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INFORMING THE CHANGE: A BEST-EVIDENCE SYNTHESIS OF MINORITY
DISPROPORTIONALITY IN SPECIAL EDUCATION FROM 1984-2004

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ABSTRACT

Since the 1960s, scholars have studied the disproportionate proportion of minority students in special education. Research has pointed at a variety of factors, including structural and developmental variables that could affect the ratio of minority students placed into special education. In attempts to reduce improper placements of students, amendments were added to the Individuals with Disabilities Education Act in 2004 that directly addressed disproportionality and required schools to collect data and allocate funds to address the phenomenon. This best-evidence synthesis analysis examines empirical studies from 1984 to 2004 that likely informed these changes. Based on a predetermined set of criteria, databases and search terms, nine studies were examined. Although all of the indicated measures of disproportionality among minority students, further analysis shows weaknesses in the validity of the methods and data used in the study. Most in this analysis failed to account for academic achievement, as well as used descriptive statistics to imply casual inference. Additionally, the researchers state a need for further research and most of the studies do not suggest measures driven at simply reducing disproportionality and minority overrepresentation—which is the basis of the 2004 amendments. . As such, the available research about disproportionality was not comprehensive and led to amendments that did not address the gaps in the field.

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Chapter 1

Introduction

Beginning with Lloyd Dunn's groundbreaking 1968 report "Special education for the mildly retarded: Is much of it justifiable?" researchers have acknowledged a skewed proportion of minority students in special education. Consistently, minority students are identified and enrolled in special education at higher rates than White children (Artiles & Trent, 1994). In 2004, revisions to the Individuals with Disabilities Education Act (IDEA) addressed this disproportionality federally. These revisions, which were enacted in 2005 and later finalized in 2006, included requirements for all schools across the nation to include measures to identify and monitor minority disproportionality in their special education programs. Under 20 U.S. Code § 1418, a Local Education Agency (LEA) must allocate funds to a school with significant disproportionality to implement early intervention programs and later report on the outcomes of these changes. (Individuals with Disabilities Education Act of 2004, 2004).

This best-evidence synthesis attempts to understand a cross-section of the empirical research that informed the 2004 IDEA revisions that attempted to prevent or reduce minority disproportionality in special education. By analyzing the methods of these studies, one can better understand the justifications for the 2004 revisions as well as how to better inform further legislation including possible amendments to IDEA in the future.

The second chapter provides background to minority disproportionality and the history of the Individuals with Disabilities Education Act, as well as the revisions that addressed disproportionality. Using research from the National Research Council 2002 report on minority special and gifted education--along with other sources--Chapter 2 provides general knowledge about disproportionality and possible causes identified in 2002. It also reports on how disproportionality was incorporated into IDEA from its inception to 2004.

Chapter 3 describes the methodology of the best synthesis analysis and how the selected were chosen. This chapter explains the reasoning for using a best synthesis analysis, as well as why the criteria for selecting articles were chosen. The methodology consists of a protocol of coding articles from four different databases used in education and social science research. Using the articles identified using the coding methodology outlined in Chapter 3, Chapter 4 analyses the findings and research procedures of these articles. In this chapter, I outline the descriptive information about the included studies in the analysis, including data studied, methods used and measures of disproportionality. In Chapter 4, I also highlight key weaknesses of the included studies, such as a lack of academic achievement data and a reliance on descriptive statistics, as well as their proposed implications for further policy and research.

Finally, in Chapter 5, I discuss the implications of this research—particularly how the analysis reveals weaknesses about the research available during this time period—and its possible impacts on the 2004 IDEA amendments. Along with the studies’ weaknesses, the empirical research included in this study suggests that other variables require further research and provides possible solutions that center on broad special education reforms rather than simply reducing instances of disproportionality through school-based action. The 2004 amendments required action in the school setting to reduce disproportionality that was not backed by research,

and the validity and need for these amendments should be reevaluated in the next reauthorization of IDEA.

Chapter 2

Background on Disproportionality in Special Education

Disproportionality in Special Education

Since the late 1960s, researchers and administrators have reported on the disproportionality of minority students in special education. Disproportionality in this instance often means the number of minority and White children in special education when compared to the total population of minority and White students in the general school-aged population. Disproportionality can also be compared to the population with controls for individual achievement and behavior; however, there is no one database for this type of data (National Research Council, 2002). Thus, research looks at a multitude of factors including socioeconomic status and achievement, as well as understand why disproportionality is being observed.

Possible Causes of Disproportionality

Researchers generally suggest three different types of factors that likely contribute to racial disparities in special education. According to the 2002 report from the National Research Council, these three areas are not mutually exclusive and can interact. One of the suggestions for possible explanations is that by the time children reach school age, children of different races and ethnicities already differ in cognitive and behavioral characteristics. Another possible explanation is that schools may independently influence academic behavior of students.

Finally, standards and the implementation of assessments, teaching methods, and policy may be biased, which would affect the placement of minority students (National Research Council, 2002).

One of the proposed causes through research are cognitive and developmental differences between children of different races. Some researchers cite differences in biological and environmental factors as influences on the disproportionality problem. With minority children, particularly Black children, at a higher risk of living in poverty, minority children are more likely to be exposed to risk factors that can affect their cognitive and physical development (Vallas, 2009). Although there are dozens of possible environmental and biological influences on academic achievement, the 2002 National Report compiled several of the most prominent factors examined in relevant research. One possible contributing factor to the higher rate of disability identification in special education is the occurrence of low birth-weights amongst minority populations. Low birth weight in children can lead to lower IQs, cerebral palsy, and less emotional maturity and competence. Black mothers are twice as likely to have a child that is underweight than White mothers (National Research Council, 2002). As such, this may be a contributor to the disproportionality of minority students identified with a disability.

Other factors explored in research deals with exposure to a variety of factors, such as tobacco, alcohol, and lead. Native Americans mothers are shown to be the demographic most likely to smoke during pregnancy, which hinder a child's development. At ages 5 to 6, those exposed to prenatal tobacco showed lower language scores and performance on memory tasks than children who were not exposed to tobacco (Fried et. al., 1992). Exposure to alcohol during pregnancy can also hinder cognitive development; higher rates of heavy drinking during pregnancy are found amongst Black and American Indian women than Hispanic, Asian or

Pacific Islander women (National Research Council, 2002). Some of the other factors mentioned in the 2002 National Research Council report include lead exposure and iron deficiency, both of which occur in higher rates among minority children. This list of possible contributors is not comprehensive, but it provides an idea of possible influencers that could affect a child's cognitive and physical development before entering into formal education. The differences between racial groups could contribute to the overrepresentation issue within special education in schools.

