknowledges that the "disabling environment" is one that is artificial and constructed by humans for the needs of a certain population of individuals (Steele & Wolanin 2004). Disability is not seen as a personal tragedy; rather, it is seen as oppression put on a person by society. As an example, if someone has an impairment that prevents them from walking, it is the lack of ramps, elevators, or curb cuts that create a disabling environment which prevents them from functioning in the same way as someone who is able to walk (Brabazon 2015). This model also acknowledges that the impairments of an individual and their surrounding environment are constantly changing and evolving. Other academics go even further with the social model to argue for a post-modern view of disability, asserting that "if norms are a product of society and disability is defined as a departure from the norm, then disability is a social construct" (Williams 2001 p. 136).

The universal model advocates for an understanding of disability that "views impairments as existing along a continuum and does not separate the population into people with and without disabilities" (Schur, Kruse, & Blanck 2013 p. 12). When this binary between abled and disabled is loosened, issues of disability become a concern for society as a whole, not a burden reserved for the minority (Brabazon 2015). As with the social model, it emphasizes that disability is not a condition of stasis, rather focusing on the fact that all individuals may face a variety of different limitations throughout their lives. Universal design alludes to the wide range of accommodations and modifications that can be available to manage the diversity of needs presented by the populace. In this model, the difference in capability between individuals is not

the issue, but the issue is rather the discrimination in thinking and design that overlays these differences. In addition, it suggests that elements of universal design can be helpful to all people regardless of their impairments. For example, curb cuts were initially meant to help those in wheelchairs, but now assist those with luggage or other rolling items (Brabazon 2015).

While these models are crucial for interrogating our own understanding of disability and what it means to be a person with a disability, they also inform the construction of disability under the law. Federal legislation has a huge impact on the daily social, academic, and working lives of Americans with disabilities. However, in order to provide services to a specific subset of the population they also define "disability," effectively determining who is considered to have a disability, and who is not using a structure similar to the medical model. The following section will outline the decades of progress that activists have fought for in order to ensure equal rights for individuals with disabilities, with attention to the definitions of disability that these policies set forward, and what the limitations of these definitions may be.

II. Legislative Overview of Policy Protecting Disabled Individuals and Racial Minorities in Higher Education

In order to understand why the role of Disability Service administrators in supporting students with disabilities is so important, it is critical that we gain a deeper understanding of the laws and policies that are in place to protect and support those with disabilities. These laws create the framework for what Disability Service administrators are allowed and/or required to provide to each student with disabilities, the fundamental question remaining "How does the race, disability, and work ethic of a student affect the attitudes and behaviors od Disability Service administrators?"

A small caveat, this section will focus on *federal* initiatives rather than statewide policy because 1) federal disability policy has a greater impact on higher education institutions and 2) a national set of standards has important implications for this national study. In this section, we will pay respect to how far we have come in supporting students with disabilities, while taking a closer look at the gaps that were never filled during these historic developments. An emphasis will be placed on why these policies make the transition between high school and college so difficult, and we will conclude by looking at this history in the context of the development civil rights and racial justice policy in higher education.

a. History of Federal Disability Legislation (with specific attention to higher education)

The fight for policy that protects people with disabilities from discrimination in public and private institutions has been long and hard. Prior to the 1970s, there was practically no attention paid towards discrimination against people with disabilities on a federal or state level. The result was large gaps in unemployment and educational attainment. Investments were not made in elementary and post-secondary students with disabilities, and therefore very few were prepared for college-like environment, socially or academically (Rothstein 2010). The few who were, would find themselves encountering physical, social, and logistical challenges without a support infrastructure in higher education.

In 1973, an amendment to the Rehabilitation Act of 1954 was passed that prohibited federal employers (Section 501), federal contractors (Section 503), and recipients of federal financial assistance (Section 504) from discriminating against otherwise qualified individuals with disabilities (Taylor 2011). Because most educational institutions (primary through post-secondary) received federal funding, they were subjected to Section 504 of the Rehabilitation Act of 1973. However, students with disabilities did not immediately benefit from this

amendment. Not only was the amendment passed with very little press coverage, conferring 1) a lack of federal enforcement and 2) a lack of awareness of the rights of individuals with disabilities. Moreover, there wasn't a set of college-ready students with disabilities qualified to take advantage of this new policy, due to the previous lack of investment in primary and secondary education. (Rothstein 2010).

Just a few years later in 1975, President Ford signed into law the Education for All Handicapped Children Act, later renamed the Individuals with Disabilities Education Act (IDEA). This new piece of legislation required public schools K-12 to provide students with disabilities with comprehensive education. This policy largely informs the standards that public K-12 schools (not colleges or universities) are held to today. Two main components of this act are 1) Free Appropriate Public Education (FAPE) and 2) Least Restrictive Environment (LRE).[1]

First, FAPE requires that schools go far beyond standards of nondiscrimination towards students with disabilities. Public K-12 schools are required to provide the students with disabilities with an extensive range of resources that they may need to receive a strong secondary education. It also encompasses the "zero reject" policy, which dictates that no child can be denied a K-12 education *regardless of their disability*. Often this means making structural changes to their building, hiring new teachers, or buying technology. In order to implement these changes, schools are provided with federal funding. FAPE also encompasses the "Child find" policy in which school districts must actively identify, locate and evaluate all children who they believe may have a disability in order to determine need for special resources and services.

Second, Least Restrictive Environment requires that schools educate students with disabilities in classrooms with students without disabilities to the greatest extent possible. IDEA

[1] See Taylor (2011) for more on IDEA and its impact on students with disabilities

also requires schools to undergo a holistic process to create an Individualized Education Plan (IEP) for students with disabilities, unifying caretakers, teachers, and administrators in an understanding of the steps that will be taken to provide the best academic environment for the student.

Throughout the last five decades, there have been amendments to IDEA including ones that have allowed parents to have more say in the resources and services that their child receives and other amendments that require secondary institutions to help students with disabilities transition to post-secondary life (whether its higher education or employment). However, with increasing number of students covered under IDEA, there arose controversy over discrepancies in services provided to racial minorities.

Based on a finding that Black children were overrepresented, constituting 21% of students in special education while only being 16% of the general school aged population, Congress justified new federal legislation that required local education agencies to report the extent of racial disproportionality in their special education programs (Morgan et al. 2017). In 2004, they further amended this program to reallocate funding away from districts that reported over-representation of minority groups in special education programs (U.S. Government Accountability Office 2013). Despite a plethora of new literature that shows that when individual academic achievement is controlled for, racial minorities are actually *underrepresented,* these amendments are still in place (e.g. Morgan et al. 2017). That is to say, racist legislation and broken institutions that decrease funding for Black and Latinx students with disabilities, puts minority students at a disadvantage prior to even receiving a diagnosis. This is important to keep in mind as this study continues to examine a different types of discrimination, including unconscious individual racial bias on the part of staff and administrators in college.

Regardless of its defects, IDEA created a new generation of students with disabilities that were prepared with the academic and social skills to take on higher education. With this, came a greater focus on how colleges and universities would accommodate students with disabilities and create environments where they could thrive. Because IDEA did not cover post-secondary education, the question arose of how Section 504 of the Rehabilitation Act of 1973 would be executed in colleges and universities.

As discussed above, Section 504 of the Rehabilitation Act of 1973 prohibits any programs that receive federal assistance from discriminating against otherwise qualified individuals with disabilities. Although the main objective of Section 504 is similar to IDEA, these two policies diverge in many aspects, especially in respect to the education of students with disabilities. Firstly, Section 504 covers *all* programs that receive federal assistance, which includes primary and secondary education, as well as post-secondary institutions. Therefore, Section 504 informs many of the requirements colleges and universities are held to in their treatment of students with disabilities and creates the framework for the accommodations that Disability Service offices are able to provide.

Secondly, in order to be covered by Section 504, a student must be "otherwise qualified" or fully capable of carrying out any essential requirements of the program with or without reasonable accommodations. Thirdly, a reasonable accommodation does not amount to the broad range of adjustments that K-12 students are required to make under IDEA. Schools are not required to fundamentally alter their program, lower academic standards, or incur an undue financial or other burden in order to accommodate student with disabilities. The decision of what counts as a "reasonable accommodation," is not clear cut, and introduces a layer of subjectivity into accommodation decisions of Disability Service offices. While some accommodations are

standardized for specific disabilities, due to the heterogeneous nature of disability, each case is normally assessed independently, taking into account several different factors such as present limitations, previous accommodations received, and classes being taken.[2] Therefore it is responsible to ask whether other factors, such as race or perceived work ethic could also impact the treatment of a student with a disability.

Another aspect of Section 504 that varies from IDEA is that colleges and universities do not receive federal funding specifically for the support they are required to give students with disabilities. Finally, the "child find" policy is eliminated in higher education, and the burden shifts to the student to self-identify to the school and provide documentation in order to receive accommodations. The differences in policy and requirements for students with disabilities will be returned to when the transition between high school vs. college is discussed in Chapter 2 (Taylor 2011).

Transformative expansion of disability policy occurred with the Americans with Disabilities Act (ADA) of 1990, which functioned to greatly expand the settings in which those with disabilities were protected from discrimination. The ADA expanded the protections of Section 504 of the Rehabilitation Act to much larger swaths of the private sector, including employment, public services, transportation, public accommodations (including education), and telecommunications. Because higher education institutions, whether they were public or private, had already created structure and frameworks to provide equal access to services under Section 504, they became leaders in helping the private sector adjust to these new legal requirements (Rothstein 2010).

[2] Sourced through conversations with Northwestern University's Disability Service Office

Although the ADA didn't do much to change the experience of students with disabilities specifically in higher education, it had a huge impact on their access and opportunity before, after, and outside of their collegiate commitments. These changes, in turn, allowed more students with disabilities to have access to higher education as the barriers to navigating everyday life decreased, while their prospects of employment and general quality of life after college increased.

However, along with these changes came a slew of court cases and litigation that challenged specific aspects of each policy. Questions were raised about what qualified as a "reasonable accommodation" and or an "otherwise qualified" student. Moreover, a debate arose over the legal definition of "disability", and thus who was protected under the ADA. Three Supreme Court cases in the 1990s, known as the Sutton Trilogy, drastically narrowed the definition of what was considered a disability protected under the ADA. In the simplest terms, the Supreme Court ruled that the accommodations an individual has access to should be considered when deciding whether or not an individual with a disability is covered under the ADA (Rozalski et al. 2010).

For example, in *Murphy v. United Parcel Service* (1990), the plaintiff argued that he was unfairly fired by UPS because his high blood pressure was above the recommendation of U.S. Department of Transportation for certification, even though it was lower when he took medication. However, the Supreme Court found that Murphy was not covered under the ADA because when he took his medication, his blood pressure returned to normal levels. The restriction of those covered under the ADA, led to a paradoxical situation in which many individuals found themselves "disabled enough" to be susceptible to discrimination, however

"not disabled enough" to receive protection.[3] While the ADA had initially covered 43 million Americans, by 2000, this number was brought down to 13.5 million (Colker 2007).

On September 25th, 2008 President Bush signed into law the American Disabilities Act Amendment of 2008, which re-expanded the population of individuals covered under the ADA, prohibiting mitigating measures (other than ordinary glasses or contacts) from being considered in the assessment of whether an individual has a disability.

> "The ADA Amendments Act rejects the high burden required [by the Supreme Court] and reiterates that Congress intends that the scope of the Americans with Disabilities Act by broad and inclusive. It is the intent of the legislation to establish a degree of functional limitation required for an impairment to constitute a disability that is consistent with what Congress originally intended" Senate Managers (154 Congressional Record S8342)

In addition, the amendment clarified that qualified individuals included those who had disabilities that were episodic or in remission and that only one major life activity needed to be limited in order to receive protection.

The definition of disability set forward by both Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 2008 is as follows:

> "The term 'disability', means, with respect to an individual – (A) a physical or mental impairment that substantially limits one or more major life activities of such individuals; (B) a record of such impairment; or (C) being regarded as having such impairment. Major life activities include, but are not limited to, caring for oneself, performing manual tasks, seeing, hearing, eating, sleeping, walking, standing, lifting, bending, speaking, breathing, learning, reading, concentrating, thinking, communication, and working."[4]

[3] See Rozalski et al. 2010 for more information on other cases in the Sutton Trilogy

[4] "A major life activity also includes the operation of a major bodily function, including but not limited to, functions of the immune system, normal cell growth, digestive, bowel, bladder, neurological, brain, respiratory, circulatory, endocrine, and reproductive functions" (Title 42 U.S. Code Section 12102. Definition of Disability https://www.law.cornell.edu/uscode/text/42/12102)

Disability Service administrators operate on this groundwork, using it to determine their distribution of accommodations to individuals with disabilities. As is not surprising, much of the legislation is vague in order to allow it to be applied to a broad range of individuals and setting. However, this puts the charge on staff in Disability Service Offices to interpret this policy and determine who is qualified to get accommodations and what constitutes reasonable accommodations. As this study is focused specifically on the divergence in attitudes and behaviors of Disability Service administrators towards Black and white students with disabilities, the next section will focus on the policies that made college and universities more accessible to minorities. Moreover, we will look at specific civil rights legislation that intersects with disability policy and informs the manner in which staff and administration at universities execute their jobs.

b. Parallel development of laws protecting racial minorities

Because this study explores the intersection between disability and race, it is imperative that we pay attention to the policy changes that have addressed the tremendous discrimination against Black students and other racial minorities in higher education.[5] In the late 19th century and early to mid 20th, Black students found it incredibly difficult to secure admission to predominately white colleges. This was a time in which higher education was used as a tool of racial discrimination, to prevent Black students from gaining skills and experience that would allow them to move up the socioeconomic ladder (Clewell & Anderson 1995). In 1896, *Plessy v. Ferguson* legally enshrined the ability of the state to create separate public institutions for Black and white individuals, which was subsequently supported by the Supreme Court decision in *Gum*

[5] For a detailed and historical account of racism in higher education read Clewell, Beatriz Chu, & Anderson, Bernice Taylor. (1995). African Americans in Higher Education: An Issue of Access. *Humbolt Journal of Social Relations, 21*(2), 55-79.

Lum v. Rice 1927 which extended the decision in *Plessy v. Ferguson* to all educational institutions.

Historically Black Colleges and Universities (HBCUs) were arose in order to educate the population of Black youth. HBCUs were and continue to be top level academic institutions that offer primarily Black students not only a phenomenal education, but a community that offers support and empowerment (Hale 2006). However, the result was that higher education institutions that were segregated, with HBCU's receiving far less funding and support than predominately white institutions, accompanied by a continuing large population of Black students who did not have access to post-secondary education. Nevertheless, HBCUs increased the number of Black students who had access to higher education. From 1919 to 1949, the enrollment at Black public and private colleges increased fivefold from 8,193 to 51,589 (Bowles and DeCosta 1971).

A series of cases arose in the 1930s and 40s which began to challenge the precedent set by *Plessy v. Ferguson* which prevented Black students from accessing higher education, including *Missouri ex rel. Gaines v. Canada* in 1938 and *Sipuel v. Board of Regents of the University of Oklahoma* in 1948. Both cases found that separate facilities for Black and white students were legal. However, if a specific program was not available for Black students, the institutions were required to educate these Black students along with their white classmates (Haynes 1978). While these cases lead to a small increase in the number of Black students enrolled in predominately white colleges, these colleges increased their restrictive policies, enshrining in their code prohibition of Black students, except in exceptional cases in which the law required it (Bowles and DeCosta 1971).

Interestingly, World War II lead to a huge expansion in access to higher education in the United States. The introduction of the GI Bill allowed veterans to enroll in post-secondary institutions, and most states drastically expanded their university and community college system. As many Black citizens had fought in World War II, they had access to the educational opportunities opened up by the GI Bill (Lemann 1992).

In 1954, the transformative case of *Brown v. Board of Education of Topeka* struck down state-sponsored racial segregation invoking the Fourteenth Amendment's Equal Protection Clause. As stated by Chief Justice Warren in the Majority Opinion:

> "Education is perhaps the most important function of the state and local government. Where the state has undertaken to provide [education, it] is a right which must be made available to all on equal terms." (347 U.S. 483)[6]

The four cases that were cited within in *Brown v. Board of Education of Topeka* were elementary and secondary schools. As there was now a mandate and therefore public pressure on transformative structural changes to primary and secondary schools, there was no such direction for post-secondary institutions. Two years later in 1956, the Supreme Court ruled in *Florida ex rel. Hawkins v. Board of Control*, confirming that the precedent set in *Brown v. Board of Education* was equally applicable to post-secondary institutions.

Ten years later, the Title VI of the Civil Rights Act of 1964 was passed which prohibits discrimination on the basis of race, color, religion, sex, or national origin in any programs that receive federal financial assistance, further supporting the elimination of racially discriminatory practices in college admissions. This transformative piece of legislation continues to have a broad impact on the operation of private and public institutions, including higher education.

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[6] Read full transcript at https://www.ourdocuments.gov/print_friendly.php?flash=false&page=transcript&doc=87&title=Transcript+of+Brown+v.+Board+of+Education+%281954%29

Accommodation decisions that are directed by Section 504 and ADA in college settings, are also held to standards determined by the Civils Rights Act of 1964. Therefore, under this law, accommodations should be distributed in a racially equitable manner, making illegal discrimination against students based on race.

Following this monumental act, two Executive Orders issues by President John F. Kennedy in 1961 and President Lyndon B. Johnson in 1965 became the origin for affirmative action, which provides leeway and encourages employers to do more than just provide equitable admissions, but actively seek to compensate for past discrimination and ensure more equitable representation. In 1965, the Higher Education Act provided the very first federal undergraduate scholarships, including the "TRIO" programs which have the stated intention of increasing the presence of marginalized individuals in higher education (Trent 1991).

While the enrollment of Black students in predominantly white colleges increased exponentially in the 1960s, there still existed disparities in retention and graduation rates. While many prestigious universities put in place affirmative action policies, they did little to actually support the academic and social well-being of minority students on campus. Overt discrimination in higher education was without a doubt alive and well, with many states also ignoring the Civil Rights Act of 1964, while the federal government was neglected to put forward a productive enforcement mechanism. The Adams Litigation was an attempt to compel the Department of Health, Education, and Welfare (HEW) to take action against 10 states[7] in particular that were continuing to maintain segregation and engaging in discriminatory practices.[8] The plaintiff's won

[7] Arkansas, Florida, Georgia, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, Pennsylvania, and Virgina

[8] There is also a debate surrounding the impact of the Adam's litigation on HBCUs as some Black students flocked to primarily white institutions, see Wilson and Melendez 1984

the case in 1973, which increased the role of the HEW in monitoring the desegregation efforts (Newby 1979).

However, with the entry of the Reagan administration in 1980, enforcement of the elimination of discriminatory efforts decreased at a rapid rate. In addition, the decision of the court in *Regents of the University of California v. Bakke* in 1978, eliminated the mandate for affirmative action which had been effective in increasing the enrollment and access of minorities to higher education. In addition, Reagan administration declined the funding for federal grants, such as the Pell Grant, making it more difficult for low income and minority students to access higher education (Clewell & Anderson 1995).

Discriminatory policies continued and in *United States v. Fordice* (1992) Mississippi's public university system was accused of failing to dismantle a dual system of predominately white public universities and Black public institutions of higher education, accompanied by a severe disparity in funding for the separate institutions. The court outlined the legal requirement under the Equal Protection Clause that university system must not only have race neutral admissions policies but must actively work "until it eradicates policies and practices traceable to its prior de jure dual system that continues to foster segregation" (US v. Fordice Majority Opinion 1992).

In the last decade, there has been a continuing debate surrounding the use of affirmative action. The Obama Administration took the stance of actively supporting affirmative action, releasing policy guidance documents in 2011 that lays out specific guidance on how post-secondary institutions can integrate race into admissions decisions, and why they should, arguing that cases that the Supreme Court have ruled on in the past have provided precedence for such processes (US Department of Justice & U.S. Department of Education 2011). Interestingly,

increasing the role of affirmative action has largely been done with the stated objective of increasing the diversity of college campuses for the good of all students rather than for purpose of explicitly addressing the discrimination faced by racial minorities (Epperson 2017). Nevertheless, the Trump Administration reversed this policy in 2018, pushing against the decision by the Supreme Court in *Fisher v. University of Texas* (2016) to argue that using race in the process of making admissions decisions is unconstitutional and therefore applicants should be assessed using race-neutral measures (Nguyen 2019).

These policies are substantially focused on admissions of racial minorities into higher education, however Black students also often face barriers *within* higher education institutions. As the role of Disability Service administrators more precisely impacts students with disabilities while they are in college, the next chapter will focus on the experience of these students as they navigate the education system, one that is shaped by the legislation and policies previously discussed. Together, these two chapters should help illuminate the reality of two diverging experiences between Black and white students, while further emphasizing why equitable treatment and services are a necessity for college students with disabilities.

Chapter 2

Disability and Race in the Education System

This chapter will apply the policies discussed in Chapter 1 to unpack the experience of students with disabilities in elementary school, high school, and college, the barriers they face and the obstacles they overcome. Young adults with disabilities who receive a degree or certificate from a post-secondary institution are more likely to be employed (83%) than those who have graduated from high school (54%) or dropped out of high school (38%) (Newman et al. 2011). When they are able to obtain a higher education, those with disabilities find increased employment and salary– so it is crucial that post-secondary institutions be a centerpiece in understanding broader levels of inequity (Cheatham and Elliott 2013, Winsor et al. 2018).

The policies discussed in Chapter 1, IDEA in particular, support students with disabilities in receiving the strong elementary and secondary education they need in order to be academically qualified to enter college. However, even with these policies in place, students with disabilities face barriers to receiving the education they are legally entitled to.

Moreover, Black students with disabilities will face additional obstacles as they progress through the education system, distinct from those faced by white students with disabilities. While some of the statistics discussed in this chapter will point to disparities in funding, access, and treatment, it is much harder to quantify the individual discrimination that Black parents and students will face as they advocate for the rights outlined in the previous chapter. This experimental study therefore fills in this gap to better articulate a mechanism of discrimination, elucidating important factors in the decision making of individuals in Disability Services.

a. Elementary School and High School

Of all students in public elementary and secondary schools, 14% or 7 million students ages 3 to 21, received services through the Individuals with Disabilities Education Act in the 2017-2018 school year (NCES 2019). Racism magnifies the deficits that disabled Black and Latinx students face in primary schooling. While under the IDEA, the federal government is supposed to pay the costs incurred by services for student with disabilities, however much of these costs inevitably falls on the schools themselves (National Council on Disability 2018). Due to the amendments to IDEA discussed in Chapter 1 that reallocated federal funding away from schools that were believed to be over diagnosing racial minorities with disabilities, Black and Latinx disabled students are more likely to find themselves in schools that are greatly burdened by the provision of resources for students with disabilities.

An incentive structure is created which dissuades the schools from complying with the "child find" policy to actively seek out student with disabilities and incentivizes them to make it more difficult to get a diagnosis and access accommodations. Black students are actually consistently less likely than white students to be identified by their schools as having a disability when controlling for individual level of academic achievement (Morgan et al. 2017). Therefore, not only are Black students with diagnosed disabilities being underserved, they are also being under identified.

According to Paul Morgan, this creates an environment in which parents may have to actively demand resources and services for their disabled, "So it's parents who are better-resourced, in terms of information and social networks and time, that are able to persist and go through the legal wrangling sometimes necessary to get what they need" (Felton 2017). Due to racial and cultural biases present among school administration, parents who are racial minorities often have a more difficult time getting the information they need from their teachers and the

district in order to advocate for their children's rights. For example, Bussing et al. (2005) found that Black parents are less likely to receive advice or assistance about a child with a potential disability, even though they are more likely to be contacted about misbehavior of their child. While individual discrimination on the part of support staff for students with disabilities will be discussed in Chapter 4, the networks and systems that allow parents to advocate for their children can be racially segregated, leading to racial inequity in information and outcomes for students with disabilities.

In 2016-2017, 84.6% of students without disabilities graduated from high school, while only 67.1% of disabled students graduated (NCES 2018). Within this set of high school students with disabilities, white students with disabilities are more likely to graduate high school than Black and Latinx students with disabilities. In 2014-2015, 76% of white students with disabilities graduated high school, while 65% of Latinx students and 62% of Black students graduated.

The support and opportunities that students with disabilities receive in high school greatly impacts their ability to move on to higher education. While most students graduate high school with a traditional dilemma, students with disabilities have the option of taking the pathway of an alternative certificate, which allows students with disabilities to abstain from the more stringent academic expectations and requirements placed on their peers. This may seem like a positive addition for students with disabilities, however it has been enforced in a way that reduces demands on some students with disabilities who are capable of meeting the same academic requirements as their peers. Notably, this alternative certificate is normally not accepted by colleges and employers as a standard diploma. Parents who don't have an in-depth understanding of different graduation tracks, may find themselves agreeing to place their child on this

alternative graduation track without realizing the limits it puts on their ability to access higher education.

When students with disabilities graduate from high schools, white students with disabilities are more likely to receive a regular high school diploma than black students with disabilities (74% of white SWDs, 64% of Black SWDs). Black students with disabilities are more like to receive an alternative certificate than white students with disabilities (14% of Black SWDs, 10% of white SWDs). When students with disabilities graduate without a traditional high school diploma (26% of white SWDs, 36% of Black SWDs), they are unable to access higher education without additional coursework (NCES 2019). Therefore, the initial racial disparities in high school graduation rates are compounded by the fact that Black students with disabilities are more likely to receive a diploma that does not allow them to advance to higher education institutions.

b. Transition between High School and College

Although 80% high school students with disabilities will plan on attending some post-secondary institution, only 60% will enroll in post-secondary education within 8 years of graduating high schools (Newman et al. 2011). For students with disabilities entering college, receiving accommodation can be among one of the most stressful tasks. A time that is paralleled by new environment, friends, and academics, also presents a new set of bureaucratic processes that students with disabilities must sort through. Because of regulations set by the Individuals with Disabilities Education Act (IDEA) and Section 504 of the Rehabilitation Act, all elementary and high schools are legally required to actively search out students with disabilities that are in need of accommodations. They then set forward a plan for providing students with accommodations in the form of an Individualized Education Plan (IEP) or a Section 504 Plan.

These plans dictate a holistic review process of the student, that involves the teachers, administration and parents, and lays out a procedure for creating an environment that will best work for the student.

In college, some of these legal requirements go away. Universities are not covered by IDEA, only Section 504 and ADA. For these reasons the policies of FAPE (Free Appropriate Public Education), child find, and zero reject disappear (see Chapter 1). Universities are no longer required to be actively search for students with disabilities; the onus is on the student to ask for the help they need. IEPs and 504 plans do not carry over to college and the student's needs are often reassessed, which can be taxing and stressful. Although there are laws in place that require universities to provide accommodations for students with disabilities, they are more relaxed in terms of resources and money that the colleges are required to spend in order to accommodate the student.

The stage is set for each student with a disability to have to advocate on their own behalf, the result of which will impact their academic and social success in college. Moreover, while the parents may have played a large role in advocating on the student's behalf in elementary school and high school, students in college are, for the most part, expected to advocate for themselves.

In addition to the element of self-advocacy, the student depends enormously on the administrators in the Disability Service Office at their university in order to receive the services and accommodations that they need. However, the nature of the heterogeneity of disability and accommodations, is that each student is unique and may require something different. This inevitably introduces a layer of subjectivity into this interaction, as the Disability Service administrator must determine what is appropriate for the student at hand. The internal inclinations, attitudes and biases of the administrators can affect which students receive

accommodations, and which students don't. For this reason, the biases and subsequent behaviors of the Disability Service administrators are so important and warrants comprehensive study.

We will now turn to the discuss the experience of students with disabilities *within* higher education, the barriers that are presented to students with disabilities, and how accommodations can play a productive role.

c. Higher Education

The obstacles faced by students with disabilities from early education through post-secondary education are large and ubiquitous. Despite the glaring importance of higher education, students with disabilities at these institutions have not been the subject of much research. Vallejo Pena (2014) underwent an assessment of articles published in four respected and influential journals focused on higher education, The Review of Higher Education, The Journal of Higher Education, Research in Higher Education, and The Journal of College Student Development and found that only 1% address issues faced by individuals with disabilities.

In addition, research into early and secondary education in particular shows that support and outcome measurements such as funding, certificates granted, and graduation rates, have strong racial predictors. Nonetheless, the work done on racism in higher education is incredibly lacking. Through a quantitative review of higher education literature discussing race on college campuses, Harper (2012) found that researchers often neglect to attribute racial disparities to individual racism and racist institutions. The lack of critical examination of racism on college campuses points to an authentic interest in eliminating racial inequities, but a refusal to take the steps necessarily to actively combat it.

Even with these deficits, there is some research that looks into the experience of students with disabilities in higher education. It has been shown that access to academic accommodations

and aid, increases the retention of students with disabilities along with their success in an academic setting (Stodden and Dowrick 2000).

As discussed in Chapter 1, under the ADA and Section 504 of the Rehabilitation Act, post-secondary institutions are required to ensure that students with disabilities have an equal access to opportunities, including academic success. However, because the more comprehensive IDEA does not cover post-secondary institutions, they are not required to go to the same lengths that elementary schools and high schools are legally required to in order to provide "appropriate education" for *every* student with disabilities. Post-secondary institutions are required to provide students with disabilities who are "otherwise qualified" with access to *reasonable* accommodations. They are only required to provide "reasonable" services or accommodations that don't require them to fundamentally alter their program, lower academic standards, or incur an undue financial or other burden.

Of students with disabilities who were identified by their secondary school, 87% of them received accommodations in high school, while only 19% receive accommodations from their college (Newman et al. 2011). This could be due to an arduous bureaucratic process that increases dependence on self-advocacy, concerns about stigmas that arise with self-identification, or the belief that they no longer need accommodations. Regardless, it is true that the supports that the population of students with disabilities receive in college dwarf those received in college. In addition, studies of Black students enrolled colleges in Georgia found that they were significantly less likely to receive accommodations for learning disabilities, ADHD, and psychological disorders (Pellegrino 2011).

Of the students with disabilities who do not have accommodations or supports, 43% said accommodations would have been useful and 17% had applied for accommodations and not

received them. For students who do receive accommodations, 88% find the supports very useful or somewhat useful. Only 12% of students believed that the accommodations were not very or not at all useful (Newman et al. 2011).

From this data, three things become evident. 1) Students who do receive accommodations find them to be useful. 2) the process of reaching out to the disability service office and advocate for yourself, presents a huge barrier for student with disabilities. The transition of responsibility from high school to college, does not necessarily give students the support they need to advocate for the rights that they deserve. 3) Students who are able to surpass the barrier of initial contact, are sometimes denied accommodations for any number of reasons. Presumably the formidable bureaucratic process, as well as the subjective judgements of the administrations play a role in this tertiary barrier.

Completion rates of post-secondary education vary greatly with disability status and race. Following previous trends, 45% of students with disabilities (52% of students without disabilities), who enroll in post-secondary education will receive a degree or certificate in 8 years (NCES 2019). Although more research needs to be done, preliminary studies show that there is a large race gap in completion rates of students with disabilities. In the sample used by Newman et al. 2011[9], 44% of white students with disabilities who enrolled completed post-secondary schooling in eight years, while only 33% of Black students with disabilities will did the same.

These findings are supported by qualitative studies that use interviews and focus groups to gain a deeper understanding of the experience of undergraduate students with disabilities. Scott (2019) conducted 7 focus groups across the country in order to identify and clarify some of

[9] Newman et al. collected data from a nationally representative sample of 12,000 students with disabilities who had received special education services for at least a year in 7th grade or above. They followed these students for up to 8 years, focusing specifically on the subset of students aged 21-25. Data was collected in five waves, beginning in 2001 and ending in 2009.

the barriers faced by students with disabilities. Among the ones she found were lack of knowledge of available services, difficulty navigating disability office procedures, inadequate accommodations, and lack of support for self-advocacy skills.

In addition, the study confronted the reality of the excess energy that is spent purely by existing in a disabling environment.

> "I can't go into class trusting that all of my energy is just going to be put into being a good student. It's going to be about having to tweak and educate [those around me,] it's wearing, and it is quite draining sometimes."

For many students finding the energy and courage to advocate for their rights, can be an enormous challenge, on top of other obstacles to academic success. Therefore, it is even more important that when they do advocate for themselves, the services that they are entitled to, are provided in an equitable manner. As one student states, "placing the barrier on the student (…) saying they don't have the self-advocacy skills needed, takes away attention from the institution" (Scott, 2019).

For Black students with disabilities, the weight of expectations, stereotypes, and bias is twofold. They confront an education system which has historically been hostile to both Black students and those with disabilities. A separate qualitative study conducted through interviews with Black students with disabilities who were currently in college, revealed the pressure that they feel to prove the expectations and stereotypes wrong.

> "It is more on you to prove to them who you are, (…) but as much as we feel we don't want to, we have to prove ourselves to other people because the world is based upon interaction with other people." (p. 347 Banks & Hughes 2013)

Students who enter college with disabilities face the reality that college was not built for them to learn and thrive in an environment that fits their needs. Accommodations are an attempt to mitigate the obstacles that this disabling environment presents. However, the burdens on

students increase when access to accommodations becomes more complex and time-consuming. When this process unfolds differently for students of different races, it creates unequal burdens for Black and white students. As the number of students with disabilities in higher education continues to rise, greater attention needs to be drawn to the distribution of these accommodations and how it can be done in an equitable manner.

While those who work in disability services operate under the legislative framework, the inequities between Black and white students with disabilities articulated in Chapter 2 suggest that there may be an additional factor in the prohibiting access to accommodations for minority students. In the next Chapter we will zoom in from the structural inequities and outcomes statistics discussed in Chapters 1 and 2, to discuss the theory of Street-Level Bureaucracy. This theory will help ground our understanding of the impact an individual administrator can have on the experience of students with disabilities.

Chapter 3

Theory of Street Level Bureaucrats: Disability Service Administrators

Structural considerations, such as institutional racism and discriminatory legislation (Chapter 1), undoubtedly factor into the discrimination that Black students with disabilities face in the education system. However, even when equitable policy is written into law, forces outside of the formal institutions of government have a major role in determining how policy is implemented on the ground, particularly as it pertains to racial minorities (Soss & Weaver 2016). Therefore, unveiling the attitudes and behavior of those who execute policy is just as crucial as understanding the policy itself. The theory of Street-Level Bureaucracy will help us understand the enormous responsibility and impact that those who work in disability services have while also presenting the obstacles they face in interpreting and executing disability policy. In other words, I will argue that the theory of Street-Level Bureaucracy presents the framework through which we can understand how individual biases and discriminations have widespread impacts. Finally, we will discuss coping mechanisms that street-level bureaucrats are forced to use, which may result in inequitable distribution of resources.

The theory of Street-level Bureaucracy, is articulated by Michael Lipsky, who defines street-level bureaucrats as "Public service workers who interact directly with citizens in the course of their jobs, and who have substantial discretion in the execution of their work." Examples of street-level bureaucrats include teachers, social workers, law enforcement personnel, teachers, and public employees who "grant access to government programs and provide services within them" (3-4 Lipsky 1980). These individuals are uniquely responsible for the explicit implementation and execution of policy, and their attitudes and resultant behaviors directly impact the effect of policies on citizens' lives. Lipsky argues that because the way they

interpret policy informs how they perform their instrumental roles, these bureaucrats retain roles as policy makers.

Why is the execution of policy delegated and entrusted in lower level agents, such as street-level bureaucrats? Vedung (2015) argues that these bureaucrats have the competence and time to make decisions that require complex and logical processing of case information. Decisions such as triaging patients for surgery, allocating government housing loans, or distributing accommodations for students with disabilities, are determinations that require intricate and detailed knowledge of each individual case. Those who make these decisions every day have a level of professional knowledge that allows them to integrate important information and make appropriate decisions in a timely manner. In Lipsky's own words, the work done by street-level bureaucrats "calls for human judgement that cannot be programmed" and requires that they be "accountable for an appropriate response to the client's situation and circumstance" (342-343 Lipsky 1980). In addition, these decisions often need to be made very frequently, several times a month, week, or day. Thus, it would be nearly impossible to have higher level officials executing their policies. Rather, the numerous bureaucrats can take the appropriate time to assess each case on an individual basis.

While Disability Service administrators are not necessarily employed by the government, they are in no doubt in charge of the distribution of services mandated by the government. As discussed in Chapter 1, universities receive federal funding and are obligated under federal law to comply with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disability Act of 1990. Moreover, Disability Service administrators interact directly with students (in person or through emails) in order to determine the allocation of accommodations and other resource. As follows with the theory, the incorporations of personal attitudes in the decision

making of these administrators, directly affects the academic and social livelihood of students with disabilities.

Some argue that the substantial discretion that street-level bureaucrats hold leads to "loosely coupled systems," characterized by a lack of coordination and absence of regulation leading to specific dysfunctions within the institution. At the same time, the independence these bureaucrats maintain allows the organization to be sensitive to individual cases, creates room for creative problem solving, and allows institutions to persist even when one branch breaks down (Weick 1976). In the case of Disability Service Offices, both sides of the coin prove correct. The heterogeneous nature of disability means that each case *must* be considered by itself, by an individual willing to invest the time to learn about the student and make an informed decision. At the same time, the discoordination between Disability Services offices[10] and the allowance for broad interpretation of "reasonable accommodation" under the law, means that students may receive varying treatment at different schools. Moreover, the large leeway that administrators are given to interpret the law, allows for the introduction of subjective biases into their decision making.

I. Measuring the behavior of street-level bureaucrats

Measuring the observed effect of the attitudes and discretionary behavior of street-level bureaucrats is notoriously difficult. The nature of their behavior, many small decisions directed towards unique individuals, presents confounding variables and data that is not easily collectable. However, the effect of street-level bureaucrats on the lived experiences of minorities has been articulated in literature through experimental audits and vignettes revealing the discrimination in assistance to racial minorities and lower socioeconomic groups.

[10] AHEAD (Association on Higher Education and Disability) has made huge strides in coordinating offices across the country http://www.ahead.org

Utilizing a phone audit, Slough (2018) found that the municipal welfare service officers in Colombia provided less information to lower-class citizens and internal migrants, creating barriers for poor residents who needed social welfare resources. Slough attributed biased behavior of the bureaucrats to pressure from the oversight of political elites. However, other studies suggest that discriminatory behavior is caused by internal biases.

In another study, White, Nathan, and Faller (2015) emailed local election officials in 48 states varying the name (white/Latinx) of the prospective voter. They found that emails signed with Latinx signal names received fewer responses than white signal names and were less likely to contain accurate information about voter ID laws. Similarly, Neggers (2018) observed through a natural experiment that the religion and caste of poll workers in Indian elections, randomized geographically by the electoral system, impacts the voting results at a given poll station. When at least one ethnic minority was present at the poll station, the percentage of votes for minority-oriented candidates increased. Neggers also utilized an experimental vignette, randomizing names which cued ethnicity and finds that election officials are more likely to judge voters of their same religion or caste as qualified to vote.

The literature on street-level bureaucrats conflicts on whether racial biases can be linked to biases in perceived social class. Some researchers argue that a white individual's perception of a minority's socioeconomic status drives their subsequent racial attitudes (Kim 2015). However, Carnes and Holbein (2019) found that a range of bureaucrats that interact with citizens in order to help them access services (state legislators, public school principals, and mayors) do not hold social class biases in their direct assistance to constituents. Therefore, it may be possible that racially biased behavior is not driven by differences in perceived social class, but rather by

implicit unconscious biases. This study will attempt to address this gap in knowledge through measures of racial bias of Disability Service administrators.

We come away from this review with the understanding that the numerous, repetitive interactions that street-level bureaucrats have can be measured and leveraged through experimental methodology to test the ingrained instincts and biases that these bureaucrats may hold. While this study will not be using the exact audit methodology employed by many of studies in this section, much of the experimental methodology, including the use of vignettes test direct interactions, are informed by this previous work.

II. Coping Mechanisms employed by street-level bureaucrats

Lipsky (1980) argued for a distinct system underlying the decisions and choices made by street-level bureaucrats. He designated "coping mechanisms" as the tools used by bureaucrats to compensate for not having the time and resources to fully meet the quantity and substance of the demands of their clients. Coping mechanisms are not an intentional attempt to shut specific individuals out of the system. They are simply a tool that bureaucrats default to in order manage the massive demand for their time and resources. The two coping mechanisms are 1) limiting client demand and 2) creaming for specific cases.

In the first coping mechanism, the bureaucrat limits client demand by reducing the dissemination of information about services and making access burdensome through complex procedures. Examples of this include inconvenient opening hours, unnecessarily complicated applications, forcing clients to wait in long lines in order to get appointments or access to services, and generally complex procedures (Winter & Nielsen 2008 p. 116).

For Disability Service administrators, limiting client demand could appear as making the process to receive accommodations complicated and convoluted. This can manifest through

requiring lots of specific documentation that may put a burden on the student and dissuade them from perusing accommodations. Administrators could also gain the reputation of becoming unhelpful or unresponsive which would discourage students from seeking accommodations.

In the second coping mechanism, denoted creaming, the bureaucrat handpicks cases that are straightforward and clear, neglecting the complex, difficult, and time-consuming cases. Winter and Nielsen (2008) further divides creaming into 1) creaming for substantive success, 2) creaming for cost efficiency, and 3) creaming for quantitative improvement. Creaming for substantive success entails the bureaucrat using subjective judgement to select clients who they believe have a highly likely chance of success. This means that bureaucrats neglect those who have the most need or those who contacted them first. Instead, they serve clients that they believe will benefit the most from their provision of services and time.

Disability Service administrators who resign to creaming for substantive success, would result in the distribution of more accommodations to students who they thought would be more successful. If the administrators hold onto biases or stereotypes (e.g. labeling Black students or students with ADHD with poor work ethic, as discussed below), these beliefs can inform perceived levels of success and therefore determine who resources go to. The outcome would be grave inequities in accommodation distribution between students of different races or different disabilities.

Individuals who have discretionary control over the distribution of goods, services, and accommodations are forced to use subjective judgements to determine how their units are allocated. We now turn to the discussion of specific factors that condition their decision making, in particular, disability, race, and perception of "deservingness."

Chapter 4

Racial Bias in Disability Diagnosis, Treatment and Support

The previous chapter discusses the decisive role that Street-Level Bureaucracy play in executing policy put forward by the federal government. Chapter 4 will apply this theory in the context of the racial disparities between Black and white individuals with disabilities. This is an area that is rarely studied as the majority of research on street-level bureaucrats has been done in the context of welfare, voting, and policing. That being said preliminary research and data from economic and attitudinal studies provides insight into some of mechanisms that may be observed.

While Black students with disabilities are overrepresented in elementary and secondary school, they are underrepresented in universities (NCES 2015). 20.8% of white students in universities report having disabilities while 17.2% of African American student's report having disabilities (NCES 2015). A contentious debate exists between those who believe racial minorities are underdiagnosed with disabilities and those who believe racial minorities are over diagnosed. Evidence for over-representation appears as Black students are 21% the special education classes while they are only 16% of the general school aged population. However, as discussed in Chapter 1, when studies control for individual levels of academic achievement, they find that Black students along with other racial minorities are actually under diagnosed for disabilities (Morgan et al. 2017).

Multiple factors make it difficult to determine the mechanisms that control the success of Black students with disabilities in secondary and post-secondary school. Racial prejudice is pervasive throughout many aspects of society and disparities in outcomes between Black and white individuals with disabilities cannot be chalked up to a single institution, policy, or

individual. In addition, confounding variables such as family income, geography, and academic achievement levels make it difficult to separate out the direct impact of race. Nevertheless, racial identity undoubtedly plays a role in the diagnosis, treatment, and subsequent support received by individuals with disabilities.

While some of the biases that individuals with disabilities face are similar, many of the biases vary depending on the disability diagnosis. The two disabilities that are scrutinized in the survey experiment that is discussed in later chapters are Attention-deficit/hyperactivity disorder (ADHD) and visual impairment. The design of the survey study discussed in Chapter 6, will go into further discussion of how biases surrounding these disability diagnoses will be tested.

In this chapter, I focus attention on racial biases seen in the diagnosis, treatment, and support of individuals with disabilities, with a focus on Black individuals with ADHD. Attention-deficit/hyperactivity disorder is a behavioral disorder characterized by an ongoing pattern of inattention and/or hyperactivity and impulsivity that interferes or reduces quality of social, school, or work functioning (American Psychiatric Association 2013).

ADHD is the most common disability diagnosed for undergraduate students in the United States. In the 2011-2012 school year, 21.8% of students with disabilities reported an ADHD diagnosis. Because of its high prevalence among youth and its impact on learning and behavior, the disability has been extensively studied. In addition, there are racial disparities in the percentages of students with disabilities reporting having ADHD. While 26% of white students with disabilities report having ADHD, only 11.8% of Black students with disabilities reported having ADHD. Other disabilities such as depression (White 17.2%, Black (16.5%), has much smaller racial disparities (NCES 2017). This distinction suggests potential discrimination in the diagnosis and treatment specifically of Black students with ADHD.

Black youth in particular show more ADHD symptoms, however they are less likely to receive an ADHD diagnosis (Miller, Nigg, & Miller 2008, Morgan et al. 2013). White children with ADHD are also more likely to receive a medical prescription than Black children with ADHD (Stevens et al. 2005, Coker et al. 2016). There are also clear-cut class disparities in ADHD diagnoses. 39.7% of students with disabilities in the highest 25% of family income had been diagnosed with ADHD, compared to 23.8% in the lowest 25% of family income (NCES 2017). These statistics begin to paint a picture of the populations that have greater access to ADHD information and resources.

The race and culture of parents of youth with disabilities greatly impacts how they interpret and react to their children's behavior (Bussing et al. 2005). Stevens, Harman & Kelleher (2005) found that Black parents are more tolerant of behavioral symptoms of ADHD and are therefore less likely to contact a doctor when symptoms arise. Black and Latinx parents are more likely to hold stigma associated with mental disabilities, and more negative attitudes towards medication (Bussing et al. 2003, Leslie 2007). In addition, because of racial inequities in socioeconomic status, Black parents who have children with symptoms of ADHD have less access to resources and medical professionals than white parents (Bussing et al. 2003).

However, biases maintained by health care professionals and other members of the child's potential support system informs the work on street-level bureaucrats. Health care providers are less likely to ask Black and Latinx parents than white parents, if they have any developmental concerns related to learning and behavior of their child (Guerrero, Rodriguez, & Flores 2011). In addition, Black parents receive more information on the misbehavior of their children from teachers than white parents, and yet, they receive fewer interventions through advice or assistance concerning a potential disability (Bussing et al. 2005). This variation in

treatment by health and childcare providers can affect the level and quality of treatment that a Black and Latinx individual with a disability receives. These health and childcare providers operate as street-level bureaucrats as they interact with individuals with disabilities throughout their diagnosis, treatment, and support services and overall make-up a substantial part of a student's support network.

The biases that they hold, can provide information on discriminatory attitudes that may be held by administrators in Disability Services, the population that this experimental study will analyze. Next, we will discuss how specific attitudes are advised by harmful stereotypes and biases and gain a further understanding of how these attitudes could inform discriminatory decision making on the behalf of Disability Service administrators and other street-level bureaucrats.

Chapter 5

Attitudes about Disability and Race

Both the racial inequities in disability diagnoses and the established role of street-level bureaucrats play in the perpetuation of these injustices and lead us to question the attitudes that manifest in discrimination against Black individuals and those with ADHD. Attitudes are defined as the relatively enduring evaluation of something and are comprised of an emotional (affect) component, a belief/value (cognitive) component, and a behavioral component (The Handbook of Attitudes 2005). For race and disability, the attitudes discussed are often shaped by stereotypes that label Black individuals and individuals with disabilities. Further, the relationship between attitudes and behavior allows measurements of attitudes to predict behavior (Glasman & Albarracín 2006). Therefore, if Disability Service administrators unconsciously internalize racist or ableist[11] stereotypes (specifically pertaining to work ethic), the resulting attitudes can inform how they make decisions about distribution of services, such as accommodations and other resources.

Previous literature has looked to measure attitudes using 1) measures of "deservingness" and 2) the warmth and competence axis put forward by the Stereotype Content Model. To my knowledge, there is no previous research studying the attitudes of Disability Service administrators. However, data on the general public uncovers trends in attitudes towards individuals with disabilities.

A major caveat is that these stereotypes may not carryover to my target population since the data discussed here are based on the general public. This is especially salient since providers in my target population have lots of contact with individuals with disabilities, and contact has

[11] Ableist: discrimination against someone because of their disability. See Friedman, C. (2017). Defining Disability: Understandings of and Attitudes Towards Ableism and Disability. *Disability Studies Quarterly, 37*(1).

been shown to particularly decrease prejudice towards those with disabilities (Paluck, Green, Green 2019). However, the fact that this data may not be precisely representative of the subset, is not detrimental as the real interest of this study is to compare attitudes within the target population across race and disability.

I. Deservingness

One of the most powerful indicators of support for the allocation of resources is deservingness; people are more likely to allocate resources when they perceive a person to be deserving. The deservingness heuristic has been used to help political scientists uncover disparities in support for a variety of welfare programs including healthcare, unemployment protection, and disability policy.

Two variables are especially important in the perception that an individual is deserving: 1) the control that the individual is perceived to have over their situation and 2) the work and effort that the individual has put in to remedy their situation. Other important variables alluded in literature are identity and the individual's level of need (van Oorschot 2000).

People are much more supportive of those that they believe to be victims of uncontrollable events and are much less supportive of benefits for those who are deemed responsible for their present condition. Jensen and Petersen (2017) grounded this understanding in the disparate support for government spending on healthcare versus unemployment protection. Around the world, healthcare is uniformly more popular as those who fall ill are seen as less responsible for their condition, while those who are unemployed, are believed to be responsible for their plight. Within healthcare, individuals with diseases such as cardiac problems and cancer (diseases that are perceived to be out of the patients' control) receive the highest support for government help. In contrast, individuals with smoker's lung (a disease that is attributed to

patient behavior) receive the lowest support for government help. These findings are supported by other research on control and deservingness of welfare for poor individuals and families (Will 1993, Cook 1979).

The second component of perceived deservingness is how hard the individual has worked to better their situation. When studying public welfare assistance awarded to families with unemployed or disabled fathers, Will (1993) found that if the father is continuing to look for a job, despite hardship, the family is believed to be more deserving of assistance. Other researchers characterize the role of hard work as having an evolutionary inception, arguing that sharing with nonfamilial individuals, evolves alongside defenses *against* those who do not work to contribute to the shared goods (Petersen et al. 2012).

a. Deservingness and Disability

Individuals with disabilities are usually believed to deserving of government assistance (Gervais 2011). However, disability is an incredibly heterogeneous condition that manifests in varying levels of visibility and barriers to opportunities. Because of the heterogeneity of disability, it is challenging and relatively unproductive to attempt to characterize a specific stigma to a unified "disability" identity (Selmi 2011). Nonetheless, much of the research done surrounding attitudes towards disabilities, has tried to quantified feelings towards the disabled population as a whole. This has resulted in vague and variable results, that are lacking in the ability to explore the mechanisms that enforce distinct barriers for individuals with disabilities.

Accordingly, some researchers have begun to look more closely at specific differences in attitudes towards individuals with different disabilities. One study finds that individuals who are diagnosed with deafness, blindness, Down syndrome, Quadriplegia, or are Veterans are considered the most deserving. In contrast, those with addiction, autism, ADHD, bipolar disorder

and workplace injuries as the least deserving (Blum et al. 2019). Some of these attitudes align with statistics that show what Americans believe and do not believe should qualify as a disability. While a strong majority of Americans believe hearing loss (79%) and blindness (88%) should qualify as a disability a smaller majority believes learning disabilities (54%) should qualify. Addiction, which receives some of the lowest deservingness (Blum et al. 2019), is only considered by one in ten Americans to be a disability (Shannon-Missal 2015).

The discussion above provides a framework through which we can begin to understand these differences. This schema suggests that those with ADHD, addictions or workplace injuries may be perceived to have the most control over their disability and may be recognized as having worked the least to "help themselves." Meanwhile, those with hearing loss and blindness have the least control over their disability. More notably, Daley and Rappolt-Schlichtmann observed that individuals with ADHD are stereotyped as being "lazy" or having a poor work ethic, while this label is actually faulty misassociation with the diagnosis. The study design articulated in the next chapter will aim to directly test whether this stereotype linked to potential disability bias present in the decision making of Disability Service administrators. In addition, it will look at how these attitudes are impacted by the race of students with disabilities.

b. Deservingness and Race

Prejudice against Black Americans is well documented, especially in terms of support for the welfare programs and services. Deservingness of help and support is conditioned by racial prejudice (Ellis & Faricy 2019). Much of this literature focuses on the perception by white Americans that Black Americans do not work as hard and are thus less deserving of government support (Sniderman and Piazza 1995).