Another possible set of explanatory factors for minority disproportionality in special education are school- and teacher-based influences. One contributor may be the population of teachers who teach minority students. As outlined in Vallas and the National Research Council's 2002 report, poor and minority students are more likely to have teachers with less expertise and experience. According to a 2001 study from the Department of Education, 15 percent of elementary school and 21 percent of high school teachers in high-poverty schools had taught for less than three years, as opposed to eight percent and nine percent of teachers in low-poverty districts. In a similar vein, a study in 1996 showed that Black students were nearly twice as likely to be assigned ineffective teachers when compared to their White counterparts (Sanders & Rivers, 1996). Thus, ineffective teachers may contribute to deficits in knowledge that could lead to higher rates of placement in special education.

The proportion of minority teachers in the United States has also been cited as possibly contributing to disproportionality. Since the 1990s, the percentage of minority teachers has been decreasing, while the number of minority students in American classrooms has been rising. In 1998, non-Hispanic Black students made up 17% of students in schools, but made up only 7.3% of the teacher population (National Research Council, 2001). This discrepancy can contribute to

a mismatch between educators and students, which could foster biased attitudes and a lack of cultural understanding that could result in higher referrals and placements in special education.

The third set of explanatory factors of disproportionality deals with bias in assessments, which could affect the academic outcomes of students. Researchers have marked concerns with high-stake testing being used as a possible indicator of disability. High-stakes testing has roots in discriminatory IQ testing and eugenics, and could continue to carry bias with them today (Au, 2014). Overall, have shown that communities of mostly low-income and students of color struggle on high-stakes testing and pressure on these populations is more significant than mostly-White populations (Knoester & Au, 2017). Thus, testing may skew the referrals and placement into special education. In addition, federal legislation provides little guidance in the assessment, referral and placement processes for students identified as needing additional support in the classroom. As such, states and districts are often set their own “cut-offs,” which can cause a large variation in what constitutes a referral to special education and students only receive special education services if their disabilities are negatively affecting their school performance (Vallas, 2009).

Teacher bias is another variable that could play a role in disproportionality in special education. According to the National Research Council report, several researchers in the 1980s and 1990s used simulated situations to test bias in the classroom. Researchers, such as Irvine in 1990, found that teachers formed impressions of students’ academic abilities that were inaccurate, particularly in regard to Black males, in response to viewing photographs or profiles of children of different ethnicities. Additionally, students whose culture matches that of the school are more likely to have an advantage coming to the school setting, which in many districts, would be White children (National Research Council, 2002). History and societal

expectations also play a role. With decades of stereotypes that minority children are less intelligent than White students, teachers may—knowingly or not—underestimate students of color and elicit behavior that confirms these stereotypes (National Research Council, 2002). With historical discrimination as a part of United States culture, bias can present itself in the classroom and in some cases, affect disability identification and special education placement.

Another factor highlighted the National Research Council Report is academic achievement. According to the report, unexpected academic achievement is the most central component in diagnosing a child with a learning disability (National Research Council, 2002). Thus, academic achievement is critical to identification and placement into special education. Additionally, a factor important to note is the achievement gap that exists between minority students and their White peers. According to 2004 and 2005 studies from Fryer and Levitt, there was a 0.66 gap in math scores and 0.40 in reading beginning in Kindergarten. This gap grew over time, based on their analysis of Early Childhood Longitudinal Study (ECLS) data. Subsequently, the achievement gap, especially when academic achievement is a core aspect of disability identification, should be accounted for when studying disproportionality.

This list is not exhaustive for the possible variables that contribute to disproportionality. Just as racial relations in the United States are influenced and dictated by history and an abundance of resulting socioeconomic factors, racial disproportionality in special education is influenced and caused by a complex series of variables. In this analysis, the articles examined explore some of these factors, but fail to account for others that could provide further insight into this phenomenon.

History of Individuals with Disabilities Education Act

In the early 1970s, only 20% of children with disabilities in the United States were educated in public schools. Following the Civil Rights Movement, the number of court cases pertaining to the rights of disabled students increased in frequency. By 1974, over 48 right-to-education cases were heard in 28 states. On November 29, 1975, Congress and President Gerald Ford took significant strides to provide education to those with special needs by signing the Education for All Handicapped Children Act of 1975 into law. EACHA combined a set of rights for children with disabilities and financial incentives to states who accepted the terms of the law (Yell, 2013). EACHA was reauthorized 1978, 1983 and 1986. The legislation was renamed the Individuals with Disabilities Act (IDEA) when the law was amended in 1990.

Individuals with Disabilities Education Act, or Public Law 94-142, ensures that all children with disabilities or special needs have access to “free appropriate public education.” According to Section 504 of the Rehabilitation Act of 1973 someone labeled as disabled is “any person who: (i) has a physical or mental impairment which substantially limits one or more major life activities, (ii) has a record of such an impairment, or (iii) is regarded as having such an impairment” (U.S. Department of Education, 2010). Just as children not identified as having a disability, IDEA protects disabled children’s rights to a free education that meets their individual potential. To accommodate for the “appropriate” aspect of “free appropriate public education” (FAPE), schools are required to meet the individual needs, place students in the least restrictive environment--which often means integration into general classroom settings-- and proper evaluation and placement procedures with due process (U.S. Department of Education, 2010).

In addition, IDEA act protects the rights children and families, provides financial assistance to states to aid in implementation, and assesses these efforts. (Rotatori, Obiakor &

Bakken, 2011). This financial assistance is granted through discretionary grants--which are granted to states, higher education institutions, and non-profit agencies to advance the status of special education through research, awareness and interventions--and formula grants, which are given to states for special education interventions (U.S. Department of Education, 2018). IDEA is the largest federal legislation regarding special education, and it guides the procedures and practices of all 50 states.

IDEA in 1997 addressed minority disproportionality in special education. Within the text of the law, Chapter 2 identifies that “Greater efforts are needed to prevent the intensification of problems connected with mislabeling and high dropout rates among minority children with disabilities.” Using statistics related to minority disability identification and dropout rates for minority students, IDEA creates guidelines of how to receive funding for minority-driven initiatives, including the training of school professionals. IDEA 1997 also required states to collect data on minority students, including disability identification rates, the number of children receiving special education, number of graduates and performance of these minority students in special education (Individuals with Disabilities Education Act, 1997). The provisions are as such:

(1) IN GENERAL- Each State that receives assistance under this part, and the Secretary of the Interior, shall provide for the collection and examination of data to determine if significant disproportionality based on race is occurring in the State with respect to -- (A) the identification of children as children with disabilities, including the identification of children as children with disabilities in accordance with a particular impairment described in section 602(3); and (B) the placement in particular educational settings of such children.