White Americans believe that Black Americans violate the Protestant work ethic (Kinder and Sears 1981, Jardina & Piston 2019: 3). Moreover, Jardina and Piston (2019: 5) report than in the 2016 American National Election survey, 57% of white respondents rated Black individuals as lazier than whites. DeSante (2013) further found that white individuals are rewarded more than Black individuals for the same amount of hard work, and Blacks are punished more harshly for the same levels of "laziness."

Disability Service administrators who internalize these stereotypes could be less like to distribute accommodations and services to Black students with disabilities insofar as they believe they will work less hard and be less capable of achieving success with or without disabilities. To return to the coping mechanisms discussed in Chapter 4, if these administrators utilize "Creaming for substantive success," they may be more likely to distribute their time and accommodations to white students with disabilities. These internalized stereotypes lead them to believe that white students have a higher chance of success because they will work harder than a Black student with the same disability.

III. Stereotype Content Model: Warmth and Competence

The Stereotype Content Model proposes two dimensions along which attitudes towards specific individuals can be categorized, warmth and competence. While warmth is a measure of perceived trustworthiness and friendliness, competence is a measure of perceived capability and assertiveness. These measures arise from an attempt to assess the perception of how the 'target's' intent will affect the perceiver's belief in how capable the 'target' is in pursuing their goal (Fiske et al. 2002).

Why are attitudes and the Stereotype Content Model important? The attitudes and emotions elicited by specific individuals predict behavior in a schema formulated by Cuddy,

Fiske, & Glick (2008) titled the BIAS map. The Behavior from Intergroup Affect and Stereotypes (BIAS) Map predicts distinct behaviors towards groups (active or passive, harm or facilitation) depending on their placement on the warmth and competence axes. This schema grounds perceptions of different social groups and could impact the way in which Disability Service administrators shape their attitudes and decisions surrounding individuals with disabilities.

In general, individuals with disabilities are seen are warm, but incompetent, a designation also given to the elderly and young children. The emotions evoked by this group often fall along the lines of pity or sympathy (Fiske 2018). The behaviors elicited by these emotions are active help and passive neglect. One way this could be characterized is that disabled people are sometimes overhelped and treated in a patronizing manner, yet basic needs are neglected (Cuddy, Fiske, & Glick 2008). However as discussed above, broad and generalized implications of attitudes surrounding those with disabilities does little to help us understand the specific mechanisms of discrimination and prejudice due to the heterogeneity of disability diagnoses.

The perception of Black individuals along the warmth/competence axis seems to vary with social class (Bayton, McAlister, & Hamer 1956; Smedley & Bayton 1978). Black professionals, clustered with Asians, businesswomen, feminists, Jews, northerners, and rich people, are perceived as having high competence and low warmth which elicits emotions of envy. The associated behaviors, as predicted by the BIAS map are passive facilitation and active harm. In contrast, poor Black individuals are perceived as having low competence and low warmth, clustered with poor whites and welfare recipients (Fiske et al. 2002). The emotion elicited by this group in respondents is contempt, linked to behaviors of active and passive harm or neglect.

As noted in Chapter 4, contrasting studies have found social class to be an insignificant variable in the decision making of Street Level Bureaucrats (Carnes and Holbein 2019). However, these studies were looking at socioeconomic status as an isolated variable, rather than recognizing its intersection with race and disability. The following experiment studied articulated in Chapter 6 aims to fill in this gap in knowledge, elucidating the compounding biases towards Black individuals with disabilities.

Chapter 6

Methods and Experimental Design

I use a survey experiment to explore how Disability Service administrators react to student applicants based on race, disability, and work ethic. I fielded the survey via email in February and March 2020 to Disability Service administrators at post-secondary institutions across the United States. Next, I explain the motivation for my approach, discuss the sample, and then detail the survey design and outcome measurements.

I. Methods: Experimental Vignettes

In studies that use experimental vignette surveys, hypothetical passages are created that depict a specific person or situation (e.g., Sniderman 2011). I construct condition in which three independent variables (race, gender, disability) are randomly assigned. Outcome variables can be measured through questions asked of the respondent after the hypothetical passage. Due to the random assignment of conditions – that vary the race, for example, of the person in the vignette being evaluated – causal inferences between the independent variable and the outcome variable can be supported, if there are statistically significant differences between treatment conditions.

Experimental vignettes are used in a wide variety of disciplines to better understand the judgment and decision-making surrounding complex topics including attitudes and resultant changes in behavior. Although they have been used in variety of different fields, this method has proven to be particularly helpful in uncovering the mechanisms behind prejudicial attitudes. Experimental vignette surveys allow researchers to separate out variables and control for additional influences and confounding variables, that may be uncontrollable in other method selections (e.g., surveys). The methodology has also been shown to have high external and internal validity (Taylor, 2006). They are particularly useful for studies on race and disabilities

where asking people directly about their attitudes would be problematic due to social desirability bias. Respondents would rarely openly express prejudicial opinions, even if they held them (e.g., Kuklinski and Hurley 1994). With a survey experiment, however, each respondent is unaware that race or disability is a variable being manipulated by the experiment since they only see one vignette. Thus, comparing across vignettes allows for the formation of causal claims concerning impact of race and disability on outcome measurements.

For these reasons, within studies of attitudes and judgements surrounding disabilities, experimental vignettes are used for studying both the general population and professionals who assist populations with disabilities. For example, Morin et al. (2013), formulates two vignettes with varying levels of intellectual disabilities (ID) to construct and validate the Attitudes Toward Intellectual Disability Questionnaire (ATTID) which measures 3 different components of attitudes towards ID: cognitive, affective, and behavioral. In a separate study, 12 different variables are manipulated including number of children, marital status of parents, financial prospects, and disability and employment status of father to form differing vignettes in order to determine the mechanisms behind "deservingness" in the context of the welfare state (Will, 1993). Thurman, Lam, and Rossi (1988) construct vignettes that vary symptoms of mental illness and relatedness to the participant, to deconstruct which symptoms are most salient in the judgement of individuals as mentally ill.

Another set of studies utilizes experimental vignettes to examine professional worker's or street-level bureaucrat's interactions with the disabled populations. Both Proctor & Azar (2013) and Retzer, Kaye, and Gray (2019) look at the influence of parental intellectual disability on the attitudes and decisions of children's social workers. Peyton et al. (1980) construct twelve vignettes varying age and race, presenting individuals with diagnoses such as depression,

alcoholism, job problems, marriage problems, or medical problems, which were used elucidate attitudes of graduate students studying social work. Despite a wide variety of uses of the experimental vignette methodology, to my knowledge, no study to this date has varied disability, race, and work ethic in an attempt to understand how administrators make accommodation decisions. Moreover, no study has looked at the behaviors of university level special services administrators. Thus, there are crucial gaps in the literature which this study fills.

Another approach that I could have taken – which also would evade social desirability bias – is an audit study, multiple examples of which are discussed in Chapter 3. In this proposed method, emails could be constructed and sent to Disability Service administrators posing as a prospective student with disabilities. However, I decided to instead to pursue the survey experimental methodology for the following reasons. My ultimate interest is not directly in response or non-response to inquiries. Rather, I am interested in a) perceptions of a person who might receive an accommodation (which would typically not be decided in an initial response), and b) how measured factors (e.g., work ethic, racial bias training) influence perceptions. In other words, I am interested in more detailed reactions and moderators of those reactions than would be available with an audit study. Even if I content analyzed the response emails in an audit study, the content of the email would likely be administrators asking for more information about the student (i.e., not provide much variability, asking instead for some follow-up information). A survey experiment with a hypothetical vignette allows for more direct measurement of outcome variables while still allowing from random assignment of race, disability, and work ethic.

II. Experimental Sample

To generate the sample, a list of 3,020 undergraduate postsecondary institutions was compiled using the Integrated Postsecondary Education Data System which assembles data for

over 7,500 institutions that receive or are applicants for any federal student financial aid funding.[12] Using the information provided by this database, study limited the universe of institutions to 2 and 4 year, accredited, degree-granting, general education institutions, as interest lies in institutions that clearly offer degrees and meet minimum requirements to be recognized by the government as a college or university.

The sample for this study excludes tribal colleges and special-focus institutions (e.g., medical, engineering, laws) and focuses on General Education institutions. Specialized schools may have characteristics that would alter the process of requesting accommodations or change which specific accommodations are requested and available, making the standardized email vignette constructed for General Education institutions an unrealistic hypothetical. In order to maintain validity in the survey experiment, the email message shown to each survey participant has to be identical in all ways except for the manipulated independent variables (race, disability, and work ethic). Therefore, the sample was limited to General Education institutions for which a standardized email would be a realistic hypothetical for each Disability Service administrator. The sample intentionally includes 2-year institutions (e.g., community colleges) as such institutions often serve as important gateways to 4-year institutions (Rosenbaum et al. 2017) and roughly half of student with disabilities may be enrolled in 2-year institutions (Raue et al. 2011).

Research assistants were hired to find contacts for Disability Service administrators at each of 3,020 schools included in the sample, following a standardized protocol outlined in Appendix A. At least one email contact was found at 2,380 schools (78.8%). Email addresses for specific staff members were prioritized over general email addresses, and were found at 1,867 schools, with only a general email address for the Disability Service department found at

[12] Justification for inclusions and limitations are included in Appendix B, supported by the precedent set by Brown and Hilbig (2018) and Druckman and Shafranek (*forthcoming*)

513 schools. Research assistants were instructed to first attempt to find a personal contact for the Director of Disability Services or its equivalent at the college or university. When this contact was not found or not clear, they were instructed to collect up to three personal contacts of staff members in the department who were believed to have the most authority over distribution of academic accommodations to students with disabilities.[13] As a result, 228 schools had two personal email contacts, while 86 schools had three personal email contacts of staff members in the Disability Services department.

In total 2,780 emails were sent out to unique email addresses and 618 survey responses were received, giving a response rate of 22.2%. Participants were recruited to the survey through contact over email and received $5 for completing the 15-minute survey.[14,15] The e-mail invited the participant to take part in the survey by clicking on a link that led to the survey.

Table 1 indicates the breakdown in characteristics of the universities and colleges of the participants in the survey. Other than the race variable, the statistics shown in Table 1 and 2 are representative of non-Black respondents, the sample on which all subsequent analysis is performed.[16] Of the schools whose Disability Service administrator responded to the survey, 44% were private institutions, and 61% offered a master's or a PhD as their highest degree. The average enrollment of the schools was 7,989 students.

Table 2 establishes attributes of the participant sample. Of the survey respondent, 93% said that they interacted with students to determine if they receive accommodations, revealing that the survey to reach the relevant population. Moreover, 76% reported that they were the Director of Student Disability Services or its equivalent. The gender breakdown was 80% female

[13] Detailed and standardized protocol for email collection is provided in Appendix A
[14] Transcripts of recruitment emails and follow up email are provided in Appendix D
[15] This study was approved by Northwestern University Institutional Review Board
[16] Regression were also run on the entire sample (including black respondents), and the findings were the same

and 20% male (which reflects the population as being disproportionally female). 82% of the respondents identified as white, while 7% identified as Black, 5% Hispanic, 2% Native American, and 2% Asian-American (Table 2).

Institutional Feature	**Percentage (N)**
Private school	44% (574)
Associate degree highest degree	24% (574)
Bachelor's degree highest degree	15% (574)
Advanced degree (MA/PhD) highest degree	61% (574)
Specialized school	11% (569)
For-profit school	12% (569)
Average enrollment	7,989 (10,887; 540)

Table 1 Characteristics of Institutional Sample

Variable	**Percentage (N) / Average (Std. Dev; N) / Distribution (N)**
Interact with students to determine if they receive accommodations	93% (574)
Director of student disability services (or equivalent)	76% (573)
Time worked in the field	13.5 years (10.25; 569)
Hours work with students in a typical academic year week	22.70 (10.48; 558)
Age	18-24: 1%; 25-34: 15%; 35-50: 42%; 51-65: 36%; over 65: 6% (574)
Income	<$30K: 1%; $30K-$69,999: 25%; $70K-$99,999: 30%; $100K-$200K: 38%; > $200K: 7%[A] (513)
Gender	Female: 80%; Male: 20%[B] (569)
Race	White: 82%; Black: 7%; Asian American: 2%; Hispanic: 5%; Native American: 2%; Other: 5%[C] (618)
Average ideology score (1-7 scale with higher scores = more conservative)	2.99 (1.59; 545)
Education (highest degree)	Some college: 1%; 4 year college degree: 9%; Master's degree: 74%; PhD: 16% (573)
Took course on minimizing racial bias in job	65.57% (575)
Average racial resentment attitude (0 to 1 scale with higher scores = more resentment)	.21 (.20; 535)
Average disability social distance score (1-4 scale with higher scores = less prejudice)	3.79 (.35; 559)
Average time spent interacting with black students	19.11% (18.55%; 574)

[A] Sums to greater than 100% due to rounding error.
[B] One participant chose "other."
[C] Sums to greater than 100% since respondents could check multiple categories. Also, for all analyses reported in the paper, black respondents are excluded.

Table 2 Survey Respondent Characteristics

In addition to basic demographic questions, the survey includes questions about the political ideology of participants, as well as measures of racial resentment attitudes and disability social distance scores. The standard racial resentment scale is used in the survey to measure prejudice held against Black individuals (e.g., Kinder and Sanders 1996).[17] The racial resentment scale is explicitly designed with the intention of capturing feelings concerning whether or not Black individuals receive too many favors from the government and whether or not they are working hard enough to "get ahead in society." The variable itself is the summed average of three separate questions from this scale that to quantify racial resentment against black individuals (the alpha for the scaling is high, .75).

Disability social distance scores are collected as an approach to assessing prejudice against individuals with specific disabilities. Survey questions are adopted from the Bogardus social distance scale (Bogardus 1933) which captures the level of comfort a respondent would have if an individual with a disability was part of their inner social network. Specifically, the survey asks whether the participant would be comfortable with having a close personal friend or son/daughter-in law who has ADHD and then, separately, a visual impairment. (I merged the scores given they scaled very strongly together with an alpha near .65).

On average, this sample leaned liberal, expressed extremely low racial prejudice, and scored very high on disability social distance scores (conferring low disability prejudice). Due to the low racial and disability prejudice measured across the sample, as well as their liberal ideological scores, these attitudes are unlikely to moderate bias in any of the outcome measurements – but note, as I suggest below I suspect the biases that may operate on an unconscious level that would not be picked up by explicit survey items.

[17] See Appendix C for the Survey Transcript

II. Hypotheses

The causal claims that this study is able to make are in pursuit of answering the following question: Do those who work in disability services in higher education exhibit biased decision-making based on 1) disability type, 2) race, and/or 3) work ethic?

Emerging from previous work and literature in political science, disability studies, and higher education literature my hypotheses are 3-fold:

Hypothesis 1: Individuals who work in college disability offices will respond to those who display a strong work ethic, relative to those who do not provide a clear indication of their work ethic, more positively, all else constant. As discussed in Chapter 5, deservingness is a key mediator in the provision of support and assistance (e.g., van Oorschot 2000) and hard work is correlated with deservingness (Will 1993, Petersen 2012, Blum et al. 2019). Previous research finds that "deservingness rests in part on perceptions of effort (cheaters vs. reciprocators); that is, support is given to those who are making an effort to rectify their situation compared to those who are not" (Blum et al. 2019 p. 5). Petersen et al. (2012) shows that those who exert more effort are judged as more deserving, across domains. Importantly, this deservingness heuristic – just like racial prejudice, might operate at an unconscious level and thus be hard to directly measure (Petersen et al. 2010). Following from this logic, when individuals are seen as having a stronger work ethic, they are more likely to be judged more positively in all outcome measurement including attitudinal, application process, and accommodation outcome measurements.

Hypothesis 2: Individuals who work in college disability offices will respond to those with visual impairments, relative to those with ADHD, more positively, all else constant. This hypothesis rests on the stereotype that individuals with ADHD are lazy, have a poor work ethic,

and are not working hard enough (Harnum et al. 2007, Daley and Rappolt-Schlichtmann 2018). Following with the established connection between work ethic and deservingness, even unconscious assumptions of poor work ethic on the part of individuals with ADHD, should lead respondents to believe that they are less deserving of academic accommodations for their disability, while an individual with visual impairments is comparably seen as more deserving. Therefore, those will visual impairments will be assessed more positively across attitudinal, application process, and accommodation outcome measurements.

Corollary 1: Individuals who work in college disability offices who learn a student displays a strong work ethic will exhibit less disability bias (i.e., hypothesis 2), than those who do not learn that a student displays a strong work ethic, all else constant. If Hypothesis 2 holds, I predict it will be due to unconscious stereotypes that respondents hold about the work ethic of individuals with ADHD, that they are lazy or not hard workers. Therefore, when this belief is corrected through an explicit mention of the student with ADHD being a hard worker, it will lessen the bias that respondents hold against students with ADHD, relative to those with visual impairments. Accordingly, when a student with ADHD and a student with a visual impairment (all else constant) are said to have a strong work ethic, the assessment of these students should be more similar than the analogous comparison between two students that includes no mention of their work ethic.

Hypothesis 3: Individuals who work in college disability offices will respond to African Americans, relative to Whites, less positively, all else constant. As discussed in Chapter 5, literature has found that white Americans believe Black Americans to be lazier and less hard working than whites (Jardina & Piston 2019). In addition, Black individuals are punished more harshly for the same levels of laziness (DeSante 2013). Under the assumption that perceived

work ethic correlates to perceived deservingness, Black students will be seen by respondents as less deserving than white students and will be judged more negatively across in all outcome measurements.

Corollary 2: *Individuals who work in college disability offices who learn a student displays a strong work ethic will exhibit less race bias (i.e., Hypothesis 3), than those who do not learn that a student displays a strong work ethic, all else constant.* If Hypothesis 3 holds, the decreased perception of the deservingness of Black individuals can be amended by correcting unconscious stereotypes about the work ethic of Black students. An explicit mention of the hard-working nature of the Black student will individuate the respondent and compensate for the stereotype. Therefore, white and Black students who are said to have a strong work ethic (all else constant) should be judged more similarly along outcome measurements than an analogous comparison between white and Black students that includes no mention of their work ethic.

Hypothesis 4: *Individuals who work in college disability offices who have taken a course in implicit racial bias reduction will exhibit less racial bias (i.e., Hypothesis 3), than those who have not taken a course, all else constant.* When those who made aware of biases against Black individuals through racial bias training, these interventions can work to diminish racial prejudice and discriminatory behavior (Devine & Monteith 1993, Plant & Devine 2009). Particularly with the population I am studying, that has low racial resentment, this type of training can lead to a dramatic reduction in implicit racial bias that can last over long periods of time (Devine et al. 2012). As colleges and universities will often offer these courses for their staff and faculty, those who have taken the course could show lower racial prejudice, if the lessons learned from the implicit racial bias training are long lasting.

The strength of these hypotheses will be tested using t-tests and regressions to test differences between participants in the treatment conditions built into the experimental design as articulated in the following section.

H1	Positive response when strong work ethic is mentioned (relative to when it is absent)
H2	Positive response when the student has a visual impairment (relative to when the student has ADHD)
C1	Less disability bias when a student displays a strong work ethic
H3	Negative response for when a student is Black (relative to white students)
C2	Less racial bias when student displays a strong work ethic
H4	Less racial bias when respondent has taken a racial bias training course

Table 3: Main Hypotheses and Corollaries

III. Experimental Design

Central to the survey is a hypothetical vignette that depicts an email from admitted (but not enrolled) student with a disability who is seeking information about accommodations for their disability. Through the email, the respondents receive information on three different characteristics pertaining to the students: their race, their disability, and their work ethic. Each variable has two levels, which were randomly and independently assigned, creating a 2x2x2 experimental design as follows: Race (white/Black) x Disability (ADHD/visual impairment) x Work Ethic (Hard work/No hard work) (Table 4).

	White Vision	White ADHD	Black Vision	Black ADHD
No Hard Work	1	2	3	4
Hard Work	5	6	7	8

Table 4: Experimental Vignette Conditions

The hypotheses outlined in the previous section seek to make causal claims linking the race, disability, and work ethic of the student to their perceived deservingness and

accommodation responses. While race, disability and work ethic are randomly assigned, every other aspect of the email and subsequent survey stays the same. When I compare between treatment conditions that change one variable, while keeping all others constant, I can attribute the difference between two treatment conditions to the single variable that was changed. By comparing across more than 2 conditions, I also am able to examine intricate relationships between race, disability, and work ethic to understand how these variables work together to inform the decision-making structure of Disability Service administrators.

Hypothesis 1 interrogates the role of work ethic in determinations of attitude, application process expectations, and accommodation response, contending that when the student is said to be a hard worker, they will be seen as more deserving and receive a positive accommodation response. By comparing across treatment conditions where hard work is varied, and all else is held constant, the differences in outcome measurements can be attributed to the manipulation of work ethic. For example, treatment conditions in which hard work is mentioned (5, 6, 7, 8) are expected to receive more positive outcome measurements relative to their analogous conditions (race and disability held constant) in which hard work is not mentioned (1, 2, 3, 4).

Hypothesis 2 predicts that those who have visual impairments will be assessed more positively along outcome measurements than those who have ADHD. When comparing across treatment conditions where the disability treatment varies, but all else is held constant, the differences in outcome measurements of deservingness and accommodation response can be attributed to this change in disability. Conditions 1, 3, 5, and 7 that depicts an email from a student with a visual impairment are expected to receive a positive attitudinal assessment, application process expectation, and accommodation response relative to their analogous conditions 2, 4, 6, and 8 respectively, which provides an email from a student with ADHD.

Corollary 1 predicts that the effect of hard work on attitude, application process expectations ands accommodation response will be minimize disability bias. For this analysis, I look for the disability bias between two conditions where disability is varied but all else is kept constant, as done for Hypothesis 2. Then I compare the effect of hard work on disability bias, across two different conditions that provide a different disability, race being held constant in all four of these conditions. For example, the disability bias present between white students with ADHD:No hard work (Condition 2) and white students with visual impairments:No hard work (Conditions 1) is compared to the disability bias between white students with ADHD:Hard work (Condition 6) and white students with visual impairments:Hard work (Condition 5), with the hypothesis holding that hard work will minimizes disability bias between students with ADHD and students with visual impairments.

Hypothesis 3 predicts that Black individuals with disabilities will receive a negative attitude and accommodation response as compared to white individuals, all else constant. Because race is randomly and independently assigned, I can compare across treatments that vary race, with disability and work ethic held constant. The difference in outcome measurements in these comparisons, can be attributed to the variation in race. Conditions where a Black student is presented (Condition 3, 4, 7, 8) are expected to be assessed negatively on all outcome measurements relative to their analogous white conditions, when disability and work ethic are held constant (Condition 1, 2, 5, 6).

Corollary 2 hypothesizes that the strong work ethic will decrease racial bias, disability held constant. As evaluated for Hypothesis 3, I analyze racial bias where work ethic and disability are held constant. Racial bias is then compared across conditions, holding disability constant, but varying race and work ethic. For example, the racial bias reflected in outcome

measures between Black ADHD No Hard Work (Condition 4) and White ADHD No Hard Work (Condition 2), is compared to the effect of hard work between Black ADHD Hard Work (Condition 8) and White ADHD Hard Work (Condition 6). Disability bias is expected to be lower between Conditions 8 and 6, than Conditions 2 and 4. I pre-registered all of the hypotheses at: https://aspredicted.org/blind.php?x=d6pa58.

In the following subsections, I will discuss how each of the three independent variables (race, disability, and work ethic) were signaled in the hypothetical vignette. I will then turn the measurement of the outcome variables.

a. Manipulation of Race

Race was chosen as an independent variable because of the disparate obstacles that Black individuals with disabilities face, compared to their white counterpart and the resultant divergence in outcome measurements such as employment and college graduation rates (Wagner et al. 2005: ES10, NCES 2015). Chapter 4 provides an in depth understanding of the specific barriers that Black students with ADHD and other disabilities face in an attempt to access resources and treatment. As academic accommodations are crucial to the success of a student with a disability, it is critical that this study design examined the role race plays in the decision making of Disability Service administrators.

Survey respondents are randomly assigned to receive a hypothetical email vignette from either a Black or white student. The race of the student is signaled by the racially distinctive sign off name at the end of the email. Respondents randomly assigned to receive an email from a Black student (Conditions 3, 4, 7, 8), received a hypothetical vignette that is signed off by "Jabari Washington" while respondents randomly assigned to receive an email from a white student (Conditions 1, 2, 5, 6), receive a vignette signed off by "Dalton Wood." In addition, the

racially distinctive name is included in many questions assessing primary outcome measures, for example, "How likely do you think ***Jabari Washington*** is to need at least some accommodations?".[18]

Using names to signal race is well-established as a valid approach (e.g. ,Butler and Homola 2017, Butler and Crabtree n.d.) This is important insofar as it ensures satisfaction of the excludability assumption. The excludability assumption states that respondent's reaction to the name is driven by the presumed race of the individual, and not some other factor, such as social economic status or political preference. Bulter and Homola (2017) find that this excludability assumption is justified in the use racially distinctive names, and respondents are unlikely to respond to factors other than race.

Moreover, Druckman et al. (2018) has validated the use of these names as signals for race, confirming that the vast majority of individuals would immediately associate these names with the intended race signal. Druckman et al. (2018) also show that the given names I use do not signal class status, immigration status, familiarity, or any other measurable confound.

b. Manipulation of Work Ethic

Work ethic was chosen as an independent variable to due to its founded connections with the concept of "deservingness" (Petersen et al. 2012, Blum et al. 2019) and other findings that those who are perceived as hard workers, tend to receive more public support for government assistance and resources (van Oorschot 2000). In addition, Black individuals and individuals with ADHD are often mischaracterized as being "lazy" or having a poor work ethic (Jardina & Piston 2019, Harnum et al. 2007), presenting the possibility that the resultant biases could be mediated by these stereotypes.

[18] See Appendix C for Survey Transcript

Under the work ethic variable, respondents are randomly assigned either a vignette email that explicitly mentions that the student is hard working or a vignette email that includes no mention of the work ethic of the student. The "hard work" condition is signaled through a single sentence added to the vignette: "I work very hard - I was just voted 'most driven' by my high school class (…)". The "no hard work" treatments, skips this statement in its entirety.

c. Manipulation of Disability: ADHD and Visual Impairment

This study design investigates the stigmas and barriers that individuals with different types of disability face though randomly assigning the hypothetical student as having either ADHD or a visual impairment. As aligning with the hypotheses in Section II (Table 3), the goal of this study is to elucidate bias against specific disabilities, racial discrimination within a given disability. In addition, I am able to investigate whether specific stereotypes surrounding ADHD (such as laziness) is establishing these biases through manipulation of high and absent work ethic. Although it would have been interesting to look at a larger range of disabilities, given the finite number of survey participants, these two disabilities limit the number of conditions and therefore increases the number of data points in each condition, raising the probability of detecting an effect. Random assignment of either ADHD or visual impairment allows the study to assess whether there is a statistically significant difference in deservingness measures and positive accommodation response between the two disabilities and racial disparities in accommodation distribution within each disability.

As discussed in Chapter 4, laziness is a stereotype often misassociated with individuals who have ADHD (Ingersoll & Goldstein 1993). In addition, individuals with ADHD are seen as less "deserving" than individuals who are deaf, blind or have down syndrome (Blum et al. 2019). Other literature links the concept of "deservingness" to the perception that the individual in

question is working hard (Will 1993), suggesting that the low perceived "deservingness" of individuals with ADHD could be correlated to a the "lazy" stereotype. On the other hand, individuals who have a visual impairment, or are blind, are seen as some of the "most deserving" out of a set of individuals with disabilities (Blum et al. 2019), making ADHD and visual impairment an intriguing contrast. In addition, while ADHD is a cognitive behavioral disability, visual impairment is a physical disability. While stigmatization varies greatly based on the specific disability, those with physical disabilities are generally seen as more deserving and instill in others greater levels of hope, pride and compassion than cognitive disabilities (Blum et al. 2019).

The following subsections (as well as Chapter 4) lays out important background information concerning ADHD and visual impairments, in addition to reporting on the known and documented racial disparities in the diagnosis and treatment of individuals with ADHD. There is a comparative lack of such evidence specifically for individuals with a visual impairment, despite great deal of evidence detailing discrimination against Black individuals with disabilities in general (Wagner et al. 2005). This study design will, therefore, clarify whether the racial discrimination faced by individuals with ADHD is absent or present for individuals with visual impairment

i. ADHD

Attention-deficit/hyperactivity disorder (ADHD) is behavioral disorder characterized by an ongoing pattern of inattention and/or hyperactivity and impulsivity that interferes or reduces the quality of social, school, or work functioning (American Psychiatric Association 2013). ADHD is the most common disability diagnosed for undergraduate students in the United States.

In the 2011-2012 school year, 21.8% of students with disabilities reported an ADHD diagnosis (NCES 2017).

ADHD has been extensively studied, concluding with reports of underdiagnoses in Black individuals, as well as disparities in the treatment and support of those who are diagnosed (Stevens et al. 2005; Miller, Nigg, and Miller 2009). This disparity is drawn out in undergraduate students with disabilities. 11.8% of Black students with disabilities have ADHD, compared to 26% of white students with disabilities (NCES 2017). A more in-depth exploration of racial dynamics in behavioral disabilities is offered in the Chapter 4.

ii. Visual impairment

The second disability studied through the vignette experiment is visual impairment. While hearing impairments are slightly more common for undergraduates than visual impairments, the accommodations for partial or complete blindness are greater in number and more standardized which makes it a better point of comparison.

Of students with disabilities in post-secondary institutions, only 2.9% have hearing or vision problems (NCES 2017). The low occurrence of visual impairments isn't a concern for the study, as the purpose is to look at racial inequities within each disability, and subsequently compare between ADHD and visual impairment. In great contrast to ADHD[19], the percentage of students with disabilities who have visual impairments is similar across races (3.1% white and 5.5% Black) and family income level (4.8% in lowest 25th percentile, 3.5% in highest 25th percentile) (NCES 2017).

[19] ADHD: white (26%), Black (11.8%), top 25th percentile income (39.7%), bottom 25th percentile income (23.8%) – See Chapter 4

In order to make the vignette more realistic, the hypothetical student is said to have been diagnosed with Stargardt disease.[20] Stargardt disease is a genetic visual impairment that causes progressive vision loss which can appear in late childhood to early adulthood. It specifically affects central vision, and often those affected will have difficulty seeing color and difficulty seeing in low lighting. Stargardt disease itself is incredibly uncommon, with an estimated prevalence between 1 in 8,000-10,000 (National Eye Institute 2019).[21] The respondents are not expected to know what Stargardt disease is or have even heard of it. The condition is explained in the vignette to the extent necessary in order to understand that it is a visual impairment. The disability is subsequently referred to as "visual impairment" throughout the rest of the survey.

c. Construction of Hypothetical Vignette

An example of one of the hypothetical vignettes (Black, visual impairment, hard work) is provided below (Figure 1). The bold and italicized portion indicates the portion of the vignette that changes depending on the assigned condition. See Appendix E for hypothetical vignettes assigned to the other seven conditions.

The vignettes along with many of the survey questions, were constructed with the intent of providing Disability Service administrators with a textbook case of a student with a disability asking about accommodations, that is similar to other they may receive on a regular basis. I worked closely alongside the Northwestern University Disability Service Office (AccessibleNU) as well with counselors who work with students with disabilities during the college application process to ensure the realism of the vignette email and internal validity of questions assessing

[20] This decision was made through in depth consultation with Northwestern University's Accessibility Office, based on their experience receiving emails from students with disabilities asking about academic accommodations
[21] https://www.nei.nih.gov/learn-about-eye-health/eye-conditions-and-diseases/stargardt-disease

primary outcome measures, such as documentation and accommodation response (Seawright 2016).

Jabari Washington is graduating from high school this spring and has been admitted to your college. Imagine he wrote you the following e-mail and think about how you would respond.

Hi,
I am writing to inquire about academic accommodations for my disability. I am graduating from high school this spring, have been accepted to your college, and am considering enrolling next fall. I have been diagnosed with a ***genetic visual impairment called Stargardt disease, causing me to be legally blind with 20/200 vision. While I work very hard – I was just voted 'most driven' by my high school class*** – I have received and used accommodations from my high school (throughout my high school career).

I have a few questions about how accommodations for ***my visual impairment*** would work in college. First, how do I apply for accommodations? Second, can I have regular appointments with someone in your office? Third, if so, how often could I have these appointments? Finally, is there an added cost for the support program?

Thank you,
Jabari Washington

Figure 1: Example of Hypothetical Vignette Email

Through consultation with individuals who work in disability services, I decided to use an admitted student rather than a prospective student for two reasons. First, I anticipated that such early requests may have sent a socioeconomic signal of sufficient resources and support needed in order to plan ahead and inquire about accommodations for disability. It could also signal certain motivations that I want to control for (e.g., I do not want to conflate admission likelihood with accommodations requests). Secondly, my understanding from those who worked in the area was that most requests come in after a student is admitted.

The source of the diagnosis is intentionally left vague, as to allow for more room for the subjective decision-making of the administrator in terms of documentation that the student may be required to provide and accommodations that the student may receive.

IV. Outcomes Measures

Primary Outcome Measures	Description
Attitudinal Measures	
Deservingness	Measure of how deserving the respondent believes the student to be
Trait evaluations	Abbreviated measure of perceived warmth/competence of the student from the Stereotype content model (Fiske et al. 2002)
Compliance	Measure of expected use of provided accommodations
Application Process Measures	
Self-Report Documentation	Measure of ease of bureaucratic process to receive accommodations
Likelihood of Receiving Accommodations	Measure of perceived commitment of applicant and respondent to receiving and providing accommodations
Accommodation Measures	
Regular Appointments	Binary measure of whether or not the student would receive regular appointments
Specific Accommodation Number	Number of accommodations that would be provided to the student

Table 5: Primary Outcome Measures and Descriptions

Following the hypothetical vignette, a series of questions were asked to capture a set of outcome measures concerning the attitude and behavior of the respondent towards the hypothetical student in the vignette email. The main outcome measures are split into three categories: 1) attitudinal outcome measurements, 2) application process outcome measurements, and 3) accommodation outcome measurements. Attitudinal outcome measurements assess the attitudes and the beliefs that the respondent holds about the student and includes judgment of the deservingness of the student, trait evaluations of the student, and compliance with received accommodations. Application process outcome measurements assess expectations of the respondent surrounding the administrative process of applying for accommodations including acceptance of self-report documentation and likelihood of receiving accommodations. Accommodation outcomes are a direct measurement of the provided accommodations which include access to regular appointments and number of accommodations received. These outcome

measurements provide a broad range of measures of the support that a hypothetical student would be provided by the Disability Service administrator.

a. Attitudinal Outcome Measures

i. Deservingness

As discussed in Chapter 5, "deservingness" has been revealed to be a powerful indicator of support for the allocation of resources, as people are more likely to allocate resourced when they perceive the individual to be deserving (Will 1993, Oorshot 200). Blum et al. (2019) finds that deservingness varies greatly with different disabilities, deaf and blind people considered to be the most deserving while those with addictions and ADHD are seen as the least deserving. In addition, a stereotype concerning the laziness and poor work ethic of Black individuals could decrease their perceived level of deservingness, assuming there exists a positive connection between work ethic and deservingness (Jardina & Piston 2019). In order to measure perceived levels of deservingness respondents were asked "Do you agree or disagree that ***Name*** *(Jabari Washington/Dalton Wood)* is deserving of accommodations for his ***disability*** *(ADHD/visual impairment)*?"

ii. Trait evaluations

The trait evaluations outcome measurement represents an abbreviated measure of the Stereotype Content Model along the warmth and competence axis (Cuddy, Fiske, and Glick 2008) to assess attitudes of Disability Service administrators towards the admitted student.[22] These attitudes can predict behavior that may not be captured by more direct outcome measurements. These questions ask the respondent to assess the confidence, competence, warmth, and sincerity of the hypothetical student. Specifically, I asked respondents to rate the

[22] See Chapter 5 for further discussion of the Stereotype Content Model

applicant on these traits on 5-point scales with higher scores indicating more positive assessments. Literature demonstrates that both Black individuals are assessed as being low on the warmth measure and medium on the competence measure, while individuals with disabilities as seen as high on the warmth measure and low on competence axis (Fiske et al. 2002, Fiske 2018). However, Blum et al. (2019) finds that individuals with ADHD specifically, inspire less compassion, hope, and pride than those with other disabilities, particularly physical disabilities such as blindness or deafness.

iii. Compliance with received accommodations

Compliance with received accommodations is measured through the question "If *NAME* were to receive accommodations, how likely do you think he would be to use them all?", assessed on a scale of 1-5, with 5 being most likely to use accommodations. Black individuals are often seen as less compliant than their white counterparts, specifically in health care environments as it pertains to compliance with medical advice (van Ryn & Burke 2000). While health care and college disability services diverge in many aspects, both doctors and Disability Service administrators operate as street-level bureaucrats and therefore engage in similar thought patterns in order to make efficient decisions about cases and clients. [23] Therefore, unconscious stereotypes and assumptions may be used as a mental short cut in decisions concerning the allocation of accommodations and other resources.

[23] Compliance in disability services, operates in a different manner than in a health care setting. Students with disabilities are not mandated to use their accommodations – they are provided to them for use when the student feels as though they are needed in order to make their academic environment more accessible. Nevertheless, the thought patterns that are associated with the distribution of accommodations or medications are worthy of comparison, as they may be tied to impressions of the clients that rest on unrelated identities .

b. Application Process Outcome Measures

i. Acceptance of self-report documentation

Acceptance of self-report documentation is an outcome measurement used to assess the ease or difficulty of accessing accommodations. Survey participants are asked what kinds of documentation would be acceptable in order to confirm the disability of the student and provide them with academic accommodations. Five out of the six documentation categories offered, require some external validation (from another party) of the disability – evaluations, physician letter, specialist letter, documentation of prior accommodation, or medication documentation. The sixth category is "Self-report" which does not require external validation and is the lowest barrier to obtaining accommodations. Acceptance of self-report documentation reflects higher levels of trust and ease in obtaining accommodations.

ii. Likelihood of receiving accommodations

Respondents are asked about how likely they believe the applicant is to receive accommodations, which is assessed on a 1-5 scale with 5 being most likely to receive accommodations. This question falls under the application process outcomes, as it assesses 1) a perception of how much effort the student will put in, in order to that he receives accommodations and 2) how much effort the Disability Service administrator is willing to put in to do the same. Similar to the documentation variable, it also assesses the judgement of the ease or difficulty in the bureaucratic process of receiving accommodations for a particular student.

c. Accommodation Outcome Measures

i. Specific Accommodation Number

Number of accommodations received are the outcome measurements that directly request information about the services that the respondent believes the student is entitled to. Respondents

are asked how likely this student is to receive accommodations and if they were granted accommodations, what accommodations they would receive. Academic accommodations between ADHD and visual impairment conditions vary – and therefore this is the one variable for which I cannot test for differences between disabilities (since the accommodations are not comparable). There were up to 13 academic accommodations for ADHD and up to 16 academic accommodations for visual impairment. These lists were generated with assistance from the Northwestern University Accessibility office. In other words, number of accommodations can only be compared across conditions that vary race and work ethic as the number and type varies between disability conditions.

ii. Regular Appointments

Respondents are asked "If ***Name*** received accommodations for ***Disability***, how unlikely or likely would it be that he would be able to have regular appointments with a disability counselor when he first enrolled?" Asking about regular appointments is another accommodation measure, as this is a direct assessment of the services and resources that would be offered to the student. Moreover, this measure actually requires more commitment on the part of the administrator, as they would be contributing additional time and energy (or that of a colleague), to the student. While different disabilities may necessitate disparate appointment needs, the fact that the student asks for whether they can have regular appointments in the email, highlights their interest making this a compelling outcome measurement.

These outcome measurements are compared across treatment conditions under the framework of the hypotheses presented using t-test and regressions to uncover statistically significant differences which are indicators racial bias, disability bias and the role of hard work in processing of bias.

b. Moderators

i. Racial Bias Training

After the vignette experiment and the questions assessing the primary outcome measures, respondents were asked common demographic questions along with questions pertaining to their work as Disability Service administrators, the results of which are shown in Table 2. In this section, respondents are asked "In the last five years, have you taken a course focused on minimizing racial bias in your job or more generally?" 65.57% of respondents reported that they had attended racial bias training in the last five years (Table 2). The effect of this moderator is directly tested in Hypothesis 4 which predicts that respondents who have undergone some type of racial implicit bias training will demonstrate less racial bias.

Interventions, such as racial bias training, have been shown to vitiate racial prejudice, particularly when people become aware of such biases and are concerned about the consequences of biases (e.g., Devine and Monteith 1993, Plant and Devine 2009). Devine et al. (2012) show that interventions can indeed lead to a dramatic reduction in implicit racial bias that endure.[24] Many post-secondary institutions offer administrators courses in implicit bias that could potentially reduce the effects posited by Hypothesis 2. I recognize the success of such courses depends on a host of variables including whether individual participants continue to work to recognize cases of potential bias, care about such bias, are motivated to correct it, and have learned strategies to do so.[25] Nonetheless, all else constant, such courses could have an effect, particularly because the racially liberal attitudes of the sample suggest they are motivated to avoid racial bias.

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[24] Lai et al. (2014) show the most effective interventions are those that include counter-stereotypical examples, using evaluative conditioning methods, and provide strategies to overcome biases.

[25] Li et al. (2016) find many interventions have only short-term success; however, they do not explore the success of more extensive courses among populations that may be particularly motivated to limit bias.

Those who have taken some racial bias training may be more cognizant of biases against Black individuals, and therefore may correct for said biases. This could mediate a higher level of deservingness and positive accommodation response for the Black student treatments (Conditions 3, 4, 7, 8) from those who have attended racial bias training as, relative to those in the same treatment condition who have not.

ii. Racial Resentment Measures

Racially prejudiced attitudes are assessed using three different questions from measures developed by Kinder and Sanders (1996). While racial resentment is low among the sampled population of Disability Service administrators, high racial resentment could moderate higher levels of bias against Black students resulting in lower assessments outcome measurements relative to other respondents with low racial resentment in the same condition.

iii. Disability Social Distance Measures

Disability Social Distance measures are a means of determining whether the respondent holds prejudice against individuals with disabilities. Questions are taken from the Bogardus social distance scale, assessing the level of comfort an individual has with others of specific disabilities. The average score among the respondents on the Disability Social Distance was very high, with higher scores correlated to less prejudice, which makes sense given most of these respondents have chosen to work in the Disability Services field.

The Disability Social Distance measures were two pronged, assessing for prejudice against individuals with ADHD and against individuals with visual impairments. Low Disability Social Distance measures (higher prejudice) against either individuals with ADHD or those with visual impairments may moderate negative outcome measurement relative to other respondents in the same conditions with low disability prejudice.

The exact measures used as well as a discussion of average racial resentment and disability social distance scores of the sample is discussed above in Section II. Experimental Sample and Table 2.

Chapter 7

Results

I. Procedure for evaluating hypotheses

I focus the analyses on non-Black respondents only, since the racial bias predictions do not apply to Black individuals (but all results are the same if I were to include Black respondents). I included three manipulation checks in the survey to confirm respondents were cognizant of variables in the vignettes: 99% correctly identified the applicant's disability, and 97% correctly identified the name of the applicant. Additionally, when asked about whether the applicant had worked hard, those in the in the strong work ethic conditions (condition 5, 6, 7, 8) reported significantly higher scores, compared to those in the non-work ethic conditions.[26]

I test the hypotheses by regressing each outcome variable on dummy variables that identify the race of the applicant for Hypothesis 3 (i.e., African-American; conditions 3, 4, 7, 8), the applicant's disability for Hypothesis 2 (ADHD; conditions 2, 4, 6, 8), and the applicant's work ethic for Hypothesis 1 (hard work; conditions 5, 6, 7, 8). Further, since I anticipate work ethic to matter particularly for Black individuals and those with ADHD (Corollaries 1, 2), I include variables to indicate Black student and hard work conditions (7, 8), and ADHD and hard work conditions (6, 8). Finally, to evaluate Hypothesis 4 regarding racial bias training, a variable is added to indicate if the respondent had taken an implicit bias course, an interaction with the race dummy (to see if reduces any racial bias), and an interaction with the Black-hard work

[26] Specifically, on a 5-point scale with higher scores indicating hard work, those in the work ethic condition scored 4.09 (.83; 289) while those in the non-work ethic condition scored 3.46 (.70: 284) (t_{571} = 9.85; $p < .01$.). Respondents were also to assess the race of the applicant but 71% opted for the "prefer not to guess" option. Of those who did guess, 96% were correct (N = 166). This suggests the names sent a clear signal but also that this population is averse to explicit racial labeling.

conditions since the course effect may disappear given hard work will have otherwise vitiated the racial bias (or vice versa).

Regressions were also run to look at institutional and individual controls. All results are robust and none of the controls were consistently significant. Therefore, it appears that the contextual case-based circumstances drive the outcomes, rather than individual or institutional variables (Appendix F).

Variable	**Scale**	**Average (Std. Dev; N) / Percentage (N)**
Attitudes		
Deservingness	1-5 scale with higher scores = more deserving	4.21 (.95; 572)
Use Accommodation/Compliance	1-5 scale with higher scores = more use	3.63 (.79; 565)
Traits	1-5 scale with higher scores = more favorable traits	3.73 (.60; 561)
Application Process		
Self-Report Acceptable Documentation	Not Acceptable / Acceptable	43% (576)
Receive Accommodation	1-5 scale with higher scores = more likely to receive	4.22 (.82; 573)
Accommodations		
Have regular appointments	1-5 scale with higher scores = more likely to have regular appointments	3.81 (1.13; 574)
Number of ADHD accommodations	Count between 0 and 13	4.45 (1.68; 285)
Number of vision accommodations	Count between 0 and 16	8.20 (2.27; 291)

Table 6: Outcome Measurements, Scale, and Average Values

In Table 6, I present the main outcome variables along with their average scores across the entire sample. Perhaps the most notable aspect of this type is the high deservingness and receive accommodation scores – of 4.21 and 4.22 respectively. Thus, in general, respondents were sympathetic to the applicant and believe he would receive an accommodation. That said,

there is variation to be explained in these and the other responses and that is to what I now turn with the regressions.

II. Results of analysis

a. Attitudinal Outcome Measures

In Table 7, I present the results for the variables the measure the attitudinal variables. I see strong support for my hypotheses across the board. First, across all three outcome variables – deservingness, traits, and compliance – there is a clear bias against Black individual (Hypothesis 3), and those with ADHD (Hypothesis 2). Moreover, as predicted by Hypothesis 1, a strong work ethic leads to more positive evaluations (although only at .1 level of significance). Moreover, the data reveal strong evidence for interventions that have the potential to counter these biases. Consistent with Hypothesis 4, racial bias training leads to more positive evaluations for Black students.

When it comes to ADHD, if the applicant presents evidence of a strong work ethic, by referencing that they have been voted "most driven" in his high school class, the bias disappears, as predicted in Corollary 1. This suggests that ADHD stereotypes of "laziness," implicitly manifest in accommodation attitudes. The upside is that these biases can, in theory, be addressed via education in order to correct the inadvertent and inappropriate association of ADHD with poor work ethic. The study also revealed that only 41% of respondents knew that Black individuals were underdiagnosed with ADHD, further demonstrating the areas for growth that can be supported through target education.

I find the same dynamic – a la Corollary 2 – that work ethic counters racial bias. It does so significantly in the case of compliance but falls just short of significance for deservingness and trait evaluations (e.g., $p \leq .12$ for a two-tailed test). I further find *very strong* evidence that

having taken a racial bias training course eliminates racial bias as is clear from the significant interaction between the Black student condition and having taken the implicit bias training class (Hypothesis 4).[27] This makes clear that education can be a strong counter to biases in decisions, across all of the outcome variables.

	(1) Deserving	(2) Traits	(3) Compliance
Black	-0.335**	-0.307***	-0.506***
	(0.159)	(0.101)	(0.137)
ADHD	-0.797***	-0.232***	-0.462***
	(0.103)	(0.066)	(0.089)
Hard Work	0.208*	0.253***	0.189*
	(0.125)	(0.080)	(0.109)
Hard Work *	0.384***	0.192**	0.351***
ADHD	(0.145)	(0.092)	(0.125)
Hard Work *	0.313	0.193	0.471***
Black	(0.196)	(0.124)	(0.168)
Race Bias Training	-0.051	0.065	-0.110
	(0.111)	(0.071)	(0.096)
Race Bias Training*	0.469**	0.535***	0.667***
Black	(0.187)	(0.119)	(0.161)
Race Training	-0.433**	-0.269**	-0.642***
Hard Work*Black	(0.211)	(0.134)	(0.181)
Constant	4.441***	3.602***	3.774***
	(0.117)	(0.074)	(0.101)
Observations	572	561	565
R-squared	0.174	0.190	0.141

All models are OLS. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1 for two-tailed tests.

Table 7: Attitude Regressions

[27] The negative significant interactions between the course and the African-American hard work conditions means the course nullifies any added effect of just learning about work ethic (cancelling out the positive coefficient on African-American and work ethic) – that is, there is no additive effect of working hard for those who took a course.

To gauge the size of the effects, in Figure 2a, 2b, and 2c, I present predicted deservingness values with standard errors (recall on a 1-5 scale) for illustrative conditions that highlight the hypothesized effects.[28] For example, a white applicant with a visual impairment receives a predicted deservingness score of 4.44, but this drops – holding all else constant – if that same applicant instead presents as having ADHD to 3.64 (a .80 or 20% drop).[29] The figure also illuminates the race effect, which while smaller than the disability bias, still reveals a notable drop from 4.44 for a white visual impairments applicant to 4.11 for an Black visual impairment applicant (a .33 or 8% drop).[30] Even smaller, but still significant is the hard work effect – adding the hard work superlative to a white visual impairment applicant increases deservingness evaluations by .21 to 4.65 (5%).[31]

Within the Deservingness outcome measurement, hard work and racial bias training has powerful effects Adding hard work for a white ADHD applicant moves the deservingness rating from 3.64 to 4.24 or .60 (15%), thereby vitiating although not entirely eliminating the disability bias. I see the same effect of hard work with Black applicants raising the score of an Black applicant with a visual impairment from 4.11 to 4.63 (.52, 13%).[32] Finally, I see racial bias training has a large impact shifting a Black applicant with a visual impairment from 4.11 to 4.53 or .52 (13%).[33] The hard work and race bias corrections actually lead Black applicants with a

[28] I generated the predicted values from the regression in Table 5, using *Clarify* (King et al. 2000).

[29] If we instead look at Black vision versus ADHD, the drop is also .80. This sizable move coheres with Blum et al. (2019) who find nearly a full point movement on a 7-point scale on some traits when it comes to ADHD versus physical disabilities (e.g., hearing loss).

[30] The movement from a white applicant with ADHD to a Black applicant with ADHD is also .33.

[31] The hard work effect for Black applicants with vision is much larger -- .52, reflecting the larger effect of hard work for Black applicants, which I shortly discuss.

[32] The compounding effect of hard work for both ADHD and race leads to a large .91 shift for a Black ADHD applicant without hard work to one with hard work.

[33] The effect in the case of vision is also .42.

visual impairment to *exceed* the score for a white applicant with a vision disability (4.44).[34] These figures highlight substantively meaningful effects: perceptions of hard work and race bias training make a large dent in disability and race discrimination, in some cases making the bias much smaller and in others completely eliminating them.

In Figure 2b, I present predicted Traits values with standard errors (measured on a scale of 1-5, 5 being the most favorable traits). While the size effects are slightly smaller than shown in Deservingness data, a white applicant with a visual impairment receives a trait score of 3.60, while a white applicant with ADHD receives a score of 3.37 (0.23, 4.6% drop). The race effect is slightly larger than the disability effect with the assessment of the white visual impairment applicant at 3.60 dropping to 3.29 for the Black visual impairment applicant (0.31, 7.8% drop). However, the impact of hard work corrects this bias, increasing the assessment of the Black visual impairment hard work applicant to 3.74, 0.14 points above the white visual impairment applicant (3.60), yet still below the white visual impairment hard work applicant (3.86). When looking at the effect of hard work, I see that addition of strong work ethic moves white ADHD from 3.37 to 3.82 (.45, 11%) and a slightly smaller effect with white visual impairment applicants from 3.6 to 3.86 (0.26, 6.5%). Finally, the largest shift occurs when looking at the effect of racial bias training on the Black applicant with a visual impairment. Racial bias training increases the trait assessment of a Black student with a visual impairment from 3.29 to 3.89 (0.60, 15%), which is the highest overall trait assessment given to an applicant.