(2) REVIEW AND REVISION OF POLICIES, PRACTICES, AND PROCEDURES- In the case of a determination of significant disproportionality with respect to the identification of children as children with disabilities, or the

placement in particular educational settings of such children, in accordance with paragraph (1), the State or the Secretary of the Interior, as the case may be, shall provide for the review and, if appropriate, revision of the policies, procedures, and practices used in such identification or placement to ensure that such policies, procedures, and practices comply with the requirements of this Act (Individuals with Disabilities Education Act, 1997).

Unlike other provisions in IDEA with more specifics, IDEA 1997 states that students, including minority students, need to be placed in the least restrictive environment possible. Additionally, if disproportionality is identified, the State or Secretary of Interior could choose to enact change.

Though provisions in IDEA addressed disproportionality in IDEA 1997, they were generally considered inefficient. Due to the lack of effect from the 1997 amendments and the general nature of the provisions, the issue received greater emphasis for the 2004 reauthorization (Albrecht, 2012). In addition, the problem received more attention in the years before the 2004 reauthorization. One source that drew attention to the issue was the 2002 National Council Report on minority disproportionality in special and gifted education, which compiled extensive research on the issue and its socioeconomic context. In a May 2, 2002, statement to the House of Representatives, the chairman of the subcommittee on Education Reform, Michael Castle, directly specified that “identifying and eliminating the root causes of overidentification, especially among minority children” (Rethinking special education, 2002). In the same hearing, Kathertine Beh Neas of the Consortium for Citizens with Disabilities Education Task Force stated, “IDEA should give increased attention to racial, ethnic, and linguistic diversity to prevent overrepresentation or under representation of minority children in special education. Some overrepresentation of minorities in special education may be due to the

well-documented link between poverty and disability. However, overrepresentation of minority students in some categories of disability significantly exceeds what would have been predicted by the impact of poverty” (Rethinking special education, 2002).

The hearing on special education particularly highlighted bias and teacher inefficiencies as part of the disproportionality problem. Dr. Tynan of Disruptive Behavior Clinic at A.I DuPont Hospital stated,

In my own practice in the last year, I have seen three or four children, all African American, referred for “hyperactivity,” and when I test them I find out they are gifted intellectually, a thought that never occurred to the teacher as this little boy was buzzing around the room. So identification is a problem, and good early screening and assessment are problems, and there are some biases still out there. (Rethinking special education, 2002).

This testimony, along with others from research and the education sphere, helped prompt a school-based approach, which emphasized bias as a large factor in disproportionality.

President George W. Bush reauthorized IDEA by signing the Individuals with Disabilities Education Improvement Act on December 3, 2004. The provisions of IDEA took effect on July 1, 2005 and was finalized regulations were published in August of 2006. Within these provisions, the disproportionality of minority students in special education in directly addressed. IDEA 2004 focuses on four main points to address and reduce disproportionality:

- Require states to have policies and procedures regarding disproportionality or misidentification
- Requires collection and examination of data regarding disproportionality
- Establishes requirements when reviewing policies and procedures

- Authorizes technical assistance, demonstration projects, dissemination of information and implementation of scientifically based research (IDEA Reauthorized Statute, 2005)

As with other sections of IDEA, Section 618(d) ensures that states create an infrastructure of policies and procedures to protect students from inappropriate disproportionate identification and placement in special education. This requirement encompasses the other goals of the 2004 amendments. One amendment requires Local Education Agencies (LEAs) to collect data on students in special education and identify disproportionality. IDEA requires disproportionality to be measured in terms of the identification of students with disabilities, the placement of children in educational settings, and disciplinary action. If from this data, disproportionality is detected, a formal review, and if necessary, revision of policies is required within the LEA to address the disproportionality. These revisions include the requirement to allocate the maximum amount of funds under 613(f) of IDEA to implement early intervention programs. 613(f) specifies:

A local educational agency may not use more than 15 percent of the amount such agency receives under this part for any fiscal year, less any amount reduced by the agency pursuant to subsection (a)(2)(C), if any, in combination with other amounts (which may include amounts other than education funds), to develop and implement coordinated, early intervening services, which may include interagency financing structures, for students in kindergarten through grade 12 (with a particular emphasis on students in kindergarten through grade 3) who have not been identified as needing special education or related services but who need additional academic and behavioral support to succeed in a general education environment

Finally, the revision to IDEA aim to provide professionals with the skills and support to ensure the best support of children with disabilities and proper identification and placement of

students. It also aims to provide the infrastructure for education for school professionals on minority and English language learner disciplinary practices (IDEA Reauthorized Statue, 2005).

Chapter 3

Methods

Coding Methods

In order to study a cross-section of research that informed the 2004 Individuals with Disabilities Education Act, I am using a best evidence synthesis. A best evidence synthesis identifies articles with both high external and internal validity that can inform scholarly debate. It uses articles selected using a predetermined criteria--either using previous narratives or conducting a preliminary search. For this best evidence synthesis, the priori inclusion criteria used in the identification was based off “Are Black Children Disproportionately Overrepresented in Special Education? A Best-Evidence Synthesis,” a 2017 study published in *Exceptional Children* (Morgan, Farkas, et. al, 2017). This study was selected as a guiding example for the criteria selected for this study, because it was a peer-review best evidence synthesis examining similar types of research on disproportionality.

A best evidence synthesis was selected as the form of analysis, because it attempts to examine several of high internal and external validity (Slavin 1986). In the case that not all the demonstrate high levels of internal and external validity, Slavin describes that a best evidence synthesis could cautiously examine the less well-designed as long as it was adequately unbiased. With less quantitative research existing during the time period selected for this analysis, some of the studies included in the analysis were selected with a more limited degree of internal and external validity when compared to other educational best synthesis analyses. This limit to

validity stems mostly from the use of descriptive statistics to make casual inferences, as well less sophisticated forms of statistical analysis than future studies. However, to counter any deficits in validity, this analysis attempts to address weaknesses in the research methods and the results presented.