In Figure 2c, I present the predicted values for the Compliance outcome measurement (scale 1-5, with 5 being the most compliant with their accommodations). Striking evidence of racial bias appears in the drop between the assessment of the white visual impairment applicant

[34] I do recognize the Black X hard work interaction in the deservingness regression fall short of significance, but the substantive effect is nonetheless clear, and it is significant at .11 level for a two-tailed test.

to the Black visual impairment applicant from 3.77 to 3.27 (0.5, 10%). Hard work fully vitiates this bias, raising the Black visual impairment applicant 0.62 points to 3.93. I observe similarly strong effects with disability bias dropping from 3.77 to 3.31 between the white visual impairment and white ADHD applicant (0.46, 9.2%). Again, the hard work corrects for this disability bias, increasing the assessment of the white ADHD applicant from 3.31 to 3.85 (0.54, 11%). The effect of hard work corrections ended up exceeding the initial racial *and* disability bias. Finally, racial bias training also corrects for racial bias, increasing the assessment of the Black applicant with a visual impairment from 3.27 to 3.83 (0.56, 11%). The effect of racial bias training also corrected the racial bias to such an extent that racial training lead to the Black visual impairment being assessed at higher levels than the white visual impairment applicant (3.77 to 3.83).

Overall, attitudinal outcome measures show that racial bias (Hypothesis 3) and disability bias (Hypothesis 2) is present across all three outcome variables: deservingness, traits evaluations, and compliance. Furthermore, hard work is also shown to lead to more positive evaluations (Hypothesis 1), vitiating racial and disability bias in many cases (Corollary 1 and 2). Finally, racial bias training has a strong effect in correcting for racial bias, leading to high attitudinal outcome measurements across all three measurements (Hypothesis 4). From these findings, I determine that race and disability are indeed characteristics of an applicant that will inform the attitudes that an administrator forms in the course of assessing accommodation potential. Opportunely, the data also show that these attitudes are driven by misunderstood stereotypes that can be corrected through implicit bias training.

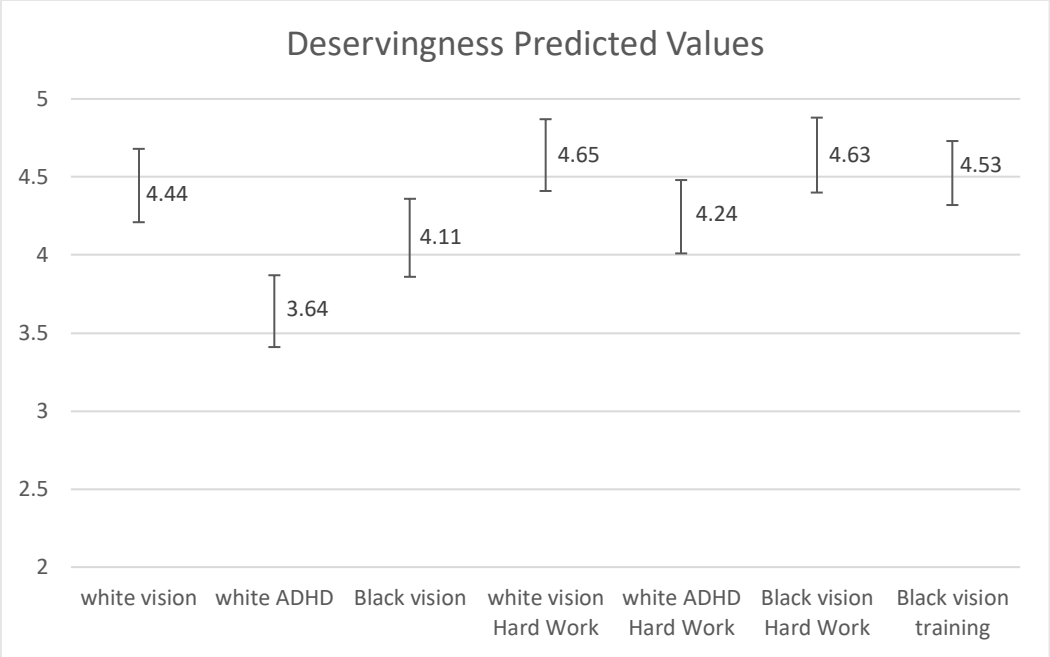

Figure 2: Deservingness Predicted Values

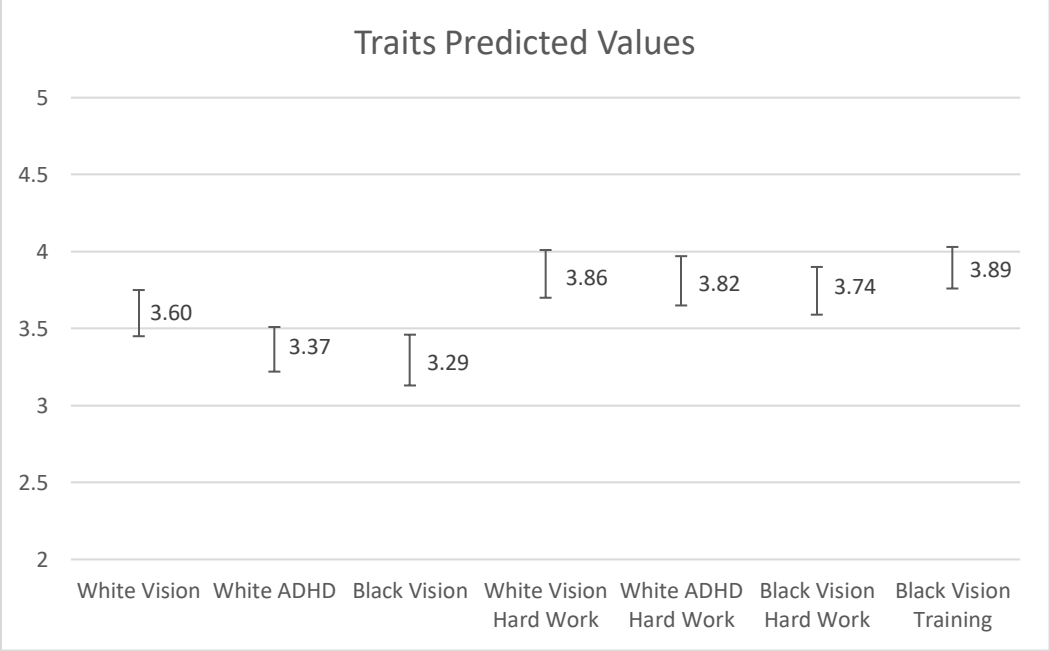

Figure 2b: Traits Predicted Values

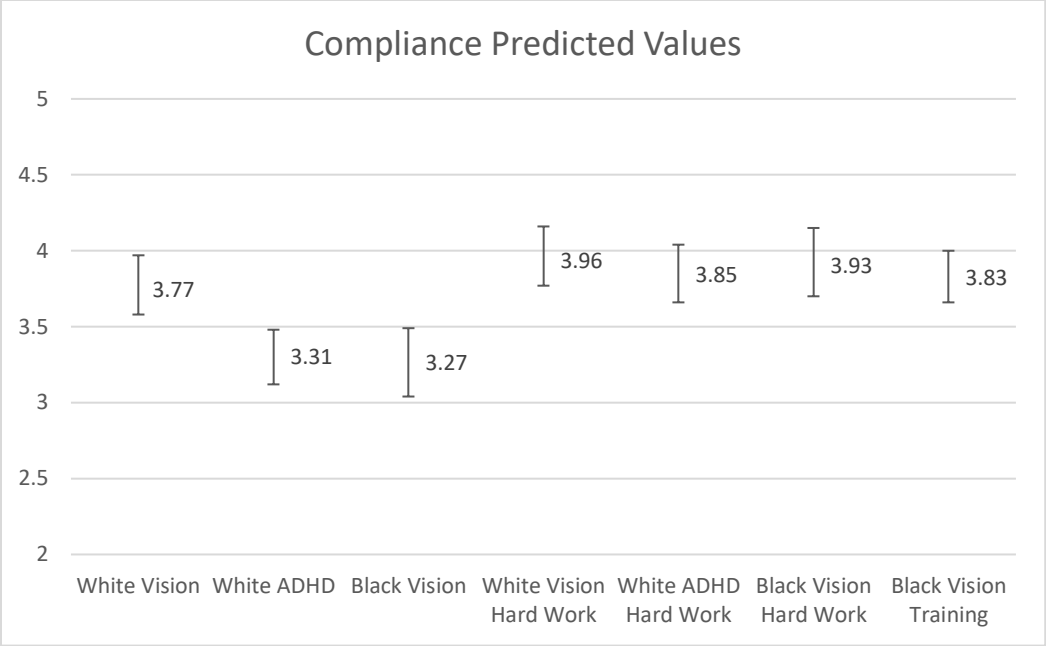

Figure 2c: Compliance Predicted Values

b. Application Process Outcome Measures

We next turn to the outcome measurements that assess the expectations of the administrator surrounding the application process, in Table 8. (I use a logit regression for self-report documentation since it is a binary variable.) I again see clear evidence of racial and disability biases, with respondents being significantly less likely to accept self-report documentation and less likely to anticipate granting accommodations to Black applicants and those with ADHD, supporting Hypothesis 2 (disability bias) and Hypothesis 3 (race bias). I do not find a direct effect of hard work, although it does counteract ADHD bias and comes close to significantly vitiating racial bias.

In Figure 3a, I present the predicted values for the likelihood of receiving accommodations, on a 5-point scale with higher scores being more likely. Figure 3a makes clear that the disability effects again dwarf the racial bias: those with a visual impairment are nearly assured of accommodations whereas those with ADHD are a full point less likely to receive accommodations. More interesting is that the hard work reference substantially increases ADHD

scores from 3.78 to 4.07, even though those who work hard with ADHD may have less need of accommodations (even if they are equally as entitled to them). Hard work also vitiates the race bias; however, the training course has the largest effect and in fact leads to the highest overall score. Respondents who have taken a racial bias training course perceive a greater likelihood of a Black student receiving accommodations than an analogous white student (whereas those who did not take a course display a large bias in the other direction). Therefore, hard work and race bias training again substantially undue biases in decisions and expectations surrounding the application process.

	(1) Doc. Self-Report	(2) Receive Acc.
Black	-1.519***	-0.345**
	(0.470)	(0.135)
ADHD	-1.348***	-0.823***
	(0.273)	(0.087)
Hard Work	0.047	-0.011
	(0.299)	(0.107)
Hard Work *	0.867**	0.302**
ADHD	(0.366)	(0.123)
Hard Work *	0.680	0.258
Black	(0.546)	(0.166)
Race Bias Training	-0.155	-0.015
	(0.266)	(0.094)
Race Bias Training*	1.397***	0.434***
Black	(0.529)	(0.159)
Race Training	0.040	-0.387**
Hard Work*Black.	(0.581)	(0.179)
Constant	0.347	4.599***
	(0.283)	(0.099)
Observations	575	573
R-squared	N/A	0.203
Log-likelihood	-357.08	N/A

Models 1 and 3 are OLS; Models 2 is a logit. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1 for two-tailed tests.

Table 8: Application Process Regressions

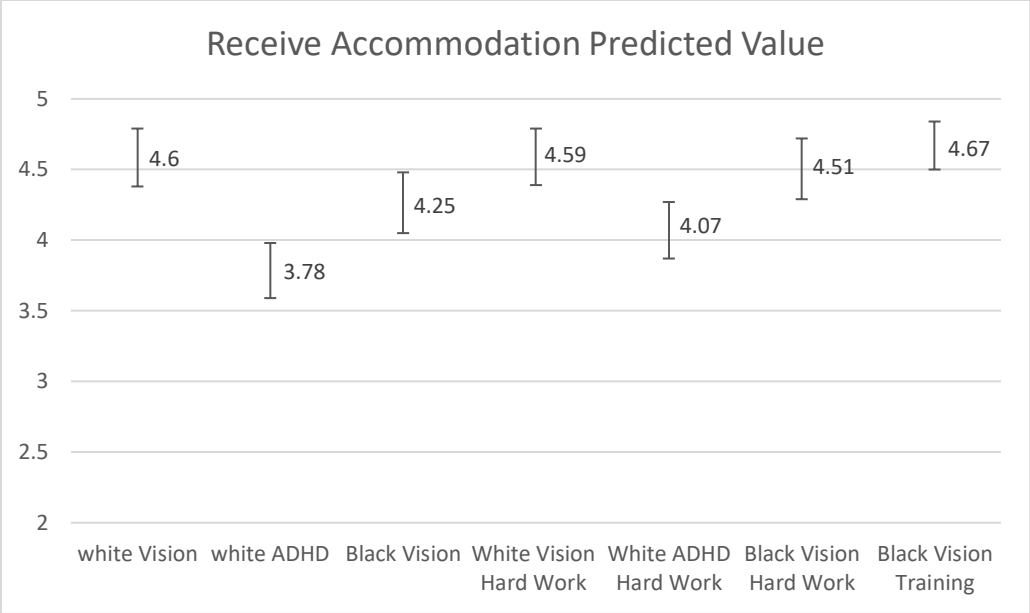

Figure 3a: Receive Accommodation Predicted Values

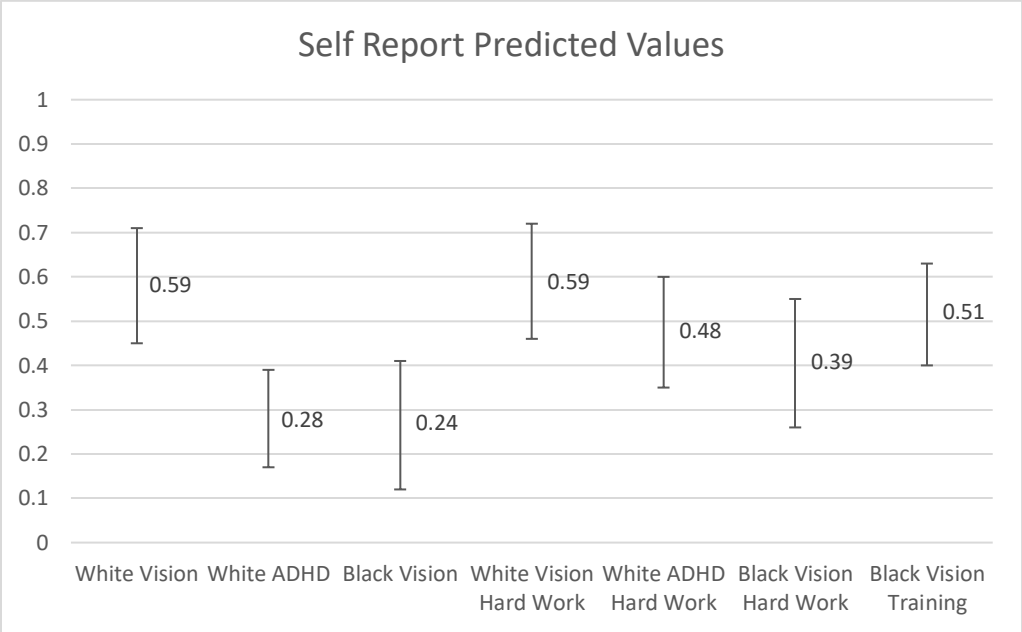

Figure 3b Self Report Predicted Values

In Figure 3b I present predicted values for the acceptance of self-report documentation (a binary measure 0-1, 1 = accepting self-report documentation). In this appraisal, I see strong evidence of race and disability bias. White visual impairment applicants (0.59) received a 0.31 and 0.35 increase in self-report acceptance over Black visual impairment applicants (0.24) and

white ADHD applicants (0.28), respectively. While this bias is lessened by the effect of hard work, it does not fully correct the bias resulting in white ADHD hard work and Black visual impairment hard work applicants still receiving less documentation lenience than white visual impairment applicants. Racial bias training does the most the minimize bias, increasing acceptance of self-report documentation from 0.24 for Black visual impairment candidates to 0.51 from respondents who have undergone training.

In summary, for the two application process measurements, I find that again that clear racial (Hypothesis 3) and disability bias (Hypothesis 2) in present. While the direct effect of hard work and racial bias training is not visible (Hypothesis 1), both variables work to minimize bias against and students with ADHD and Black students (Corollaries 1 and 2, respectively). Therefore, in the process of anticipating the application process for students, administrators do present biases and discriminatory behavior against Black students and students with ADHD. Although evidence less forcefully than in attitudinal measures, it appears that these biases can be minimized through education that corrects misconceptions and stereotypes about the hard work of both these groups.

c. Accommodation Specific Outcome Measurements

Finally, I turn to the accommodations provided in Table 9. The first model looks at the likelihood of the student receiving regular appointments with a disability counselor. Here, I see some bias against those with ADHD, but the interpretation is ambiguous since it may be that those with visual impairments require more appointments to ensure functional accommodations. Otherwise, unlike with attitudes and documentation, I see *no* racial bias, *no* effect of hard work (even as an antidote to the ADHD effect), and, given no racial bias, *no* impact of a training course. The final two models look at the number of specific accommodations granted; I analyze

these in distinct models since particular accommodations are not comparable across disabilities due to the varying number for ADHD vs. visual impairment conditions. I find *no* evidence of racial or hard work bias.[35]

	(1) Regular Apt.	(2) ADHD Num. Acc.	(3) Vision Num. Acc.
Black	-0.164	-0.020	-0.022
	(0.205)	(0.122)	(0.094)
ADHD	-0.344**	N/A	N/A
	(0.134)		
Hard Work	-0.109	-0.095	0.046
	(0.163)	(0.081)	(0.059)
Hard Work *	0.142	N/A	N/A
ADHD	(0.188)		
Hard Work *	0.364	0.173	0.008
Black	(0.254)	(0.152)	(0.113)
Race Bias Training	0.002	0.064	-0.025
	(0.144)	(0.088)	(0.064)
Race Bias Training*	0.039	0.028	0.078
Black	(0.242)	(0.146)	(0.108)
Race Training	-0.217	-0.003	-0.007
	(0.273)	(0.162)	(0.120)
Constant	4.006***	1.458***	2.081***
	(0.152)	(0.080)	(0.062)
Observations	574	284	291
R-squared	0.021	N/A	N/A
Log-likelihood	N/A	-555.52	-666.58
Ln-Alpha	N/A	-21.360	-55.775

Model 1 is an OLS; Models 2 and 3 are Negative binomial regressions. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1 for two-tailed tests.

Table 9: Accommodations Regressions

In Figure 4a, we show the results for the regular appointment outcome variable. The figure starkly contrasts with the prior figures insofar as other than a slight ADHD bias; I see no other effects – race, hard work, and race training do not matter. The data show very slight drops

[35] To unpack that further, I explored each individual accommodation for each disability (see the Appendix F) and again I see virtually no evidence of any type of bias.

for disability bias between white visual impairment and white ADHD (4.01 to 3.67 out of 13 possible accommodations, 2.6%) and even smaller drops for racial bias between white vision and Black vision (4.01 to 3.83, 1.3%). Neither of these biases are significant. Moreover, the effect of hard work and racial bias training is minimal and insignificant. Hard work actually *lowers* the assessment of regular appointments for the white visual impairment applicant, very slightly from 4.01 to 3.90 (0.11, 0.8%). Racial bias training barely increases the assessment of the Black visual impairment applicant from 3.83 to 3.88 (0.05 increase, 0.4%). Relative to the effects of hard work and racial bias training found in the attitudinal outcome measurements and the application process measurements, these effects are not significant.

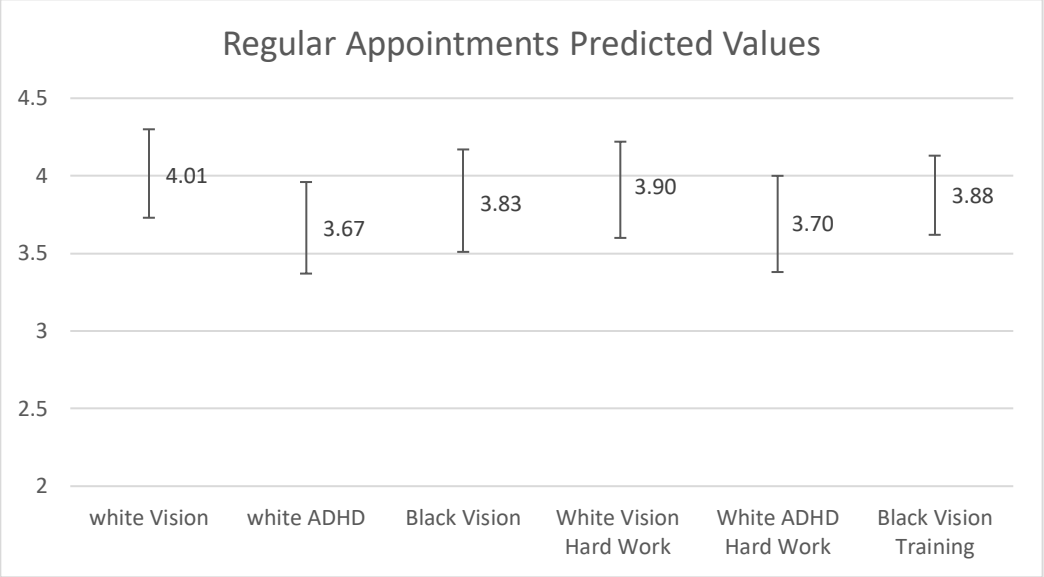

Figure 4a: Regular Appointments Predicted Values

The same is true when observing Figure 4b and 4c. I Figure 4b, I present ADHD accommodation values. Again, no effects are seen with racial bias; the assessment of accommodations Black applicants would receive drops slightly from 4.31 to 4.24 (0.07, 1.4%). Interestingly, hard work slightly increases accommodations that Black students with ADHD receive, while it decreases the accommodations that white students with ADHD receives, however this effect is not large enough to be significant. The effect of hard work and racial bias

training also only marginally increases the assessment of the Black student. Similar trends are seen in Figure 4c with accommodations for visual impairments. No racial bias is present, and hard work and racial bias training marginally raises assessments for white and Black students. Racial bias is insignificant, dropping 0.17 (1% out of 16 different accommodations). The effect of Hard work is also inconsequential, only raising the number of accommodations provided 0.4 (2.5%) for white students and 0.45 (2.8%) for Black students. Racial bias training has an even smaller effect than hard work, only increasing the number of accommodations by 0.43 (2.7%).

Thus, unlike the attitudes and documentation variables, when it comes to the accommodation provisions, bias is much less present. This difference may reflect greater institutionalization of particular supports where staff have less leeway to make decisions. These results though do not minimize the findings with regard to attitudes and the documentation process as those outcomes clearly matter in terms of the possibility and nature of how the service is delivered.

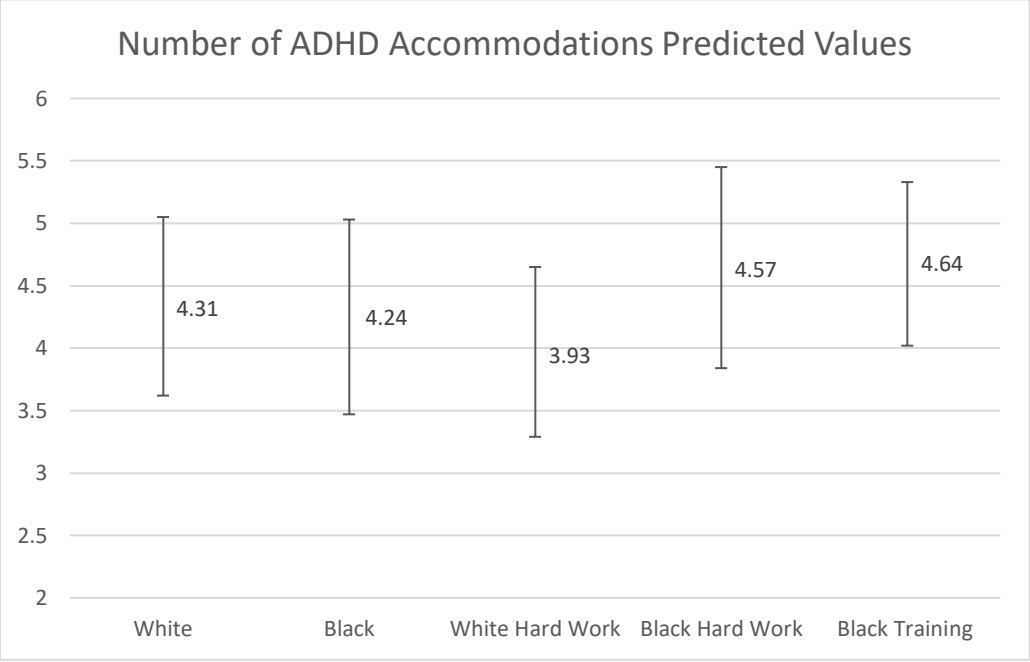

Figure 4b: Number of ADHD Accommodations Predicted Values

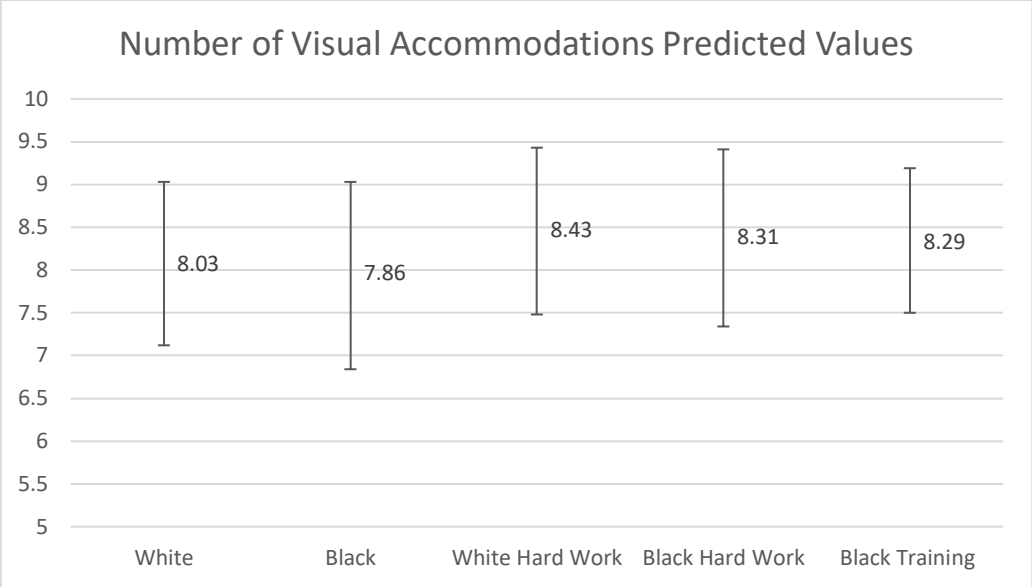

Figure 4c: Number of Visual Accommodations Predicted Values

d. Alternative Moderators: Race and Disability Prejudice

The data revealed that respondents had very little racial resentment or prejudice held against those with disabilities. The average racial resentment score was 0.21 on a scale of 0-1 (1 being the most resentment and the average disability social distance score was 3.79 with 4 being the least prejudice. Nonetheless, it is possible that these variables could moderate the relationships – of particular interest is whether it is a decrease racial resentment rather than training that counteracts racial bias.

I tested these possibilities and find no evidence that either scale matters. The regressions for racial resentment in attitude and application process outcome measurements (excluding accommodations because the lack of racial and disability bias) are shown in Appendix G. In 4/5 cases, the interaction between racial resentment and the Black condition is not significant, demonstrating that it is not a moderating variable. Moderating effects of disability social distance were not tested with regressions, as virtually everyone gave the lowest score possible, making it near impossible for this variable to moderate disability bias. In short, it is race bias training and

not pre-existing racial attitudes that counter racial discrimination. Furthermore, it is likely that unconscious stereotypes associated with ADHD and Black individuals cause disability and racial bias, rather than intentionally harmful discrimination.

III. Discussion

From these results, we come away with a much clearer picture of how disability accommodations are provided. First, the race and the disability of a given applicant strongly informs the attitudes and application expectations that Disability Service administrators form when interacting with students. Individuals with ADHD and Black students are less likely to be seen deserving of accommodations, less likely to be seen as warm, competent, sincere, or confident, and perceived as less likely to use their accommodations if they receive them. These attitudes inform the holistic assessment that will instruct the behavior and treatment of the administrator towards the applicant, regardless of whether or not this is captured in accommodation decisions.

Moreover, Black students and students with ADHD are presented with greater barriers to accessing accommodations during the application process. Administrators are less willing to accept self-report documentation from Black students and those with ADHD and are also less likely to anticipate granting these students accommodations. All these findings are in support of the predicted disability bias articulated in Hypothesis 2 and the racial bias expressed in Hypothesis 3 (Table 3). These measures therefore reflect a changing structure of expectations that Disability Services administrators hold for students based on their race and disability.

However, additional findings also reveal an underlying mechanism through which these biases form and contain normative implications for what could be future action steps. The addition of work ethic as a tertiary variable, reveals the robust and active role for the stereotype

of laziness and poor work ethic underlying perceptions of Black applicants and those with ADHD. The addition of hard work in otherwise analogous conditions shows that it largely vitiates race and disability bias for attitudinal and documentation outcome measures. When this stereotype is corrected and disassociated from race or disability, the minimization in bias is significant. These findings support the predicted effect of strong work ethic in reducing disability bias (Corollary 1) and racial bias (Corollary 2).

Moreover, the strong effects of implicit bias training in mitigating racial bias (Hypothesis 4), further supports the mechanistic role of stereotypes in driving the bias seen attitudinal and application process outcome measurements. These correlative findings strengthen and support the causal claim of the role of perceived work ethic in determining attitudes surrounding applicants, as well as the expectations of documentation and perceived likelihood of receiving accommodations.

Interestingly, I did not see any evidence of race or disability bias when it came to specific accommodations, nor did I see any effect of the manipulation of work ethic, in great contrast to attitude and application process outcome measurements. I now discuss why this distinction was revealed in the data. Academic accommodations are innately linked to the disability in the common thought process of an administrator and therefore are more standardized and institutionalized than the attitudinal outcome measurements.[36]

To explain further, the question: "What accommodations will they need in order to be successful in an academic environment?" is one that Disability Service administrators must think

[36] I argue this with the caveat that based on my conversations with those in this work, Disability Service administrators are the first to acknowledge the heterogeneity of disability, limitation, and needs and spend a large amount of time in discussion with individual students about what specifically they need in order for their academic environment more accessible. This does not lessen the strength of the assertion that the strong effect of the programmed response they may have given the little information they are provided by the vignette.

about each time they interact with a student who has ADHD, a visual impairment, or any other disability. Some accommodations are so often asked for, or recommended to students with specific disabilities, that they are essentially institutionalized, in that there may be an assumption that a student with a particular disability would receive this accommodation. In this study, respondents were given very little information to operate off of (see Appendix E for vignettes), other than their disability, race, and work ethic. When asked about what accommodations this student would receive, this could cue the retrieval of the assigned disability along with a list of accommodations that they would commonly associate with this disability given their past experiences.

On the other hand, these administrators are rarely explicitly (if ever) asked, how deserving they think the student is, or how sincere they believe the student to be. These are therefore questions that force respondents to critically assess the content of the email and examine their own reactions. Given the effect of racial bias training and the extremely low racial and disability prejudice, it is likely that many of attitudes are unconsciously informed by race and disability. However, when being asked to give a more holistic assessment of the student in terms of their own attitudes, they may be more prone to including characteristics such as race and work ethic in this appraisal.

Turning to the application process outcome measures, documentation and likelihood of receiving provisions are going to be less institutionalized and unlikely to be linked with specific disabilities. Documentation provisions will depend on aspects of the case, such as whether or not there has been a recent diagnosis, and also varies greatly between schools. Particularly when respondents are given so little information to go off of, their integrated assessment may include factors such as race. Moreover, when looking specifically at whether or not the student would be

allowed to submit a self-report, the administrator is being asked about the level of trust he or she maintains in the applicant. Is the word of the student important and/or necessary? While this question is not explicitly asked, it is implicitly tied to the assessment of documentation requirements. The same is true for the question that assesses the likelihood that the student will receive accommodations. It is not only assessing the willingness of the administrator to hand over accommodations (which could be linked to assessments of deservingness), but also the perceptions of the commitment of the student to following through with the process which usually requires meetings, paperwork, and planning on the behalf of the student.

Certainly, this negative finding in accommodation outcome measurements also reminds us of the complex and multifaceted relationship that street-level bureaucrats often maintain with their clients. Indeed, these contacts are not merely transactional. This is especially the case for relationships between applicants and Disability Service administrators, where students often interact with the office in the process of taking tests, or in the processing of renewing or shifting their academic accommodations. Disability Service offices also often act as a support systems for students with disabilities, a place where such advisors are committed to making campus for accessible for them and working with students to do so. If Black students or students with ADHD, sense that they are seen as less deserving or less competent than their white counterparts or those with visual impairments, they may be less likely to look at these offices as a welcoming place of acceptance and support.

In addition, as discussed in Chapter 2, the onus lies on the student to drive forward the process of receiving the accommodations and resources that they need in order to thrive on a college campus. This is a difficult and challenging avenue to navigate in the best of cases. However, if Black students or students with ADHD sense that they are believed be to

characteristically different than their white counterparts or those with physical impairments, they could be discouraged or demoralized. This is even more so the case if the bureaucratic processes of collecting documentation and reporting their disability, is made more difficult by administrators for Black students and students with ADHD, as detailed in the data.

Ultimately, one of the biggest take-aways from this study is that there already exists a large groups of Disability Service offices at colleges and universities across the country that are taking actionable steps to mitigate the effect of these biases through implicit bias training. Of all of the respondents to the survey, 65.57% had taken some type of racial bias training and as discussed above, across attitudinal and application process outcome measurements, the implicit bias training was strongly correlated with minimized bias. The effect of the strong work ethic treatment provides even more evidence these inaccurate stereotypes are driving discrimination and bias against Black applicants and applicants with ADHD. Thus, when colleges and universities are attentive to these disparities and acknowledge the unconscious biases that we all hold, there is tremendous potential to create environments that are not only accessible but also equitable across disability and race.

Chapter 8

Action Steps, Further Research, and Conclusions

The purpose of this study is to fill in a gap in disability policy literature, that looks specifically at those who are responsible for the provision of resources to students with disabilities in higher education. To my knowledge, the population of Disability Service administrators is not one that has previously been directly studied in spite of their relevance and importance higher education disability studies. Using a survey with experimental vignettes, this study directly assesses the attitudes and behavior of these administrators towards students with disabilities based on their race, disability, and work ethics. The results of this study maintain direct implications under federal laws, specifically, the Civil Rights Act of 1974 and the Americans with Disabilities Act of 1990, which prohibit discrimination on the basis of race and disability, respectively.

The study finds that administrators discriminate on the basis of race and disability when it comes to their attitudes about the student and their expectations for the application process that students must go through to receive accommodations. Black students and students with ADHD are negatively assessed in attitudinal outcome measures and application process outcome measures relative to their white counterparts and those with physical disabilities, respectively. However, the study does not find evidence that Disability Service administrators demonstrate bias in the provision of specific accommodations. Perhaps most importantly, this study finds that discriminatory behavior is grounded in stereotypes about the poor work ethic of students with ADHD and Black students. When these stereotypes were corrected either by 1) a mention of the hard-working nature of a specific applicant or 2) racial bias training, the bias against Black students and students with ADHD was reduced.

These findings provide a set of clear-cut action steps that can be taken by colleges and universities around the country. By correcting false stereotypes, such as laziness or poor work ethic, that label students with ADHD and Black students, we can begin to address the disparities that are seen in access to accommodations. This correction is often done through implicit bias training, which, as shown in the study, is a technique already utilized by a majority of colleges and universities. This study puts forward empirical evidence to support the actions that many universities and Disability Service offices are already taking and further encourage others to follow in their footsteps. Increasing the prevalence and frequency of implicit bias training that includes training which explicitly addresses the biases against racial minorities and individuals with disabilities, will be one of the first step institutions should take to address these disparities.

Furthermore, this study also addresses the impact that legislation can have on transforming access to opportunities for marginalized people, such as racial minorities or those with disabilities. I implore disability activists and allies to use these results to advocate for a greater focus on disability policy that explicitly acknowledges racial disparities in access, and demand that legislators prioritize services, resources and accommodations for marginalized populations, particularly in educational institutions. Many organizations are already doing such work including the National Black Disability Coalition and the National Coalition for Latinx with Disabilities. These organizations bring together activists to fight for a broad range of oppressed individuals including refugees, immigrants, Native Americans, as well as groups that have been strongly affected by COVID-19.[37]

[37] See https://www.blackdisability.org, http://www.latinxdisabilitycoalition.com/what-we-do.html to read more about action steps these groups are taking, including lobbying, writing to senators and bringing different communities into their activism to better represent intersections of disability.

While this study goes far in unveiling the variables that are important in the decision making of Disability Service administrators in post-secondary education, it also leads us to realize that 1) these attitudes and discriminatory behaviors far extend beyond this specific arena and 2) the action steps supported by this study should be applied at a broader scale. The question then emerges, what is next?

First, in the beginning chapters of this study, we reflected on what education looks like for students with disabilities, even before they enter college. We came away from this discussion with an understanding that many of the disparities seen in college and beyond, emerge from an uneven starting point. Due to these inequities, some minorities with disabilities are prevented from even accessing higher education. Subsequent research must begin to interrogate whether these same stereotypes play into the discrimination against minorities and specific disability in primary and secondary education, and whether the same normative implications could apply.

Second, as discussed in Chapter 3, this study is heavily grounded in the work of street-level bureaucrats, the administrators who have substantial discretion in their interpretation of policy and their execution of it. The findings reveals that the federal legislation laid out by the Americans with Disabilities Act of 1990 (ADA) and Section 504 of Rehabilitation Act of 1973, is not being executed in the equitable, intended manner. Due to unconscious biases, there is racial and disability specific discrimination in the treatment of students with disabilities. This demonstrates a departure from both the ADA which prohibits discrimination on the basis of disability, and the Title VII of the Civil Rights Act of 1964 which prohibits discrimination on the basis of race. The evidence for this established theory, therefore, suggests that this methodology could be applied to other street-level bureaucrats who work with individuals with disabilities, such as doctors, social workers, and social security bureaucrats. Adjusting the vignette to one

that allows a respondent to envision a realistic interaction with an individual with a disability and make assessments that would be normal in the course of their job, can help us examine underlying stereotypes and biases that may inform inequitable outcomes. Most significantly, it could also show us if implicit bias training, that proved successful in mitigating bias with Disability Service administrators, could do the same with other street-level bureaucrats.

Third, it will be imperative to use this methodology to look at other races, disabilities, and stereotypes that may be responsible for the biases seen. Black individuals are not the only racial minorities that present with lower educational attainment, employment status, diagnosis rates than whites (Anastasiou et al. 2017). Latinx populations in particular show signs of underdiagnosis and identification of disability (Morgan et al. 2017). Moreover, thinking critically about other disabilities, in particular other cognitive disabilities (e.g. autism, dyslexia, down syndromes) that are often misunderstood or labeled with inaccurate stereotypes, will be an important avenue to explore with experimental vignette methodology.

To conclude, the path towards increasing accessibility in an equitable manner is not straightforward. Even when legislation informs structure intended to make education attainable for students with disabilities, unconscious biases often inform discriminatory behavior against specific races or disabilities. While this study looks at a singular population, the reality is that these prejudices are part of a pattern of socialization that internalize biased systems of thinking in each one of us, from a young age. The impact of these prejudiced thought patterns reaches far beyond education. It extends into the job market, health care, and the justice system. Furthemore, our unconscious biases and prejudices also infiltrate our everyday interactions. However, the burden of correcting these discriminatory attitudes and behaviors should not be placed on the backs of Black individuals or individuals with disabilities themselves. Ultimately, this study

demonstrates that each one of else must be charged with actively investigating our own biases, stereotypes, and misconceptions and must seek to find ways to instill the same responsibility in those around us.

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Appendix A: Protocol for Collecting Disability Service Administrator Contacts

The objective is to find email addresses for college or university staff that a prospective disabled student (or his/her parent or counselor) would contact in order for him/her to learn about academic support services that a particular college could deliver. This is distinct from residential support. We will use these e-mails to conduct a survey or experiment about disability supports. Schools do not uniformly provide such contact information on their homepages and the relevant office is sometimes under distinct auspices (e.g., Dean of Students or Academic Affairs). Given that, we are asking that you collect the names and emails of potentially multiple people associated with disability services – that is, often more than one contact, or more than one email corresponding to a program or person. With larger, more well-known schools, it may be easier to find emails right away. However, with smaller schools, you may have to take more of these steps in order to find the relevant email. *Please read through the all instructions and tips at the bottom before starting.*

Part A includes the steps for finding the contacts (emails) of the disability service office for a college. It is on this page where you will find the individuals we want and, in most cases, their e-mails. Part B includes the steps for recording the emails and other variables in an excel spreadsheet you will receive.

Also please note that we are asking that you **copy and paste** names and contact information. Do not re-type things, particular e-mails as we want to avoid and inadvertent typos.

Part A: Finding contacts

Below, we will take you through a list of steps to follow in order to find the contacts for administrators in the disability services offices. Please go through these steps *in the order listed* and proceed to the next step *only* if you are unable to obtain contacts in the previous steps. Once you find a disability service page with the contacts, proceed to Part B, skipping the rest of the steps in Part A.

1) On the spread sheet, the link column **[DISAURL]** is the disabilities service office link for each college. Go to this link and *confirm that this link corresponds to the college you are assigned by comparing it to the general website email **[WEBADDR]** on the excel spreadsheet.*

- Navigate around the webpage for a "Staff" or "Contact" page to search for specific contacts for the department.
- If you are able to find a general program page and see a general email (e.g. accessiblenu@northwestern.edu), you will record it (see Part B Below), but continue to search for emails that correspond to specific administrators (see Part B)
- If you are unable to find a list of staff and emails on the main page, look for a "Meet the staff" or "Contact us" tab. From here you should be able to find contacts from the administrative staff that work in the department.
- If you successfully find the disability services page with contact information in this way, skip to Part B.
- After searching for the staff contacts, you are only able to find a general e-mail address, but no staff-specific names or emails, skip to Part B.

- If the link provided in the excel form either does not exist ("NA" in the **[DISAURL]**) , does not lead to a disability services page OR leads to a page that is not for the correct college, proceed to step 2 below.

Skip to part B unless you were unable to use the link to the disability service page in the excel spreadsheet

2) Search for the disability services web page of the school by googling the name of the college (e.g., Northwestern University) + "disability services." *If you find what appears to be the disability services page for the school, double check that it corresponds to the college that you are looking for and does not correspond to a college of a similar name. Do this by ensuring that the overarching website is the same as general website **[WEBADDR]** provided on the excel spreadsheet.*

- Here we are searching for the office that deals with accommodations for students (usually termed disability services), rather than an office than deals with the legal processes surrounding disability policy (sometimes termed the Office of Equity). Try searching for "[university name] + disability accommodations" if the "disability services" search yields a more formal program that does not relate to student accommodation.
- Here we also do not want residential supports so if you arrive at page that seems focused on residential supports, this is not correct.
- Do note that some smaller colleges may have offices that deal with accommodations (our focus), legal, and residential issues. This is *fine to include them* (e.g. if they deal with all issues, include but if it only legal and/or residential, that does not fit).
- Navigate around the webpage for a "Staff" or "Contact" page.
- If you are able to find a general program page and see a general email (e.g. accessiblenu@northwestern.edu), you will record it (see Part B Below), but continue to search for emails that correspond to specific administrators (see Part B below).
- If you are unable to find a list of staff and emails on the main page, look for a "Meet the staff" or "Contact us" tab. From here you should be able to find contacts from the administrative staff that work in the department.
- If you successfully find the disability services page with contact information in this way, skip to Part B.
- After searching for the staff contacts, you are only able to find a general e-mail address, but no staff-specific names or emails, skip to Part B.

3) *Navigate to the disability services page from the school's main website.* Return to the main website of the college found in Part A. If there is a search bar on the main website to search the college website, search "disability services" or "disability accommodations."

- If there is not a search function, look for a tab such as student services, academic services, programs, information, policies, resources etc. at the top or bottom of the page. Navigate through the website in order to find a page for disability services and accommodations.
- Other helpful words to search on or look for when visiting different tabs include "Information/Disclosure" links or "Student Consumer Information".
- If you find the page, then follow the step mentioned above about identifying a general program e-mail and other individuals (again avoiding legal issues or residential issues only sites)

- If you successfully find the disability services page with contact information in this way, skip to Part C.
- If you are unable to find a disability service web page, proceed to Part B step 3.

4) *Search for the staff directory of the college in order to find the disability services director or a disability services page.*
- Search "(College name) staff directory" into google. Search the directory for "disability" or "accommodations" in the titles of the administrators listed.
- If you find the page or other information, then follow the step mentioned above about identifying a general program e-mail and other individuals (again avoiding legal issues or residential issues only sites).
- If you successfully find the disability services page in this way with contact information, skip to Part C.
- If you are unable to find a disability service web page, proceed to Part B step 4.

5) *Search for a disability services director in the student handbook.*
- Search for the student handbook by googling "(College name) student handbook" or the "student catalog"
- Download the student handbook. Use command F to search for "disability" or "disabilities" and see if there is an email associated with this section. Look to see who a person with a disability is directed to if they need an accommodation.
- If you find the page or other information, then follow the step mentioned above about identifying a general program e-mail and other individuals (again avoiding legal issues or residential issues only sites).

6) If you are unable to find a clear disability services page and/or a contact (an email for a program or person), this is a failed search. Record the url for the main website **[Website _main]** a la Part A and enter "FAILED" into **[Website_disability].** Skip Part C. This includes if you only find contacts for legal or residential issues only.

Once you have found emails, you can proceed to Part C which will instruct you on how to choose which contacts to use and enter them into the excel spreadsheet.

Part B: Choosing and Entering Contacts

Choosing the Contacts
Sometimes there is only one person listed as the disability services director or coordinator. However, other times there will be a larger disability services staff. If there are multiple people / staff listed on the page, follow the below steps to determine the contacts that should be recorded in the order listed. For each variable shown below there will be a corresponding **[Variable]**, **[Variable2]**, **[Variable3]** (e.g. [Email], [Email2], [Email3]). If only one person/address is given, record that one. Overall, you will record no more than four contacts.

1) *Always* record a general program email (that does not correspond to a person), if there is one (e.g., accessiblenu@northwestern.edu).
- Enter this email in to the **[gen_email]** column (explained below)

2) Locate the contact that looks to be the head of the department for disability services (or a related program) and record that. Make sure it is the head of the department though.
3) *Only* if you are unable to locate the head of the department, record the contacts for up to 3 people who you believe to be at/near the head of the department responsible for managing disability services.

Below is a list of titles for positions whose contact are important to collect. This is a guide and is not all inclusive of the disability service positions you will find. The max number of emails for a given school should be 4 (3 contacts and a general program email). These titles are shown in order of priority. If you find administrators have these or similar titles, record the 3 of highest priority given the list below. That is, if the head is not clear, record the top three a la the below list **in that order of priority**. If you find names that are not a general e-mail, not clearly the head, and not with the below titles, record that and fill in the title. We validated that this list is the general hierarchy of who private college counselors, university administrators in disability offices, and high school counselors would recommend contacting, as well as searches done through a variety of university by our own research team.

Director of Student Disability Services
Director of Learning and Accessibility Services
Academic Service and Accommodations Advisor
Special Populations Coordinator
Accessibility Services Coordinator
Accommodation Coordinator
Disability Access Services Coordinator
Learning Specialist

In summary
1) Always record a general email if one exists. If no general email exists, leave the column **[gen_email]** blank.
2) Attempt to identify the head of the disability services department. They will likely have a title corresponding to one of the titles in the list above. If you are able to successfully find a single head of the department, you do not need to identify other contacts (beyond the general e-mail).
3) Only if you are unable to clearly identify a single head of the department, list up to 3 contacts in order of priority using the list shown above.

**If someone lists their e-mail address as the same as the general e-mail address, *only record it as the general e-mail address. That is, NEVER record the same e-mail address twice.*

Entering the contacts

Note ALWAYS copy and paste e-mail addresses to avoid typos.

1) Office Name **[Office]**

- Record the name of the specific office that is responsible for disability services (e.g. Office of Disability Services/Learning Accommodations). This will be listed on the disability services webpage.

- If the school has been shut down, enter "SHUTDOWN" in this column.

2) Program **[Program]**
   - If possible, fill in the larger program that the disability services office is under (e.g. Dean of Students, Academic Affairs, Office of Student Affairs, etc.)
     - Often the name of this larger program is shown in the header of the web page
   - If you are unable to find the overarching program after searching for 5 minutes, leave the "Program" column empty.
     - Often times, if you look under the tabs for overarching programs (Student Affairs, Academic Affairs, Administration) you will be able to see the offices that are under these umbrella programs and can determine which one has the disability service office.

3) General program email **[Gen_email]**
   - If you are able to find a general program email, *copy and paste* it into this column (i.e., see Part C #1).
   - It is unnecessary to fill out of the rest of the columns for the general program e-mail information, *if* there is **no** person that is clearly associated with this email. If there is a person associated with this email, and there is no other available email contact for them, fill in the rest of the columns with their ID information (Name, Title, Head of Office etc.). Leave the **[Email]** column blank.

4) Name **[Name]**
   - Fill in the name of the administrator in the "Name" column.
   - **[Name2], [Name3]** can be used for entering additional contacts.

5) Email **[Email]**
   - *Copy and paste* the email for the contacts you were able to find
   - **[Email2], [Email3]** can be used for entering additional contacts.

6) Title **[Title]**
   - Fill in the title of the administrator (e.g. Director of Learning and Accessibility services) in the "Title" column.
   - If the corresponding email is linked to a program (eg. accessiblenu@northwestern.edu), leave the "Title" column empty.
   - **[Title2], [Title3]** can be used for entering additional contacts.

7) Head of the office **[Head]**
   - Do you believe, this this person the head of the disability service (or related) office? Enter 1 if yes, 0 if no. Sometimes it will be very clear and sometimes it will be fairly clear (in which case assume it is the head). If it is not clear, then it is okay to not identify any heads.
     - You will not necessarily be able to determine the "head" solely from the title. Due to the varying structure of the offices, use your own intuition to determine who is the head.
       - In smaller offices, the head may be a called a "disability coordinator". In larger offices, the head may be called a "Director of disability services".
   - Within the contacts you collect, there should generally only be one "head of office," unless there are two "co-heads" of the disability service office
   - If you are unable to determine who is the head of the office, enter 0 for all contact collected.

- **[Head2], [Head3]** should be used for entering additional contacts.

8) Photo **[Photo]**
- Does this person have a photo on the website? Enter 1 if yes, 0 if no.
    - Spend up to 5 minutes looking for a photo.
        - Google search for the school directory and then search the name of the person.
        - Google the name of the person + the name of the school and see if they have a picture on google.
- **[Photo2], [Photo3]** can be used for entering additional contacts.

9) Gender **[Gender]**
- To your best approximation, what is this person's gender? Enter 1 for female and 0 for male. Enter 99 if you are completely unable to make a guess for their gender (e.g., if there is no photo, they have a gender-neutral name, and the website doesn't mention any pronouns). Thus, if there is no photo, you still likely can figure this out via the name or pronouns – if need be, go beyond the main webpage for the person and search for other information online about him/her.
- **[Gender2], [Gender3]** can be used for entering additional contacts.

10) Confidence in gender assignment **[Gen_confidence]**
- Rate you level of confidence in your assessment of this person's gender on a scale from 1 to 5, where 1 = least confident and 5 = most confident.
- Leave this blank if you are completely unable to make a guess for their gender (e.g., if there is no photo, they have a gender-neutral name, and the website doesn't mention any pronouns)
- **[Gen_confidence2], [Gen_confidence3]** can be used for entering additional contacts.

11) Race **[Race]**
- To your best approximation, what is this person's race? Enter the race of the contacts given the key below. Try VERY HARD to choose one race if you can, but if that proves impossible you enter more than one number, separated by a comma and no spaces (In assessing race, try to use the picture but sometimes names also can provide information if the names suggests a particular ethnic background for example.)
    - 1 - White (non-Hispanic)
    - 2 - Hispanic/Latino
    - 3 - Black, African-American
    - 4 - Asian, Asian-American
    - 5 - Other
        - **[Other]** – enter your guess for their race
    - 99 - Cannot guess race
        - If you absolutely cannot guess the race (e.g., no photo, can't determine from name)
- **[Race2], [Race3]** can be used for entering additional contacts.

12) Confidence in race assignment **[Race_confidence]**
- Rate your level of confidence in your assessment of this person's race on a scale of 1 to 5, where 1 = least confident and 5 = most confident. If you entered multiple races, enter your confidence for each race you entered in order, separated by commas (e.g., white is first in the list, then Hispanic, then Black, then Asian, then Other). If you cannot guess the race (entered 99 into **[Race]**), leave this column blank.

- **[Race_confidence2], [Race_confidence3]** can be used for entering additional contacts.

13) Age **[Age]**

- If there is a photo available, estimate the age range of the administrator and enter the code number that corresponds to the age range.
- Code
  - 1 – 18-29 years
  - 2 – 30-49 years
  - 3 – 50-69 years
  - 4 – >70 years
- Enter 99 if there is no photo available.