Four databases were used in selecting articles for analysis: ERIC, Proquest, PsycInfo, and Web of Science. These databases were selected because they house a large collection of peer-reviewed social science and education research. Each of these databases also includes the option for advance search, which helps with the inclusion of the criteria in the search process. In each of these databases, I searched the phrases “Disproportionality of minority students in special education” and “Overrepresentation of minority students in special education.” I chose to use the “overrepresentation” in one of the search phrases to mimic the language of IDEA 2004 and prior Congressional hearings. The results of these two searches in each of the selected databases was the primary pool of articles to implement the other criteria. In addition, the priori inclusion criteria were used to identify articles from Waitoller’s review, which analyzed research in disproportionality research from the 1960s through 2010 (2010).

For this coding, seven criteria were used after using two particular searches-- “Disproportionality of minority students in special education: and “overrepresentation of minority students in special education” --in the four databases. Each of the criteria aims to seek to identify studies that show if minority disproportionality in special education were significant, as well as hone in on the research that informed the 2004 IDEA revisions. Thus, the seven criteria are as follows

- separates sample by race
- peer reviewed

- students are enrolled or identified as having special needs
- the study uses a regression or ANOVA model
- published between January 1, 1984 and December 31, 2004
- analyzes K-12 schools
- takes place within the United States.

Because the experience of different races varies in the United States, each study included in this synthesis needed to separate the studied sample into different racial groups. This not only helps with the identification of significant instances of disproportionality, but also show the nuances of minority placement in special education. To study these racial groups, all studies selected used either regression models or ANOVA to determine the statistical significance of the disproportionality. Originally, only regressions were to be included in the analysis. However, after coding articles from all four databases, it was apparent that ANOVA was a common form of analysis for this area of research during the designated period. Thus, to expand the number of articles included in the analysis, using ANOVA to determine the significance of disproportionality were included.

Because referral into special education does not ultimately guarantee placement or inclusion in special education services, this study does not include that only look at referral rates. Although referrals play a major role into the ultimate disproportionality issue, this analysis looks exclusively at those enrolled in services, which is often the scope in which disproportionality is most often expressed on the national scale. Similarly, other criteria were selected to mirror the influence of IDEA. All of the studies included look at grades Kindergarten through 12th grade in the United States; this is the population affected most by IDEA. Each article was published between 1984 to 2004--the 20 years leading up to the 2004 IDEA revisions. This time period was

selected to summarize the information available in the 2 decades leading up to the revisions, which likely informed and influenced the changes. Finally, to determine research with high standards and rigor, all articles are peer reviewed.

Using this coding method, 102 unique articles were coded from the search results of the four databases. Across the four databases, repeated articles existed. From this 102, eight met the criteria outlined previously in the section. In addition, Waitoller's bibliography was used as an additional resource and the 64 citations were also coded. From this, one additional article not previously included was identified.

Chapter 4

Results

To understand the results of this analysis, this chapter centers on several research questions. First, what comprises these studies and what methods are used to study disproportionality? To answer this question, I will be “taking inventory” of the types of data used, the year of publication, type of statistical analysis used, and types of disabilities studied. Additionally, this analysis will indicate which studies show measures of significant disproportionality. Secondly, how sound was the evidence from these studies, and did they properly inform the 2004 amendments to IDEA? As such, I examine weaknesses, such as the lack of studies that account for individual academic achievement and the use of descriptive statistics to inform casual inferences, as well as the direction and implications that the studies suggest for policy and further research.

In the case of this analysis, all studies showed some measures of disproportionality and interactions of special education placement or identification with race. However, different variables were measured and analyzed. Three articles from Coutinho and Oswald (2001, 2002, 2002) looked at gender in conjunction with socioeconomic factors such as housing, poverty and per-pupil expenditure in relation to disability identification. In this case, not all minorities were noted as overrepresented. Female minority students, along with male Asian/Pacific Islanders were not overrepresented. The 1999 article from the same authors does not consider gender, but

analyses two types of disability as opposed to one as in the other studies. Hosp and Reschly (2004) also examine the interactions race and gender with economic, academic and demographic factors.

Two of the studies' focus mostly on behavioral data in conjunction with descriptive statistics. Artiles, Munoz and Abedi (1998) identify placement predictors for students with learning disabilities. Some of the behavioral variables include student self-esteem, locus on control and perception of social status. These factors, particularly perception of social status, student locus on control, and perception of academic standing were significant for Black and White students, but not for Latino students. Hosp and Reschly (2002) also measured factors related to behavior and student perception, but through the lens of predictors of restrictiveness. In this case, some of the factors, such as ratings of poor anger control, interacted with race for Black students. However, the overwhelming majority—five of 100 comparisons--indicated that there was no interaction with race and generally showed that White and Black students with learning disabilities were treated the same.

The last two articles in this analysis look at structural and regional effects on disproportionality. Zhang and Katsiyannis (2002) analyzes the differences in disproportionality in different areas of the United States. Using descriptive statistics to show disproportionality as a national trend, the study investigates whether disproportionality and overrepresentation varies for Black and Hispanic students depending on region. In the analysis, which used poverty rates as a covariate, the authors find that when compared to the North East, students in the South and West were more likely to experience disproportionality. In Eitle (2002), the author argues that school and community factors, such as have a court order to desegregate, is significant in influencing the number of Black students in mentally handicapped programs.

The nine studies included in the analysis implemented several types of statistical analyses, including several types of regressions and ANOVA. As described in the methods section, the original intention was to include only studies that used regression modeling, but after examining studies from this period, it became apparent that ANOVA was a common form of analysis and was included in the analysis.

One important characteristic to note within the research examined are the types of disabilities included in the study. Because identification and placement in services varies based on the type of disability, the types of disability examined—learning disability, emotional disturbance and mental retardation/intellectual disability—are outlined by study. Three of the studies, Zhang (2002), Hosp (2004), and Oswald (1999), examine multiple forms of disabilities and separate them as such.

Similar bodies of data were used across all of the studies. In this analysis, eight of the nine studies utilize national data and seven of these eight studies use the national data in conjunction with another national dataset or district-based data. Six of the nine draw from the Common Core of Data, which the Department of Education’s primary database on public education in the United States. The CCD uses data from over 100,000 schools and 49.8 million students. These six studies also use data from the Office of Civil Rights, which includes information about civil rights compliance in schools and districts across the nation (“Common Core Data (CCD)”).

One study, Zhang and Katsiyannis (2002), uses several sources of data that are not used by the other studies included in this analysis. This study combined data from the 22nd Annual Report to Congress on the Implementation of the Individuals with Disabilities Education Act, National Center for Education Statistics: Statistics and Poverty in the United States. This

difference in data sets should be noted when analyzing the results of this study and how they differ from the other studies included. Artiles, Aguirre and Abedi (1998) also use national data, but they use the National Education Longitudinal Study database. This is the only Longitudinal data set used in this best synthesis analysis. Longitudinal data provides information drawn from the same individuals, which enables the documentation of stable patterns, as well as new trends (German National Academy, 2016).