Tips:

- If you are able to find the name of a person, but not their email, try searching for the college directory and then looking for their name and email in the directory.
- Always go through the page to the bottom (often the contact emails are found at the bottom).
- At smaller schools it is likely that this contact is a higher up administrator or a dean.
- Words like Americans with Disabilities Act (ADA) and Section 504 mean that you are on the right track!
- Sometimes you will have to search around in different related tabs, try looking for key words (disability, accessibility, services, access, aid).
- If you are directed to fill out a form, click on the link (if you have access) and see if an email for contact is available within the form.
- Try to stay away from health and wellness services and residential contacts (e.g., dorms), although important, they are not the contacts we are trying to reach.
- If you are looking at a school that has multiple locations (e.g. Arizona State University-Downtown Phoenix), there is sometimes only one email for all locations, so it may be easiest to only search with the name of the college (e.g. Arizona State University Disability Service).
  - Be sure to check the different locations for a disability service office before making this assumption.
  - If you find a school that has multiple locations and a disability service contact at each location, record both contacts

Appendix B: University Inclusion Criteria

Determining universe of colleges and universities for disabilities audit study

- As with Druckman and Shafranek (*forthcoming*) and Brown and Hilbig (2018), we begin with the universe of educational institutions provided by the Integrated Postsecondary Education Data System (IPEDS).
    - IPEDS self-description: "The completion of all Integrated Postsecondary Education Data System (IPEDS) surveys is mandatory for institutions that participate in or are applicants for participation in any federal student financial aid program…More than 7,500 institutions complete IPEDS surveys each year. These include research universities, state colleges and universities, private religious and liberal arts colleges, for-profit institutions, community and technical colleges, non-degree-granting institutions such as beauty collges, and others."[38]
- For our study, we limited the universe of institutions to 2-and-4 year, accredited, degree-granting, general education institutions. This scope resembles the universe utilized by the two studies mentioned above. However, there are also notable differences, which we elaborate here:

Number of Institutions in Universe

	Total
Current Study	3063
Druckman and Shafranek	2590
Brown and Hilbig	2934

    - Druckman and Shafranek (*forthcoming*, 6): "All accredited degree-granting colleges and universities in the United States that offered at least one bachelor's degree program per the National Center for Education Statistics (NCES) as of 2016" (n=2590)
    - Brown and Hilbig (2018, 5): "We contact 2,934 public and private non-profit colleges across the United States." (n=2934)
    - Our universe definition, as well as these two, are similar in eliminating non-accredited institutions, for-profit institutions, and non-degree granting institutions from the IPEDS universe. The rationale is that we are interested in institutions that clearly offer degrees, and meet minimum requirements to be recognized by the government as a college or university.
    - Although we are not sure of the exact universe composition for the other two studies, our universe explicitly seeks to isolate general education institutions as well as include 2-year (in addition to 4-year) institutions. In other words, our universe likely differs from the other two due to the explicit exclusion of special-focus institutions, and may differ in the number of 2-year schools included.
    - General education focus: One key difference between our universe and the previous two is further focus on general education institutions. Our universe explicitly excludes tribal colleges and special-focus institutions (e.g., medical,

[38] https://nces.ed.gov/ipeds/about-ipeds

engineering, law) in their samples. We believe a focus on general education is ideal because:
    - It is easier to craft a single email message that will be realistic for the whole universe of institutions in the study
    - Given our topical focus on disability discrimination, there are feasibly interactions between certain disabilities and ability to perform in certain specialty professions that would be difficult to account for (and odd for us to send e-mails to). It also would be odd potentially to send e-mails to tribal schools without a clear affiliation to the tribe.
  - 2-year institutions: Our universe intentionally includes 2-year institutions (e.g., community colleges). Because such institutions often serve as important gateways to 4-year institutions (Rosenbaum et al. 2017) and roughly half of students with disabilities may be enrolled in 2-year institutions (Raue et al. 2011), it would add another dimension to the policy problem if these institutions discriminated against applicants with disabilities.
- To create the list, we utilized the 2013-2014 Basic Carnegie Classification variable in the IPEDS dataset
  - From Carnegie Classification website: "The Carnegie Classification® has been the leading framework for recognizing and describing institutional diversity in U.S. higher education for the past four and a half decades. Starting in 1970, the Carnegie Commission on Higher Education developed a classification of colleges and universities to support its program of research and policy analysis. Derived from empirical data on colleges and universities, the Carnegie Classification was originally published in 1973, and subsequently updated in 1976, 1987, 1994, 2000, 2005, 2010, 2015 and 2018 to reflect changes among colleges and universities. This framework has been widely used in the study of higher education, both as a way to represent and control for institutional differences, and also in the design of research studies to ensure adequate representation of sampled institutions, students, or faculty."[39]
  - Provides a single variable to easily identify schools in the proposed universe
- Procedure to create list
  - We downloaded the IPEDS 2017 dataset: STATA dataset and codebook for Institutional Characteristics – Directory Information.[40]
  - Values and descriptions for the 2013-2014 Basic Carnegie Classification are included in a table sent as an email attachment with this memo. Green rows indicate categories that were included in the universe (per our universe definition), while red rows indicate categories that were excluded.
  - R code provided at end of document
  - Carnegie Classification methodology described in further detail here: http://carnegieclassifications.iu.edu/methodology/basic.php.

References

[39] http://carnegieclassifications.iu.edu/test/

[40] https://nces.ed.gov/ipeds/datacenter/DataFiles.aspx

Brown, Jacob R., and Hanno Hilbig. 2018. “Locked Out of College: When Admissions Bureaucrats Do and Do Not Discriminate.” Working Paper, Harvard University.

Druckman, James N., and Richard M. Shafranek. *forthcoming.* “The Intersection of Racial and Partisan Discrimination: Evidence from a Correspondence Study of Four Year Colleges.” *Journal of Politics.*

Raue, Kimberly, Laurie Lewis, and Jared Coopersmith. 2011. “Students With Disabilities at Degree-Granting Postsecondary Institutions.” District of Columbia: U.S. Department of Education.

Rosenbaum, James E., Caitlin E. Ahearn, and Janet E. Rosenbaum. 2017. *Bridging the Gaps: College Pathways to Career Success.* New York: Russell Sage Foundation.

R Code

```
###Load IPEDS Institutional Characteristics (Directory Information) dataset from
###Excel, create a new variable using the Carnegie 2013-14 Classification, which is
###intended to isolate intended universe. Export this list to a new file to be used as
###master list of schools for audit study.

library(readxl)
CollegeData <- read_excel("hd2017_data_stata 2.xlsm")
CollegeData$New4 <- NA
CollegeData$New4[CollegeData$C15BASIC==15 | CollegeData$C15BASIC==16 |
CollegeData$C15BASIC==17 |CollegeData$C15BASIC==18 | CollegeData$C15BASIC==19 |
CollegeData$C15BASIC==20 |CollegeData$C15BASIC==21 | CollegeData$C15BASIC==22 |
CollegeData$C15BASIC==1 | CollegeData$C15BASIC==2 | CollegeData$C15BASIC==3 |
CollegeData$C15BASIC==4 | CollegeData$C15BASIC==5 | CollegeData$C15BASIC==6 |
CollegeData$C15BASIC==7 | CollegeData$C15BASIC==8 | CollegeData$C15BASIC==9 |
CollegeData$C15BASIC==10 | CollegeData$C15BASIC==11 | CollegeData$C15BASIC==12 |
CollegeData$C15BASIC==13 | CollegeData$C15BASIC==14 | CollegeData$C15BASIC==17 |
CollegeData$C15BASIC==18 | CollegeData$C15BASIC==19 | CollegeData$C15BASIC==23 ] <- 1


CollegeList <- CollegeData [!is.na(CollegeData$New4), ]
write.csv(CollegeList,"Desktop/Research/CollegeList.csv" )
```

Appendix C: Survey Transcript

Start of Block: Default Question Block

Q1 This survey is entirely confidential. You can choose to not answer any question, and/or end your participation at any point. While we will ask for some demographic information, this will be kept completely confidential and will not be used to identify you. The entire survey should take no longer than 15 minutes.

In return for completing the survey, we will provide you with a code for a $5 Amazon gift card. We will do so by asking for your e-mail at the end of the survey and then sending you the gift card within the next ten days. (Your e-mail will be disconnected from your survey responses).

Page Break

Q6 The purpose of this study is to explore how individuals who work with college students that have disabilities make decisions about accommodation requests. You will first read a hypothetical e-mail request from a prospective student who has been accepted to your school (and is deciding whether or not to enroll). While the e-mail is hypothetical, it reflects a common situation for prospective college students. **When reading and thinking about it, try to imagine the specific case described.** You then will be asked a set of standard survey questions about the case, as well as some more general questions.

We realize that the hypothetical email from the student provides limited information for you to make confident judgments but just answer the best you can. There are no wrong or right answers.

End of Block: Default Question Block

Start of Block: Vision/No Hard Work

Q4 ${e://Field/NAME} is graduating from high school this spring and has been admitted to your college. Imagine he wrote you the following e-mail and think about how you would respond.

Hi,
I am writing to inquire about academic accommodations for my disability. I am graduating from high school this spring, have been accepted to your college, and am considering enrolling next fall. I have been diagnosed with a genetic visual impairment called Stargardt disease, causing me to be legally blind with 20/200 vision. I have received and used accommodations from my high school (throughout my high school career).

I have a few questions about how accommodations for my visual impairment would work in college. First, how do I apply for accommodations? Second, can I have regular appointments with someone in your office? Third, if so, how often could I have these appointments? Finally, is there an added cost for the support program?

Thank you,
${e://Field/NAME}

End of Block: Vision/No Hard Work

Start of Block: ADHD/No Hard Work

Q2 ${e://Field/NAME} is graduating from high school this spring and has been admitted to your college. Imagine he wrote you the following e-mail and think about how you would respond.

Hi,

I am writing to inquire about academic accommodations for my disability. I am graduating from high school this spring, have been accepted to your college, and am considering enrolling next fall. I have been diagnosed with ADHD and have received and used accommodations from my high school (throughout my high school career).

I have a few questions about how accommodations for ADHD would work in college. First, how do I apply for accommodations? Second, can I have regular appointments with someone in your office? Third, if so, how often could I have these appointments? Finally, is there an added cost for the support program?

Thank you,
${e://Field/NAME}

End of Block: ADHD/No Hard Work

Start of Block: Vision/Hard Work

Q5 ${e://Field/NAME} is graduating from high school this spring and has been admitted to your college. Imagine he wrote you the following e-mail and think about how you would respond.

Hi,
I am writing to inquire about academic accommodations for my disability. I am graduating from high school this spring, have been accepted to your college, and am considering enrolling next fall. I have been diagnosed with a genetic visual impairment called Stargardt disease, causing me to be legally blind with 20/200 vision. While I work very hard - I was just voted "*most driven*" by my high school class - I have received and used accommodations from my high school (throughout my high school career).

I have a few questions about how accommodations for my visual impairment would work in college. First, how do I apply for accommodations? Second, can I have regular appointments with someone in your office? Third, if so, how often could I have these appointments? Finally, is there an added cost for the support program?

Thank you,
${e://Field/NAME}

End of Block: Vision/Hard Work

Start of Block: ADHD/Hard Work

Q3 ${e://Field/NAME} is graduating from high school this spring and has been admitted to your college. Imagine he wrote you the following e-mail and think about how you would respond.

Hi,
I am writing to inquire about academic accommodations for my disability. I am graduating from high school this spring, have been accepted to your college, and am considering enrolling next fall. I have been diagnosed with ADHD. While I work very hard - I was just voted "*most driven*" by my high school class - I have received and used accommodations from my high school (throughout my high school career).

I have a few questions about how accommodations for ADHD would work in college. First, how do I apply for accommodations? Second, can I have regular appointments with someone in your office? Third, if so, how often could I have these appointments? Finally, is there an added cost for the support program?

Thank you,
${e://Field/NAME}

End of Block: ADHD/Hard Work

Start of Block: Block 5

Q92 *For all of the following questions, answer given the information you have - again, we recognize this is limited information.*

Q7 How unlikely or likely would you be to respond to this e-mail from ${e://Field/NAME}?

- Definitely would not respond (1)
- Probably would not respond (2)
- Not sure (3)
- Probably would respond (4)
- Definitely would respond (5)

Q8 Do you disagree or agree that ${e://Field/NAME} is deserving of accommodations for ${e://Field/Disability}?

- ○ Disagree completely (1)
- ○ Disagree somewhat (2)
- ○ Neither disagree nor agree (3)
- ○ Agree somewhat (4)
- ○ Agree completely (5)

Q9 How likely do you think ${e://Field/NAME} is to *need* at least some accommodations for ${e://Field/Disability}?

- ○ Not at all likely (1)
- ○ A little likely (2)
- ○ Somewhat likely (3)
- ○ Very likely (4)
- ○ Extremely likely (5)

Q10 How likely do you think ${e://Field/NAME} is to ***receive*** at least some accommodations for ${e://Field/Disability}?

- ○ Not at all likely (1)
- ○ A little likely (2)
- ○ Somewhat likely (3)
- ○ Very likely (4)
- ○ Extremely likely (5)

Page Break

Q11 To obtain (e.g., apply for) accommodations for ${e://Field/Disability},
would ${e://Field/NAME} be required to submit documentation/assessment of his diagnosis?

- ○ No (1)
- ○ Yes (2)
- ○ Not Sure/Maybe (3)

End of Block: Block 5

Start of Block: ADHD Documentation

Display This Question:

If To obtain (e.g., apply for) accommodations for ${e://Field/Disability}, would ${e://Field/NAME} b... = Yes

Or To obtain (e.g., apply for) accommodations for ${e://Field/Disability}, would ${e://Field/NAME} b... = Not Sure/Maybe

Q12 What would be acceptable for documentation of ${e://Field/NAME}'s ADHD diagnosis?
Check all that apply.

- ☐ Student's self-report (1)
- ☐ Neuropsychological evaluation (2)
- ☐ Letter from a physician (3)
- ☐ Letter from a mental health professional (4)
- ☐ Documentation of prior accommodations (5)
- ☐ Documentation of medications (6)

Display This Question:

If To obtain (e.g., apply for) accommodations for ${e://Field/Disability}, would ${e://Field/NAME} b... = Yes

And To obtain (e.g., apply for) accommodations for ${e://Field/Disability}, would ${e://Field/NAME} b... = Not Sure/Maybe

Q14 What would be acceptable in terms of how long ago the documentation of ${e://Field/Disability} was obtained?

- ○ No more than 1 year ago (1)
- ○ No more than 2 years ago (2)
- ○ No more than 3 years ago (3)
- ○ No more than 4 years ago (4)
- ○ No more than 5 years ago (5)
- ○ 5 or more years old (6)

Q20 Would there be additional applications and/or processes for ${e://Field/NAME} to obtain accommodations for ADHD (other than documentation)? Check all that apply.

- ☐ No (1)
- ☐ A written application (2)
- ☐ An interview via phone or e-mail (3)
- ☐ An in-person interview (4)
- ☐ An appointment with university medical services (5)
- ☐ Other (6) _____

End of Block: ADHD Documentation

Start of Block: Block 8

Q16 If ${e://Field/NAME} received accommodations for ${e://Field/Disability}, how unlikely or likely would it be that he would be able to have regular appointments with a disability counselor when he first enrolled?

- Not at all likely (1)
- A little likely (2)
- Somewhat likely (3)
- Very likely (4)
- Extremely likely (5)

Page Break

Display This Question:

If If ${e://Field/NAME} received accommodations for ${e://Field/Disability}, how unlikely or likely... != Not at all likely

Q17 How often would the appointments be?

- ○ Weekly (1)
- ○ Bi-weekly (2)
- ○ Monthly (3)
- ○ Once a term (4)
- ○ By Appointment (5)

Page Break

Q18 If ${e://Field/NAME} received accommodations for ${e://Field/Disability}, would there be an added cost for him to receive disability supports?

- ○ No (1)
- ○ Yes (2)
- ○ Not Sure/Maybe (3)

End of Block: Block 8

Start of Block: ADHD Accommodations

Q22 If ${e://Field/NAME} were to receive academic accommodations for ADHD, what accommodations do you think he would receive? Check all that apply.

- ☐ Priority registration (1)
- ☐ Additional time for assignments (2)
- ☐ Additional time for exams (3)
- ☐ Scheduled meeting with specialized counselors (4)
- ☐ Alternative testing location (5)
- ☐ Preferred seat location (6)
- ☐ Special allowances for absences (7)
- ☐ Appointed note takers (reader/scribe) (8)
- ☐ Assisted technology (of any type including adaptive software, etc.) (9)
- ☐ Alternative formats for exams (10)
- ☐ Segment tests to be taken over several days (11)
- ☐ Segment assignments over several days (12)
- ☐ Other (13)

Display This Question:

If If ${e://Field/NAME} were to receive academic accommodations for ADHD, what accommodations do you... = Other

Q26 What other academic accommodations would ${e://Field/NAME} receive for his ADHD?

_____

End of Block: ADHD Accommodations

Start of Block: Vision Documentation

Display This Question:

If To obtain (e.g., apply for) accommodations for ${e://Field/Disability}, would ${e://Field/NAME} b... = Yes

Or To obtain (e.g., apply for) accommodations for ${e://Field/Disability}, would ${e://Field/NAME} b... = Not Sure/Maybe

Q13 What would be acceptable for documentation of ${e://Field/NAME}'s diagnosis of visual impairment? Check all that apply.

- ☐ Student's self-report (1)
- ☐ Vision evaluation (2)
- ☐ Letter from a physician (3)
- ☐ Letter from a vision specialist (non-physician) (4)
- ☐ Documentation of prior accommodations (5)
- ☐ Documentation of medications (6)

Display This Question:

If To obtain (e.g., apply for) accommodations for ${e://Field/Disability}, would ${e://Field/NAME} b... = Yes

Or To obtain (e.g., apply for) accommodations for ${e://Field/Disability}, would ${e://Field/NAME} b... = Not Sure/Maybe

Q15 What would be acceptable in terms of how long ago the documentation of ${e://Field/Disability} was obtained?

- ○ No more than 1 year old (1)
- ○ No more than 2 years old (2)
- ○ No more than 3 years old (3)
- ○ No more than 4 years old (4)
- ○ No more than 5 years old (5)
- ○ 5 or more years old (6)

Q19 Would there be additional applications and/or processes for ${e://Field/NAME} to obtain accommodations for his visual impairment (other than documentation)? Check all that apply.

- ☐ No (1)
- ☐ A written application (2)
- ☐ An interview via phone or email (3)
- ☐ An in-person interview (4)
- ☐ An appointment with university medical services (5)
- ☐ Other (6) _____

End of Block: Vision Documentation

Start of Block: Vision Accommodations

Q24 If ${e://Field/NAME} were to receive academic accommodations for his visual impairment, what accommodations do you think he would receive? Check all that apply.

- [ ] Priority registration (1)
- [ ] Additional time for assignments (2)
- [ ] Additional time for exams (3)
- [ ] Scheduled meeting with specialized counselors (4)
- [ ] Alternative testing location (5)
- [ ] Preferred seat location (6)
- [ ] Special allowances for absences (7)
- [ ] Appointed note takers (reader/scribe) (8)
- [ ] Assisted technology (of any type including adaptive software, etc.) (9)
- [ ] Alternative texts for readings (10)
- [ ] Alternative texts for lectures (11)
- [ ] Alternative texts for exams (12)
- [ ] Other alternative formats for exams (13)
- [ ] Segment tests to be taken over several days (14)
- [ ] Segment assignments over several days (15)
- [ ] Other (16)

Display This Question:

If If ${e://Field/NAME} were to receive academic accommodations for his visual impairment, what acco... = Other

Q25 What other academic accommodations would ${e://Field/NAME} receive for his visual impairment?

_____

End of Block: Vision Accommodations

Start of Block: Block 11

Q46 Do you think ${e://Field/NAME} has worked hard?

- Definitely not worked hard (1)
- Probably not worked hard (2)
- Not sure (3)
- Probably worked hard (4)
- Definitely worked hard (5)

Q27 If ${e://Field/NAME} were to receive accommodations for ${e://Field/Disability}, how likely do you think he would be to use them all?

- Not at all likely (1)
- A little likely (2)
- Somewhat likely (3)
- Very likely (4)
- Extremely likely (5)

Q28 If you had to guess, how successful do you think ${e://Field/NAME} will be in college if he *does* receive accommodations for ${e://Field/Disability}?

- ○ Not at all successful (1)
- ○ A little successful (2)
- ○ Somewhat successful (3)
- ○ Very successful (4)
- ○ Extremely successful (5)

Q29 If you had to guess, how successful do you think ${e://Field/NAME} will be in college if he *does n*ot receive accommodations for ${e://Field/Disability}?

- ○ Not at all successful (1)
- ○ A little successful (2)
- ○ Somewhat successful (3)
- ○ Very successful (4)
- ○ Extremely successful (5)

Page Break

Q98 Do you think you would be very uncomfortable or very comfortable interacting with ${e://Field/NAME}?

- Very uncomfortable (1)
- Somewhat uncomfortable (2)
- Neither uncomfortable nor comfortable (3)
- Somewhat comfortable (4)
- Very comfortable (5)

Page Break

Q93 How confident is ${e://Field/NAME}?

- Not at all confident (1)
- Slightly confident (2)
- Somewhat confident (3)
- Very confident (4)
- Extremely confident (5)

Q94 How competent is ${e://Field/NAME}?

- Not at all competent (1)
- Slightly competent (2)
- Somewhat competent (3)
- Very competent (4)
- Extremely competent (5)

Q95 How sincere is ${e://Field/NAME}?

- Not at all sincere (1)
- Slightly sincere (2)
- Somewhat sincere (3)
- Very sincere (4)
- Extremely sincere (5)

Q96 How warm is ${e://Field/NAME}?

- ○ Not at all warm (1)
- ○ Slightly warm (2)
- ○ Somewhat warm (3)
- ○ Very warm (4)
- ○ Extremely warm (5)

Page Break

Q43 In the last five years, have you taken a course focused on minimizing racial bias in your job or more generally?

- ○ No (1)
- ○ Yes (2)
- ○ Maybe (3)
- ○ Not sure (4)

Q44 When it comes to ADHD, have you heard of any evidence that some racial or ethnic groups are underdiagnosed? If so, which groups? Check all that apply. If you are unaware of clear evidence, check "Don't know."

- ☐ White (1)
- ☐ African American (2)
- ☐ Asian American (3)
- ☐ Hispanic (4)
- ☐ Native American (5)
- ☐ Other (6)
- ☐ Don't know (7)

Q45 How confident are you of your last response?

- ○ Not confident at all (1)
- ○ A little confident (2)
- ○ Moderately confident (3)
- ○ Mostly confident (4)
- ○ Extremely confident (5)

Page Break

Q47 If you had to guess, what racial or ethnic group do you think ${e://Field/NAME} identifies himself as being from? (If you would prefer to not make such a guess, feel free to check that answer or skip the question.)

- White (1)
- African American (2)
- Asian American (3)
- Hispanic (4)
- Native American (5)
- Other (6)
- Prefer not to guess (7)

Q48 If you were asked to use one of five names to describe what you think ${e://Field/NAME}'s social class is, which would you say? (If you would prefer to not make such a guess, feel free to check that answer or skip the question.)

- Lower class (1)
- Working class (2)
- Middle class (3)
- Upper middle class (4)
- Upper class (5)
- Prefer not to guess (6)

Page Break

Q51 Which condition was mentioned in the e-mail?

- Visual Impairment (Stargardt disease) (1)
- ADHD (2)
- Anxiety (3)
- Don't recall (4)

End of Block: Block 11

Start of Block: Name Dalton

Q53 What was the full name of the person who wrote the e-mail?

- Dalton Wood (1)
- David Washington (2)
- Donald Williams (3)
- Don't recall (4)

End of Block: Name Dalton

Start of Block: Name Jabari

Q52 What was the full name of the person who wrote the e-mail?

- Jabari Washington (1)
- John Walton (2)
- Josh Wood (3)
- Don't recall (4)

End of Block: Name Jabari

Start of Block: Block 14

Q54 ***The next set of questions are about yourself. As you know, you can choose not to answer any particular question. (Also, recall that no one beyond us will ever have access to any identifying demographic information.)***

Q99 Do you interact (in person or over email) with students with disabilities in order to determine whether they should receive accommodations?

- ○ No (1)
- ○ Yes (2)

Q55 At what school do you work (*optional*)?

_____

Q56 Is your school public or private?

- ○ Public (1)
- ○ Private (2)

Q100 Of the following, which is the highest degree offered by your school?

- ○ Associate (1)
- ○ Bachelor's (2)
- ○ Master's and/or PhD (3)

Q101 Is your school a specialized training (e.g., trade) school?

- ○ No (1)
- ○ Yes (2)

Q102 Is your school a for-profit?

- ○ No (1)
- ○ Yes (2)

Q57 What is roughly the undergraduate enrollment at your school?

_____

Page Break

Q58 What is your age?

- ○ Under 18 (1)
- ○ 18-24 (2)
- ○ 25-34 (3)
- ○ 35-50 (4)
- ○ 51-65 (5)
- ○ Over 65 (6)

Q97 In which state do you currently reside?

▼ Alabama (1) ... I do not reside in the United States (53)

Q61 What is your estimate of your family's annual household income (before taxes)?

- ○ (1)
- ○ $30,000-$69,999 (2)
- ○ $70,000-$99,999 (3)
- ○ $100,000-$200,000 (4)
- ○ >$200,000 (5)

Q62 Do you identify as male, female, or another gender?

- ○ Male (1)
- ○ Female (2)
- ○ Other (3)

Q63 Which of the following do you consider to be your primary racial or ethnic group (*you may check more than one*)?

- ☐ White (1)
- ☐ African American (2)
- ☐ Asian American (3)
- ☐ Hispanic (4)
- ☐ Native American (5)
- ☐ Other (6)

Q64 Are you the director/head of Student Disability Services (or its equivalent) at your school?

- ○ No (1)
- ○ Yes (2)

Q89 At your school, is Student Disability Services (or its equivalent) its own department, or is it housed in another department?

- ○ Own Department (1)
- ○ Another Department (2)

Page Break

Display This Question:

If At your school, is Student Disability Services (or its equivalent) its own department, or is it h... = Another Department

Q90 What is the name of the department that Student Disability Services (or its equivalent) is housed under (ex. Dean of Students, Student Learning Center etc.)?

_____

Page Break

Q67 What is the title of your current position?