Finally, one study, Hosp and Reschly (2002) only used district data from several districts in Delaware. Although the national datasets drew from district data, it should be noted that this data was drawn from a court case rather than information drawn from the Department of Education.

Lack of Achievement Data

One of the most significant weaknesses of this pool of research is that only two articles, both written by Hosp and Reschly, account for academic achievement in their study by using percentages of students in each proficient in math and reading. Academic achievement is one of the most common and significant indicators of a need for special accommodations and special education placement. Thus, failing to account for academic achievement is a major flaw that could significantly alter the findings of other seven included in this analysis.

In their 2002 article, Hosp and Reschly take achievement into account and it shows that many factors of placement are not significant in interaction with race. While there were some variables that interacted with race and academic achievement, such as the discrepancy between instructional level and grade level in reading; similarly, the study shows that Black students with

larger discrepancies spend less time in the traditional classroom setting than White students. Several other factors, such as behavioral rating scale data about poor anger control and dependency, also show an interaction with race. However, most other academic factors and behavioral issues show no significant interaction with race. Only five out of the 100 variables analyzed showed significant interaction with race, which suggests that the differences between referral, identification and special education programming between White and Black students are not due to bias.

Although this study is stronger in the sense that it accounts for academic achievement, there are several weaknesses that affect the validity of this research. One of the key weaknesses to note is that this study only accounted for White and Black students. As such, this information may not be applicable to other racial groups. In addition, the study was conducted from a sample of students from four school districts in Delaware that were part of a 1995 civil rights lawsuit, *Coalition to Save Our Children v. State Board of Education of Delaware*. Because the sample only consisted of 230 students from Delaware and only studies those with a learning disability, this study only examined a small cross-section of the nation and replications would be necessary to test the generalizability of the findings.

Hosp and Reschly also took academic achievement into account in their 2004 article “Disproportionate Representation of Minority Students in Special Education: Academic, Demographic and Economic Predictors.” The authors included aggregate academic achievement scores. The academic predictor variable was percentage of students proficient in math and reading with White students used as the comparison group. Although academic predictors were differential amongst different types of disabilities, it contributed to prediction of eight to the twelve models included in the study. In Hosp and Reschly, academic predictors were the weakest

of the three used—academic, demographic and economic. However, several factors, including that the academic information was aggregated, could contribute to this relative weaknesses. The lack of individual academic achievement in these studies demonstrates an ecological fallacy. Because the studies that did include academic achievement only used aggregate information, the data used could have lost critical details that were found in the individual-student based data (Hsieh, 2017).

Artiles, Aguirre-Munoz and Abedi (1998) also included academic achievement into their analysis of placement in learning disability programs. In this particular study, math achievement was assessed as a possible placement predictor and reading achievement was controlled. Reading achievement was used as a covariate in the analysis; however, math achievement was only a statistically significant predictor for Latino students in this analysis. However, achievement information is aggregated from the sample taken from the National Education Longitudinal Study.

One weaknesses of all of the articles included in this analysis is that all articles fail to account for individual student academic achievement. As highlighted in Hosp and Reschly, referral is a strong predictor of ultimate placement into special education services and academic differences are related to disproportionality (2002). To fully understand the discrepancies between special education placements, individual academic information would be beneficial. As highlighted earlier in this study, academic achievement is one of the largest factors in referral to special education, especially for learning disabilities. Incorporating individual-level academic data would not only expand the understanding of academics' role in disproportionality, but also show how achievement interacts with other socioeconomic factors from student to student.

Use of Descriptive Statistics

Another issue within this analysis is that some of the articles use descriptive statistics to support a general phenomenon of disproportionality in the special education. In four of the nine articles, overall disproportionality of minority students was determined by basic percentages. Even in studies that later use ANOVA or regression models to determine the influence of sociodemographic and academic variables on identification and placement—which was a requirement for selection for this analysis—the use of basic descriptive characteristics was problematic. In several of the studies, the authors claim an overrepresentation of minority students without considering demographic factors or running statistical models that may control for extraneous variables that could influence the disproportionality outside of the classroom.

In three studies by Oswald and Cutinho, percentages were used at the beginning of the results section to demonstrate disproportionality. For example, in their 2001 study, the authors claimed that because the mental retardation identification rates ranged from 0.44% for Asian females and 3.15% for Black males, there was a clear disproportionality. This study also used a chi-square analysis to create odds ratios of identification rates for different racial and gender groups. Although the study later uses logistic regression analysis to account for variables such as poverty and student-teacher ratio, descriptive statistics were the main form of showing disproportionality in the study based on each subgroup. Because these studies by Oswald and Cutinho used Pairwise Spearman Rank Correlations to show the influence of variables on special education identification, the variables included in the study were not built into a model that controls for other explanations to show disproportionality for each group. Even when models were used to account for the interactions of these variables, the results were not clearly expressed because they are plotted the rates on a graph rather than a traditional chart that marks statistical

significance. Thus, the descriptive statistics are the clearest indicators of group disproportionality in these two studies.

Another study that used descriptive statistics to try to support the claim of overrepresentation is Zhang and Katsiyannis' 2002 study. Before using ANOVA to determine the differences in disproportionality variation between regions of the United States, the authors supported concerns regarding the percentage of Black students in special education using only percentage differences between Black students and White students. Although these ratios are true, they are elementary in nature and do not account for socioeconomic factors that interact with race in the United States. By using only descriptive statistics to label minority placement in special education as problematic, developmental and socioeconomic factors--which may contribute to a legitimate need for special education services--are not accounted for within the study. Dealing with a complicated sociological phenomenon, the results describing overall measures of disproportionality for this study only scratch the surface about the phenomenon and make broad claims about policy implications.

Framing of Implications

Although misidentification is largely negative and fails to meet the need of students, special education can be vital for student success when appropriate. In this analysis, the studies framed the implications for further research differently. While some highlighted the importance of developmental discrepancies between children of different races and the need for increased research, others marked disproportionality as an inherently harmful problem that needs to be corrected by reducing overrepresentation. Acknowledging these differences is important to

understanding the perception of disproportionality in research at this time and how these ideas may have affected policy changes surrounding the phenomenon.

Only one of the studies suggested measures to directly reduce overrepresentation. In Zhang and Katsiyannis (2002), the authors suggested changes that would result “in the general reduction of special education referrals.” However, the other eight studies acknowledged a need for overall special education referral and placement protocol. In Oswald and Coutinho (2001) and Coutinho and Oswald (2002), the authors mentioned a need for further research not covered in their study, including investigation of under-identification of White students, investigation of the identification process, and examination of age differences. By acknowledging research that needed to be focused on, the authors also acknowledged weaknesses within their own research. However, they also showed that their results were only a piece of the puzzle.

Two of the studies included in the analysis suggested structural changes to special education protocol in general. Artiles, Munoz and Abedi (1998) did not mention race or ethnicity in any of the four suggestions presented. Rather, the focus was on training and preparation of families, encouragement of healthy work habits and teaching educators to be sensitive to students’ perspectives. Although this study differs from the majority of studies included in this analysis because it focused on placement, these implications frame solutions as not simply reducing any perceived overrepresentation or more restrictive placement, but rather, strengthening the entire system. Eitle (2002) also gave suggestions relating to the special education system as a whole, but the author centered district structuring, school desegregation and more objective forms of identification. Through these suggestions, these authors implied that disproportionality was not caused exclusively by bias or discrimination, and the issue should be viewed as such.

The studies also indicated a need for different data sets to use for analysis. Both Cutinho and Oswald (2002) and Oswald and Cutinho (1999) acknowledged the need for district, school and, system information to analyze along with national data for additional information and support. Hosp and Reschly (2004) highlighted the need for individual-level data, which was acknowledged previously in this analysis as one of the greatest deficits of this cross section of research. By extending research to more of the individual rather than focusing exclusively aggregate data, research is more well-rounded and displays a narrative that is not apparent in the nine selected for this analysis. Highlighting the need for different data, these studies help show that the findings from the studies selected are not definitive. It also shows that researchers believed that the issue was not exclusively driven by bias, which was a concern in the hearings prior to the 2004 authorization.

Finally, Hosp and Reschly (2002) suggested that more quantitative research should be conducted about disproportionality, which at the time, was mostly analyzed through qualitative methods. This lack of quantitative research before 2004 is apparent in this synthesis; after searching through hundreds of studies over four major databases, only nine studies met the criteria of a relatively strong statistical analysis of the issue. As such, mostly qualitative research informed the decisions of the 2004 revisions as opposed to quantitative assessments of the issue.

Acknowledging the proposed implications and needs for action are critical to understanding both the direction of research, as well as the weaknesses of research previously conducted, at the time of the IDEA revisions. Although most indicators in these studies believed that minorities were overrepresented in special education, eight out of the nine studies expressed the complexity of the issue—in both the way the issue is studied and the way policy should address it. Thus, even in the research itself, most of the authors included in this study recognize

that attempts to simply reduce overrepresentation are not necessarily appropriate and a greater understanding of the phenomenon is necessary to provide the proper services and environment for all children.

Recognizing weaknesses and a call for more extensive research, the 2004 amendments required action that was not backed by empirical research. With provisions to allocate funds to reducing disproportionality, the IDEA amendments mandated more action than what this research suggested—likely due to the political opinion that bias is an underlying current of the disproportionality problem. Based on the results of the empirical research analyzed—including the weaknesses in methods--and the implications suggested by these articles, the 2004 revisions were not appropriate based off of the information prior to 2004 reauthorization.

Chapter 5

Discussion

This synthesis displays that although research between 1964 and 2004 showed measures of disproportionality amongst different racial groups, the research methods lacked elements that are important to understanding to the phenomenon of disproportionality in special education. First and foremost, the coding involved in this synthesis revealed that quantitative research in this area of research was lacking in the period leading up to the 2004 IDEA revisions. With the criteria included for the coding—which in many ways was not rigorous in regards to statistical methods—the outcome of only nine studies meeting the requirements for the analysis shows that studies diving further than descriptive statistics or qualitative accounts were scarce during this time period. This shows that although unadjusted ratios may show disproportionality in studies, much of the research at the time did not control for variables other than bias that could explain disparities in special education identification and placement.

Along with a lack of sophisticated quantitative studies during the 20 years leading up the 2004 revisions, research that controlled for socioeconomic variables often did not included academic achievement in their research. In the studies that included measures of academic achievement, researchers used aggregate data. With academic issues as one of the most significant reasons for referral for special education services, the lack of studies including individual achievement data is a weakness of the research of the time. As shown in more recent

publications, such as Morgan and Farkas (2017), controlling for individual academic achievement can have significant effects on the outcomes of studies of disproportionality.

Finally, nearly all of the research analyzed in this study provided recommendations and implications that suggested for a need for increased data and overarching reforms to special education. Although the IDEA reforms aim to gather more data on disproportionality in school districts, the requirements to reduce disproportionality in schools strays from the recommendations of the analyzed research leading up to the changes. Though policy often strays from credible research, the alterations to IDEA show that recommendations from researchers may not have been the primary driver of these changes.

Limitations

Like any analysis, there are several limitations of this study that may affect the results. One of the major limitations is that four of the nine studies share the same primary authors: Oswald, Cutinho and Best. With having nearly half of the studies conducted by the same researchers, one can expect that the methods and outcomes would be similar to one another. As such, the descriptive statistics and general analysis of methods are skewed towards the methods of these authors and effects the overall analysis. However, this also reveals that most researchers analyzing disproportionality were not using either ANOVA or regression models to investigate the issue and more statistically rich studies were published by only a handful of authors. Nonetheless, acknowledging the pool of empirical studies included in the analysis is important to understanding the applicability and validity of the results.

One another difficulty of this analysis is the variation of research methods within the nine studies analyzed. With both studies focusing on the identification of students with special needs and the restrictiveness of placements, there is differences in what the research is analyzing. In addition, the methods of analysis differ, which makes it difficult to compare the results. For example, Zhang and Katsiyannis (2002) analyze the differences in regional disproportionality while Coutinho and Oswald (2002) analyze the effect of gender in addition to other socioeconomic factors. Thus, this analysis may not be as strong as other best synthesis analyses that look at more research that is similar. In future research, the criteria for selection could be altered to create a pool of more similar research. In addition, this sample of nine studies is small. With only nine, the applicability of the study is not as strong as analyses with larger samples. This weakness is primarily influence by the lack of research available during the selected period, but it still affects the outcome of this study.

Implications

Although this study analyzes research that influenced the past, it is critical to understand how and why decisions were made concerning national education policy to understand the effects in schools today. This analysis shows that although disproportionality continues to occur, the research available to policy makers leading up to the IDEA amendments regarding the issue was flawed in several areas. As such, the information informing these ideas was not the strongest.