_____

Q68 For how long have you worked in the field (e.g. working with students with disabilities)? (This includes your time in your current position; in years and months)?

Years

_____

Q69 Months

_____

Q70 Which point on this scale best describes your political views?

- ○ Very liberal (1)
- ○ Moderately liberal (2)
- ○ Somewhat liberal (3)
- ○ Moderate (4)
- ○ Somewhat conservative (5)
- ○ Moderately conservative (6)
- ○ Very conservative (7)

Q71 What is your highest level of education?

- ○ Less than high school (1)
- ○ High school (2)
- ○ Some college (3)
- ○ 4 year college degree (4)
- ○ Master's degree (5)
- ○ PhD (6)
- ○ MD (7)
- ○ PhD and MD (8)

Q72 In a typical week during the academic year, how many hours a week do you spend working directly with students?

_____

Page Break

Q73 We are interested in the frequency with which students who report having different disabilities work with your staff. Of the total time you spend working with students via your office, what percentage involves working with individuals who report having each of the below types of disabilities. This likely will not sum to 100% since we do not list an exhaustive set of disabilities. We realize these percentages are not in your control as they reflect the student body, and that they will be inexact so make your best guess.

ADHD : _____ (1)

Learning Disabilities Other than ADHD (Dyslexia, Auditory Processing Disorder etc.) : _____ (2)

Psychological Disabilities (Depression, Bipolar Disorder, Generalized Anxiety, Panic Disorder, Obsessive Compulsive Disorder, Schizophrenia, Eating Disorder) : _____ (3)

Visual Impairment or Blindness : _____ (4)

Hearing Loss : _____ (5)

Mobility Related Disabilities : _____ (6)

Total : _____

Page Break

Q74 We are interested in the frequency with which students of different demographic backgrounds work with your staff. Of the total time you spend working with students, what percentage involves working with individuals from each of the below demographic groups? This likely will not sum to 100% since we do not list an exhaustive set of demographic descriptions. We realize these percentages are not in your control as they reflect the student body, and that they will be inexact so make your best guess.

White men : _____ (1)
Black men : _____ (2)
White women : _____ (3)
Black women : _____ (4)
Total : _____

Page Break

Q77 Now we will present you with a few more statements. We realize some of these statements - although very common on surveys - may make you uncomfortable and we are not endorsing any particular view. We are asking you to gauge different opinions. If you prefer to not answer any question, leave it blank.

After each statement, we would like you to tell us how strongly you agree or disagree. The first statement is:

"Generations of slavery and discrimination have created conditions that make it difficult for blacks to work their way out of the lower class."

Do you...

- ○ Disagree strongly (1)
- ○ Disagree somewhat (2)
- ○ Neither disagree nor agree (3)
- ○ Agree somewhat (4)
- ○ Agree strongly (5)

Q79 “Over the past few years, Blacks have gotten less than they deserve.” Do you…

- ○ Disagree strongly (1)
- ○ Disagree somewhat (2)
- ○ Neither disagree nor agree (3)
- ○ Agree somewhat (4)
- ○ Agree strongly (5)

Q80 “It’s really a matter of some people not trying hard enough; if blacks would only try harder, they could be just as well off as whites.”
Do you…

- ○ Disagree strongly (1)
- ○ Disagree somewhat (2)
- ○ Neither disagree nor agree (3)
- ○ Agree somewhat (4)
- ○ Agree strongly (5)

Page Break

Q81 How comfortable are you having close personal friends who have ADHD?

- Not at all comfortable (1)
- Not too comfortable (2)
- Somewhat comfortable (3)
- Extremely comfortable (4)

Q83 Suppose a son or daughter of yours was getting married. How would you feel if he or she married someone who has ADHD?

- Not at all upset (1)
- Not too upset (2)
- Somewhat upset (3)
- Extremely upset (4)

Q84 How comfortable are you having close personal friends who have a severe visual impairment?

- Not at all comfortable (1)
- Not too comfortable (2)
- Somewhat comfortable (3)
- Extremely comfortable (4)

Q86 Suppose a son or daughter of yours was getting married. How would you feel if he or she married someone with a severe visual impairment?

- ○ Not at all upset (1)
- ○ Not too upset (2)
- ○ Somewhat upset (3)
- ○ Extremely upset (4)

End of Block: Block 14

Start of Block: Block 15

Q91 Thank you for completing the survey. As we mentioned, we would like to send you a $5 Amazon gift card. Please enter your e-mail below and we will send you the card within 10 days. Your e-mail is completely disconnected from your survey responses. The Amazon gift card will come from a @u.northwestern.edu email address.

_____

End of Block: Block 15

Appendix D: Recruitment Email

I. Initial Recruitment Email

SUBJECT LINE: Disability Accommodations Survey

Dear **XXXX [USE MAIL MERGE TO PUT IN NAME]**

I write, as a professor at the Institute for Policy Research at Northwestern University, to request your assistance. As you know, there are many challenges in making accommodation decisions when it comes to students with disabilities. Surprisingly, very few efforts have been put forth to study the opinions and decisions of those who work in Disability Services at colleges. **I am working with two students to fill this gap with a survey. We are asking you to help by completing the survey; not only would your participation help our work, but we also would compensate you for your time with a $5 Amazon gift card.**

The survey can be found at a secure and encrypted link: XXXX.

The entire survey takes between 10 and 15 minutes to complete for most people. We are asking you to participate in the research study because you work with college students who have disabilities and are at least 18 years old; if you are not 18 or older, please do not proceed.

The specific purpose of the research is to understand how administrators think and make decisions about accommodations for students with disabilities. The research will specifically help scholars and practitioners understand how decisions in this domain are made.

If you choose to participate:

- You will read a hypothetical vignette about a student with a disability.
- You will answer questions about the student, expectations about accommodations, and a few other issues.
- You will answer some questions about yourself and your attitudes, more generally.
- The entire survey will take no longer than 15 minutes and is on a secure and encrypted site.
- It is completely confidential.
- You can take the survey on any computer and complete it whenever you'd like within the next ten days (then the survey link will no longer be accessible).
- Upon completion of the survey, your participation in the study is complete.
- You can choose to not answer any question or stop your participation at any point. Participation is entirely voluntary. Your decision to not participate or to stop participation will not be held against you.

- If you have questions, you can contact us at the e-mail address from which this e-mail was sent.
- We will send you a $5 Amazon gift card within 10 days after you complete the survey.

We cannot promise any benefits to you or others from your taking part in this research (although, as mentioned, we will compensate you for your time with a $5 Amazon gift card).

Other possible benefits include learning and reflecting on how you make accommodation decisions. There are no notable risks for doing the survey as there are no questions which ostensibly cause discomfort, and again you can choose to not answer any question (or not participate or stop at any time). Only I, as principal investigator, will have direct access to the data.

If you have questions, concerns, or complaints, or think the research has hurt you, you can talk to the research team at druckman@northwestern.edu or at 847-491-7450.

This research has been reviewed and approved by an Institutional Review Board ("IRB") as study
STU00211465. You may talk to them at (312) 503-9338 or irb@northwestern.edu if:

- Your questions, concerns, or complaints are not being answered by the research team.
- You cannot reach the research team.
- You want to talk to someone besides the research team.
- You have questions about your rights as a research participant.
- You want to get information or provide input about this research.

CONSENT: By clicking on to continue this survey, you are consenting to participate.

Sincerely,
James N. Druckman (Professor, Institute for Policy Research, Northwestern University)
Jeremy Levy (graduate student)
Natalie Sands (undergraduate student)

II. Follow-up Email

SUBJECT LINE: Reminder: Disability Accommodations Survey

Dear **XXX**,

I am sorry to bother you again. Last week, I sent you a survey concerning accommodations for students with disabilities. If you have already completed the survey (or you prefer not to participate), please ignore this reminder.

If you have not completed the survey and would like to do so, I am writing to remind you. As you might recall, it is a confidential survey about accommodations for students with disabilities. It can be found at: **XXX**.

It takes less than 15 minutes. For your participation, you will be compensated with a $5 Amazon gift card.

So far, nearly 400 people who work in disability services have responded. This provides us (i.e., me and the students involved) with an excellent sample of opinions. Yet, it is nonetheless important that you contribute your opinion, so as to make sure we hear from as many stakeholders, and as many perspectives, as possible.

Below I have copied the original e-mail that I sent to you. I may **send one more reminder and that's it.**

Thank you for your time and participation,

Professor James Druckman

Here is the original note – and thank you again:

I write, as a professor at the Institute for Policy Research at Northwestern University, to request your assistance. As you know, there are many challenges in making accommodation decisions when it comes to students with disabilities. Surprisingly, very few efforts have been put forth to study the opinions and decisions of those who work in Disability Services at colleges. **I am working with two students to fill this gap with a survey. We are asking you to help by completing the survey; not only would your participation help our work, but we also would compensate you for your time with a $5 Amazon gift card.**

The survey can be found at a secure and encrypted link: XXXX.

The entire survey takes less than 15 minutes to complete for most people. We are asking you to participate in the research study because you work with college students who have disabilities and are at least 18 years old; if you are not 18 or older, please do not proceed.

The specific purpose of the research is to understand how administrators think and make decisions about accommodations for students with disabilities. The research will specifically help scholars and practitioners understand how decisions in this domain are made.

If you choose to participate:

- You will read a hypothetical vignette about a student with a disability.
- You will answer questions about the student, expectations about accommodations, and a few other issues.
- You will answer some questions about yourself and your attitudes, more generally.
- The entire survey will take no longer than 15 minutes and is on a secure and encrypted site.
- It is completely confidential.
- You can take the survey on any computer and complete it whenever you'd like within the next ten days (then the survey link will no longer be accessible).
- Upon completion of the survey, your participation in the study is complete.
- You can choose to not answer any question or stop your participation at any point. Participation is entirely voluntary. Your decision to not participate or to stop participation will not be held against you.
- If you have questions, you can contact us at the e-mail address from which this e-mail was sent.
- We will send you a $5 Amazon gift card within 10 days after you complete the survey.

We cannot promise any benefits to you or others from your taking part in this research (although, as mentioned, we will compensate you for your time with a $5 Amazon gift card).

Other possible benefits include learning and reflecting on how you make accommodation decisions. There are no notable risks for doing the survey as there are no questions which ostensibly cause discomfort, and again you can choose to not answer any question (or not participate or stop at any time). Only I, as principal investigator, will have direct access to the data.

If you have questions, concerns, or complaints, or think the research has hurt you, you can talk to the research team at druckman@northwestern.edu or at 847-491-7450.

This research has been reviewed and approved by an Institutional Review Board ("IRB") as study
STU00211465. You may talk to them at (312) 503-9338 or irb@northwestern.edu if:

- Your questions, concerns, or complaints are not being answered by the research team.
- You cannot reach the research team.
- You want to talk to someone besides the research team.
- You have questions about your rights as a research participant.
- You want to get information or provide input about this research.

CONSENT: By clicking on to continue this survey, you are consenting to participate.

As mentioned, the survey can be found at a secure and encrypted link: XXXX.

Sincerely,
James N. Druckman (Professor, Institute for Policy Research, Northwestern University)
Jeremy Levy (graduate student)
Natalie Sands (undergraduate student)

Appendix E: Survey Vignettes

All participants first see the statements shown below. They are then randomly assigned to one of the eight following vignettes.

The purpose of this study is to explore how individuals who work with college students that have disabilities make decisions about accommodation requests. You will first read a hypothetical e-mail request from a prospective student who has been accepted to your school (and is deciding whether or not to enroll). While the e-mail is hypothetical, it reflects a common situation for prospective college students. **When reading and thinking about it, try to imagine the specific case described.** You then will be asked a set of standard survey questions about the case, as well as some more general questions.

Condition 1 – white/Visual impairment/No hard work

Dalton Wood is graduating from high school this spring and has been admitted to your college. Imagine he wrote you the following e-mail and think about how you would respond.

Hi,
I am writing to inquire about academic accommodations for my disability. I am graduating from high school this spring, have been accepted to your college, and am considering enrolling next fall. I have been diagnosed with a genetic visual impairment called Stargardt disease, causing me to be legally blind with 20/200 vision. I have received and used accommodations from my high school (throughout my high school career).

I have a few questions about how accommodations for my visual impairment would work in college. First, how do I apply for accommodations? Second, can I have regular appointments with someone in your office? Third, if so, how often could I have these appointments? Finally, is there an added cost for the support program?

Thank you,
Dalton Wood

Condition 2 – white/ADHD/No hard work

Dalton Wood is graduating from high school this spring and has been admitted to your college. Imagine he wrote you the following e-mail and think about how you would respond.

Hi,
I am writing to inquire about academic accommodations for my disability. I am graduating from high school this spring, have been accepted to your college, and am considering enrolling next fall. I have been diagnosed with ADHD and have received and used accommodations from my high school (throughout my high school career).

I have a few questions about how accommodations for ADHD would work in college. First, how do I apply for accommodations? Second, can I have regular appointments with someone in your office? Third, if so, how often could I have these appointments? Finally, is there an added cost

for the support program?

Thank you,
Dalton Wood

Condition 3 – Black/Visual impairment/No hard work

Dalton Wood is graduating from high school this spring and has been admitted to your college. Imagine he wrote you the following e-mail and think about how you would respond.

Hi,
I am writing to inquire about academic accommodations for my disability. I am graduating from high school this spring, have been accepted to your college, and am considering enrolling next fall. I have been diagnosed with a genetic visual impairment called Stargardt disease, causing me to be legally blind with 20/200 vision. I have received and used accommodations from my high school (throughout my high school career).

I have a few questions about how accommodations for my visual impairment would work in college. First, how do I apply for accommodations? Second, can I have regular appointments with someone in your office? Third, if so, how often could I have these appointments? Finally, is there an added cost for the support program?

Thank you,
Dalton Wood

Condition 4 – Black/ADHD/No hard work

Jabari Washington is graduating from high school this spring and has been admitted to your college. Imagine he wrote you the following e-mail and think about how you would respond.

Hi,
I am writing to inquire about academic accommodations for my disability. I am graduating from high school this spring, have been accepted to your college, and am considering enrolling next fall. I have been diagnosed with ADHD and have received and used accommodations from my high school (throughout my high school career).

I have a few questions about how accommodations for ADHD would work in college. First, how do I apply for accommodations? Second, can I have regular appointments with someone in your office? Third, if so, how often could I have these appointments? Finally, is there an added cost for the support program?

Thank you,
Jabari Washington

Condition 5 – white/Visual impairment/Hard work

Dalton Wood is graduating from high school this spring and has been admitted to your college. Imagine he wrote you the following e-mail and think about how you would respond.

Hi,
I am writing to inquire about academic accommodations for my disability. I am graduating from high school this spring, have been accepted to your college, and am considering enrolling next fall. I have been diagnosed with a genetic visual impairment called Stargardt disease, causing me to be legally blind with 20/200 vision. While I work very hard - I was just voted "*most driven*" by my high school class - I have received and used accommodations from my high school (throughout my high school career).

I have a few questions about how accommodations for my visual impairment would work in college. First, how do I apply for accommodations? Second, can I have regular appointments with someone in your office? Third, if so, how often could I have these appointments? Finally, is there an added cost for the support program?

Thank you,
Dalton Wood

Condition 6 – white/ADHD/Hard work

Dalton Wood is graduating from high school this spring and has been admitted to your college. Imagine he wrote you the following e-mail and think about how you would respond.

Hi,
I am writing to inquire about academic accommodations for my disability. I am graduating from high school this spring, have been accepted to your college, and am considering enrolling next fall. I have been diagnosed with ADHD. While I work very hard - I was just voted "*most driven*" by my high school class - I have received and used accommodations from my high school (throughout my high school career).

I have a few questions about how accommodations for ADHD would work in college. First, how do I apply for accommodations? Second, can I have regular appointments with someone in your office? Third, if so, how often could I have these appointments? Finally, is there an added cost for the support program?

Thank you,
Dalton Wood

Condition 7 – Black/Visual impairment/Hard work

Jabari Washington is graduating from high school this spring and has been admitted to your college. Imagine he wrote you the following e-mail and think about how you would respond.

Hi,
I am writing to inquire about academic accommodations for my disability. I am graduating from high school this spring, have been accepted to your college, and am considering enrolling next

fall. I have been diagnosed with a genetic visual impairment called Stargardt disease, causing me to be legally blind with 20/200 vision. While I work very hard - I was just voted "*most driven*" by my high school class - I have received and used accommodations from my high school (throughout my high school career).

I have a few questions about how accommodations for my visual impairment would work in college. First, how do I apply for accommodations? Second, can I have regular appointments with someone in your office? Third, if so, how often could I have these appointments? Finally, is there an added cost for the support program?

Thank you,
Jabari Washington

Condition 8 – Black/ADHD/Hard work

Jabari Washington is graduating from high school this spring and has been admitted to your college. Imagine he wrote you the following e-mail and think about how you would respond.

Hi,
I am writing to inquire about academic accommodations for my disability. I am graduating from high school this spring, have been accepted to your college, and am considering enrolling next fall. I have been diagnosed with ADHD. While I work very hard - I was just voted "*most driven*" by my high school class - I have received and used accommodations from my high school (throughout my high school career).

I have a few questions about how accommodations for ADHD would work in college. First, how do I apply for accommodations? Second, can I have regular appointments with someone in your office? Third, if so, how often could I have these appointments? Finally, is there an added cost for the support program?

Thank you,
Jabari Washington

Appendix F: Institutional and Individual Control Regressions

Attitudinal Outcome Measurements

VARIABLES	(1) Deserving	(2) Compliance	(3) Traits
Black Condition	-0.320*	-0.531***	-0.311***
	(0.180)	(0.154)	(0.116)
ADHD Condition	-0.721***	-0.405***	-0.180**
	(0.115)	(0.098)	(0.074)
Work Condition	0.214	0.167	0.249***
	(0.138)	(0.118)	(0.089)
Hardwork*ADHD	0.299*	0.339**	0.181*
	(0.162)	(0.138)	(0.104)
Hardwork*Black	0.362*	0.489***	0.257*
	(0.219)	(0.187)	(0.141)
RaceBiasTraining	-0.048	-0.150	0.057
	(0.124)	(0.106)	(0.080)
Race BiasTraining* Black	0.361*	0.615***	0.468***
	(0.209)	(0.178)	(0.135)
RaceBiasTraining*Black* Hardwork	-0.389*	-0.577***	-0.250*
	(0.235)	(0.200)	(0.152)
Private school	-0.103	0.001	-0.083
	(0.109)	(0.092)	(0.069)
School that offers Bachelors	0.163	-0.052	0.041
	(0.150)	(0.128)	(0.096)
Schools that offers advanced degree (pHd, masters)	-0.079	-0.057	-0.067
	(0.119)	(0.101)	(0.076)
Specialized school (e.g. trade school)	-0.025	0.038	-0.043
	(0.142)	(0.121)	(0.091)
For profit school	-0.077	-0.016	-0.052
	(0.128)	(0.110)	(0.084)
School enrollment	-0.000*	0.000	0.000
	(0.000)	(0.000)	(0.000)
Respondent responsible for determining accommodations	0.183	-0.054	-0.090
	(0.168)	(0.143)	(0.108)
Respondent is director of Disability Services	-0.093	0.064	-0.026
	(0.102)	(0.087)	(0.066)

Time respondents has spent working in Disability services	0.000	0.000	0.001**
	(0.000)	(0.000)	(0.000)
Time respondent spends working with students each week	-0.007	0.004	0.003
	(0.004)	(0.003)	(0.003)
Age	-0.035	0.080	-0.083**
	(0.061)	(0.052)	(0.039)
Income	-0.029	0.018	0.025
	(0.046)	(0.039)	(0.030)
Female	0.161	-0.027	0.044
	(0.102)	(0.086)	(0.065)
Hispanic	-0.207	0.015	-0.190
	(0.203)	(0.172)	(0.130)
Ideology	-0.057**	-0.031	-0.018
	(0.026)	(0.022)	(0.017)
Education	0.030	-0.035	-0.037
	(0.070)	(0.058)	(0.043)
Constant	4.724***	3.562***	4.109***
	(0.513)	(0.430)	(0.323)
Observations	472	468	465
R-squared	0.191	0.160	0.204

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Application Process Outcome Measurements

VARIABLES	(1) Self-Report	(2) Receive
Black Condition	-1.723***	-0.233
	(0.536)	(0.152)
ADHD Condition	-1.588***	-0.763***
	(0.324)	(0.097)
Work Condition	0.048	0.020
	(0.343)	(0.117)
Hardwork*ADHD	0.934**	0.267*
	(0.429)	(0.137)
Hardwork*Black	0.914	0.217
	(0.620)	(0.185)
RaceBiasTraining	-0.263	0.034
	(0.307)	(0.105)
Race BiasTraining* Black	1.347**	0.235
	(0.601)	(0.177)

RaceBiasTraining*Black* Hardwork	0.342	-0.322
	(0.665)	(0.200)
Private school	0.066	-0.085
	(0.280)	(0.092)
School that offers Bachelors	0.086	0.021
	(0.392)	(0.128)
Schools that offers advanced degree (pHd, masters)	0.352	-0.082
	(0.311)	(0.101)
Specialized school (e.g. trade school)	-0.116	-0.026
	(0.371)	(0.121)
For profit school	-0.158	0.005
	(0.337)	(0.109)
School enrollment	0.000	-0.000*
	(0.000)	(0.000)
Respondent responsible for determining accommodations	0.602	0.082
	(0.453)	(0.143)
Respondent is director of Disability Services	0.213	-0.117
	(0.264)	(0.086)
Time respondents has spent working in Disability services	0.001	0.000
	(0.001)	(0.000)
Time respondent spends working with students each week	-0.006	0.001
	(0.010)	(0.003)
Age	-0.121	-0.086*
	(0.158)	(0.052)
Income	-0.187	0.046
	(0.121)	(0.039)
Female	0.360	0.168*
	(0.263)	(0.086)
Hispanic	-0.284	-0.150
	(0.528)	(0.172)
Ideology	-0.179***	-0.014
	(0.068)	(0.022)
Education	-0.262	0.078
	(0.182)	(0.058)

Constant	2.115	4.356***
	(1.347)	(0.429)
Observations	473	473
R-squared		0.210

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Accommodation Outcome Measurements

VARIABLES	(1) Regular Apt.	(2) Number ADHD	(4) Number Vision
Black Condition	-0.150	-0.043	-0.046
	(0.233)	(0.141)	(0.107)
ADHD Condition	-0.231		
	(0.148)		
Work Condition	-0.045	-0.149	0.027
	(0.179)	(0.090)	(0.065)
Hardwork*ADHD	-0.019		
	(0.210)		
Hardwork*Black	0.226	0.151	0.029
	(0.283)	(0.172)	(0.126)
RaceBiasTraining	0.049	0.045	-0.013
	(0.161)	(0.098)	(0.075)
Race BiasTraining* Black	-0.043	0.005	0.102
	(0.270)	(0.165)	(0.124)
RaceBiasTraining*Black* Hardwork	-0.046	0.074	-0.011
	(0.305)	(0.184)	(0.134)
Private school	-0.022		-0.089
	(0.140)		(0.064)
School that offers Bachelors	0.247	-0.143	0.031
	(0.195)	(0.114)	(0.082)
Schools that offers advanced degree (pHd, masters)	0.156	-0.170**	0.016
	(0.154)	(0.084)	(0.068)
Specialized school (e.g. trade school)	0.289	0.060	-0.024
	(0.184)	(0.110)	(0.081)
For profit school	-0.113	-0.099	-0.060
	(0.166)	(0.117)	(0.071)
School enrollment	-0.000**	-0.000	-0.000
	(0.000)	(0.000)	(0.000)
Respondent responsible for	-0.038	0.055	0.085

determining accommodations					
	(0.218)	(0.154)	(0.092)		
Respondent is director of Disability Services	-0.001	-0.022	-0.032		
	(0.132)	(0.084)	(0.057)		
Time respondents has spent working in Disability services	0.001**	0.000	0.000		
	(0.001)	(0.000)	(0.000)		
Time respondent spends working with students each week	0.008	0.005	-0.000		
	(0.005)	(0.003)	(0.002)		
Age	-0.020	0.029	-0.052		
	(0.079)	(0.050)	(0.034)		
Income	0.045	-0.000	0.032		
	(0.060)	(0.038)	(0.026)		
Female	-0.223*	-0.112	-0.017		
	(0.131)	(0.084)	(0.055)		
Hispanic	-0.221	0.102	0.101		
	(0.263)	(0.171)		(0.108)	
Ideology	0.005	-0.006		-0.014	
	(0.033)	(0.020)		(0.015)	
Education	-0.158*	-0.036		-0.029	
	(0.088)	(0.056)		(0.039)	
Constant	4.503***	1.695***	-81.496	2.381***	-29.189
	(0.655)	(0.412)	(0.000)	(0.276)	(0.000)
Observations	473	227	227	246	246
R-squared	0.080				

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Appendix G: Racial Resentment Moderation of Attitudinal and Application Process Outcome Measurements

VARIABLES	(1) Deserving	(2) Compliance	(3) Traits	(4) Receive	(5) Self-Report
Black Condition	-0.075	0.004	0.016	-0.047	-1.028***
	(0.149)	(0.128)	(0.097)	(0.127)	(0.374)
ADHD Condition	-0.771***	-0.444***	-0.214***	-0.802***	-1.370***
	(0.109)	(0.093)	(0.071)	(0.092)	(0.286)
Hardwrok Condition	0.202	0.205*	0.233***	0.007	-0.020
	(0.132)	(0.114)	(0.086)	(0.113)	(0.316)
Hardwork*ADHD	0.362**	0.354***	0.193*	0.269**	0.876**
	(0.153)	(0.131)	(0.099)	(0.130)	(0.380)
Hardwork*Black	0.063	0.150	-0.006	0.056	0.970**
	(0.191)	(0.163)	(0.124)	(0.162)	(0.466)
Racial Resentment	-0.428	0.046	-0.371**	-0.147	-2.507***
	(0.282)	(0.241)	(0.183)	(0.240)	(0.731)
Racial Resentment*Black	0.122	-0.465	-0.035	-0.118	2.338*
	(0.500)	(0.420)	(0.321)	(0.423)	(1.285)
Racial Resentment*Black* Hardwork	-0.047	-0.248	0.169	-0.064	-1.366
	(0.558)	(0.469)	(0.357)	(0.472)	(1.380)
Constant	4.482***	3.675***	3.733***	4.600***	0.771***
	(0.113)	(0.098)	(0.074)	(0.096)	(0.276)
Observations	532	527	522	533	535
R-squared	0.161	0.125	0.120	0.187	

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1