As highlighted in the results in this analysis, eight out of the nine studies studied did not directly recommend measures that would directly reduce disproportionality. Rather, the research

suggests a need for more broad sweeping reforms—such as increased parental involvement in special education—as well as acknowledgment that more research incorporating more forms of data and variables was needed to fully explain the issue. However, IDEA 2004 centers its amendments on requiring deliberate efforts to reduce disproportionality. As outlined in a guide to IDEA 2004, Local Education Agencies must work to implement “models of personnel preparation to ensure appropriate placements and services for all students, and to reduce disproportionality in eligibility, placement, and disciplinary actions for minority and limited English proficient children and disseminating information on how to reduce inappropriate racial and ethnic disproportionalities identified under Section 618” (“Disproportionality and overidentification”). The 2004 IDEA amendments, rather than focusing on a better understanding of the issue and implementing changes that improve identification and placement in a more comprehensive way, strayed from the suggestions of research.

Additionally, IDEA fails to express succinctly the definition of “significant disproportionality.” In the provisions, there is no marker of what constitutes a need for LEA intervention. According to the Council for Exceptional Children, significant disproportionality only applies to instances of overrepresentation and numerical findings. However, this cross-section of research demonstrates that disproportionality is not defined by a simple ratio, but rather, a complex set of variables that contribute to the phenomenon. Described earlier in this analysis, the National Research Council report highlighted the extensive list of variables—from low birth weight to parental drug use--that could affect disproportionality. Thus, there is a need to account for these individual variables when studying the issue. Not only does the 2004 IDEA revisions run against the suggestions of research, but also the criteria for disproportionality mirror the weaknesses of the analysis, which relies heavily on descriptive statistics to make

broad claims. As such, the basis of these amendments and requirements for intervention are weak. The lack of not only research with strong quantitative methods to fully understand the issue, but also a definition of what is “significant disproportionality,” shows that the IDEA 2004 amendments regarding minority disproportionality in special education were ill informed.

Over a decade later, more research has explored disproportionality in American schools using methods that are more advanced. In recent years, research has begun to fill the gaps identified in the literature published in the 20 years leading up to IDEA 2004, including the inclusion of individual-level academic achievement data and more rigorous regression models. The federal government also clarified more information about how to classify “significant disproportionality” and incorporate risk ratios into determining disproportionality with a publication addressing questions about IDEA Part B published in March 2017. These changes show that work in the area of disproportionality is expanding and moving towards a more comprehensive view.

However, as the United States moves towards a reauthorization of IDEA or expansion of federal legislation in education, legislators should look to the faults in the 2004 reauthorization to better serve students. Even as research continues to implement more sophisticated methods, it is critical for lawmakers to evaluate the validity and strength of research before allowing it to inform decisions that affect students. As this synthesis shows, the empirical research that was available around the time of IDEA 2004 lacked essential elements and sophistication needed to best explain a complex issue; however, legislation confidently moved forward with reforms. The results of this synthesis indicate that the 2004 amendments may not have been properly informed, and as such, the direction of policy regarding disproportionality should be revisited

and refined moving forward to best reflect what is known—and not known—about the phenomenon.

As this study shows, policymakers need to be critical of research that examines disproportionality and look for studies that account for the complex socioeconomic thread that are sewn into the problem. Without accounting for other explanations for the disparities, policymakers may be exacerbating racial disparities in disability identification, including by limiting access to specialized services by students of color with disabilities. As such, students of every race may not receive the most appropriate education for their needs. With reauthorization on the horizon, lawmakers and researchers should learn from the weaknesses of the past and work to inform the best possible changes to provide for all students.

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Appendix A

Tables and Graphs

Table 1 Types of Analysis

Least Square Regression	Logistic Regression	Ordinary Least Squares Regression	ANOVA
Hosp, John L; Reschly, Daniel J (2004)	Oswald, Donald P; Coutinho, Martha J; Best, Al M; Nguyen, Nu. (2002)	Eitle (2002)	Zhang, Dalun; Katsiyannis, Antonis (2004)
Oswald, Donald P; Coutinho, Martha J; Best, Al M; Singh, Nirbhay N (1999)	Coutinho, Martha J; Oswald, Donald P; Best, Al M, Forness, Steven R (2002)		Artiles, Alfredo J; Aguirre-Muñoz, Zenaida; Abedi, Jamal (1998)
	Oswald, D. P., Coutinho, M. J., Best, Al. M., & Nguyen, N. (2001)		Hosp, John L; Reschly, Daniel J (2002)

Table 2 Type of Disability Analyzed

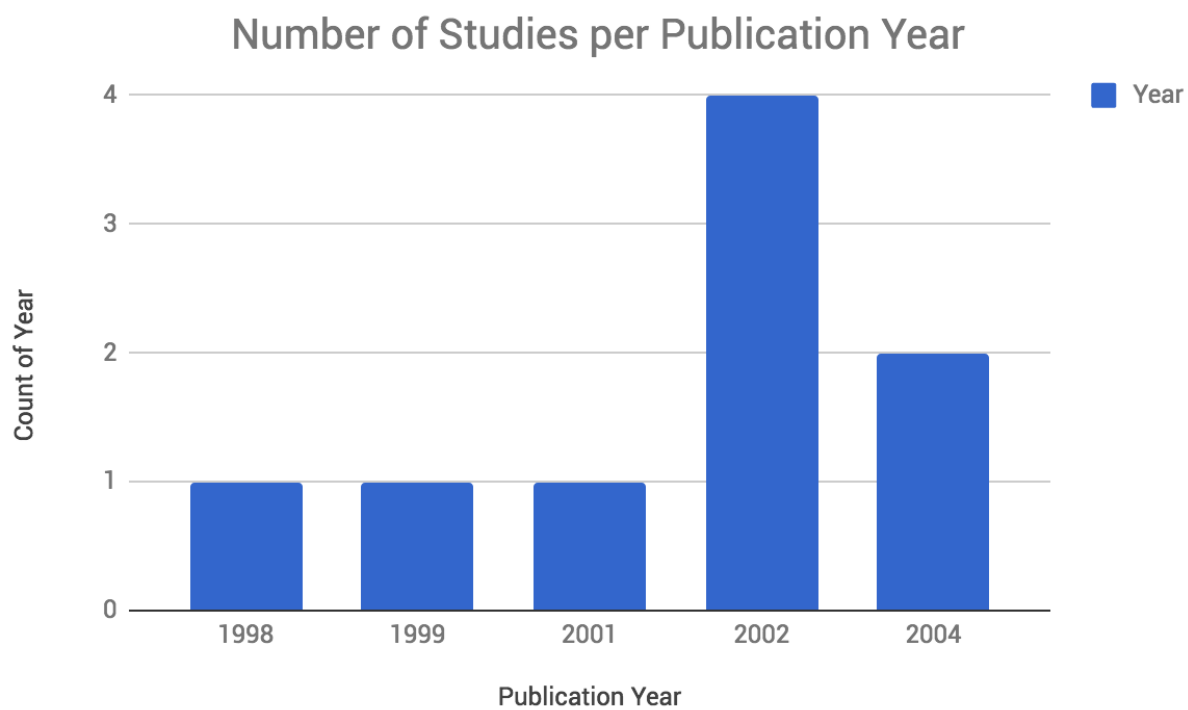
Type of Disability	
Learning Disability (LD)	<p>Hosp, John L; Reschly, Daniel J (2002)</p> <p>Artiles, Alfredo J; Aguirre-Muñoz, Zenaida; Abedi, Jamal (1998)</p> <p>Coutinho, Martha J; Oswald, Donald P; Best, Al M (2002)</p>
Emotional Disturbance (ED)	Oswald, Donald P; Coutinho, Martha J; Best, Al M; Forness, Steven R (2002)
Mentally Retarded/Intellectual Disability	<p>Eitle, Tamela M (2002)</p> <p>Oswald, D. P., Coutinho, M. J., Best, Al. M., & Nguyen, N. (2001)</p>
Multiple Types of Disabilities Analyzed	<p>Zhang, Dalun; Katsiyannis, Antonis (2002)</p> <p>Hosp, John L; Reschly, Daniel J (2004)</p> <p>Oswald, Donald P; Coutinho, Martha J; Best, Al M; Singh, Nirbhay N (1999)</p>

Table 3 Types of Data Analyzed

Data Used	
National Data - Single Source	Artiles, Alfredo J; Aguirre-Muñoz, Zenaida; Abedi, Jamal (1998)
National Data - Multiple Sources	Eitle (2002) Zhang, Dalun; Katsiyannis, Antonis (2004) Oswald, Donald P; Coutinho, Martha J; Best, Al M; Singh, Nirbhay N (1999) Oswald, Donald P; Coutinho, Martha J; Best, Al M; Nguyen, Nu. (2002) Oswald, D. P., Coutinho, M. J., Best, Al. M., & Nguyen, N. (2001) Oswald, Donald P; Coutinho, Martha J; Best, Al M; Nguyen, Nu; Forness, Steven R (2002)
District Data	Hosp, John L; Reschly, Daniel J (2002)
National Data + District Data	Hosp, John L; Reschly, Daniel J (2004)

Table 4 Measures of Disproportionality

Study	Measures of Disproportionality
Hosp, John L; Reschly, Daniel J (2002)	1/6
Artiles, Alfredo J; Aguirre-Muñoz, Zenaida; Abedi, Jamal (1998)	1/1
Coutinho, Martha J; Oswald, Donald P; Best, Al M (2002)	5/10
Oswald, Donald P; Coutinho, Martha J; Best, Al M; Forness, Steven R (2002)	5/10
Eitle, Tamela M (2002)	1/1
Oswald, D. P., Coutinho, M. J., Best, Al. M., & Nguyen, N. (2001)	4/10
Zhang, Dalun; Katsiyannis, Antonis (2002)	5/5
Hosp, John L; Reschly, Daniel J (2004)	3/3
Oswald, Donald P; Coutinho, Martha J; Best, Al M; Singh, Nirbhay N (1999)	1/1

Figure 1 Studies By Year

ACADEMIC VITA

Caitlin Kushnir
cehkushnir@gmail.com

EDUCATION

THE PENNSYLVANIA STATE UNIVERSITY

University Park, PA

Graduation: May 2018

Masters of Arts in Educational Theory and Policy

Bachelors of Science in Education and Public Policy

- Schreyer Honors College and Integrated Undergraduate-Graduate Student

SCHREYER HONORS COLLEGE SIGNATURE TRAVEL PROGRAM IN INDIA

Shri Ram College of Commerce, Fergusson College, Tamarind Tree Primary School, and IIS University

July 2016

- Four-week immersion trip in New Delhi, Dahanu, Pune, and Jaipur, India
- Collaborated on comparative culture projects with students and educators and presented at several universities

THESIS

Title: Informing the Change: A Best-Evidence Synthesis of Minority Disproportionality in Special Education from 1984-2004

Thesis Supervisor: Dr. Paul Morgan, Professor of Education

EXPERIENCE

PENN STATE DIVISION OF DEVELOPMENT AND ALUMNI RELATIONS

State College, PA

May 2017-May 2018

Schreyer Honors College Intern

- Produced annual giving solicitation materials for college fundraising efforts including video, letter and email appeals
- Identified and established contacts with major gift prospects, and helped solicit over \$400,000 dollars for scholarship support
- Spearheaded the student philanthropy initiative within the college by working extensively with administrators and student leaders

- Created transition materials regarding Schreyer Honors College board leaders for the incoming Dean

STATE REPRESENTATIVE MADELEINE DEAN

Abington, PA

May 2016-August 2016

Legislative Intern

- Conducted research and contributed studies and letters about various state issues
- Oversaw constituent casework and assisted in district outreach

PENN STATE DIVISION OF DEVELOPMENT AND ALUMNI RELATIONS

State College, PA

September 2015-December 2016

Development Representative – Telefund Caller

- Raised over \$11,000 on behalf of 19 Penn State campuses and the Milton S. Hershey Medical Center

PENN STATE UNIVERSITY – DEPARTMENT OF EDUCATION THEORY AND POLICY

State College, PA

March 2016-April 2016

Research Assistant

- Facilitated group deliberations and assisted with research design for the study of deliberation evaluation

INVOLVEMENT_____

SPRINGFIELD: PENN STATE DANCE MARATHON ORGANIZATION

State College, PA

August 2014 – May 2018

THON 2018 Donor and Alumni Relations Chair

- Created fundraising materials such as solicitation letters, corporate donation inserts, and media-based campaigns.
- Oversaw the corporate solicitations and third-party fundraisers
- Lead alumni relations initiatives and acts as the liaison between Springfield and Springfield's Alumni Interest Group
- positions efforts contributed over \$99,000 to organization's \$168,078 total.

THON 2017 Communications Chair

- Oversaw social media, press requests and organization's website.

- Implemented media-based fundraising campaigns, which added to our \$192,883.78 contribution to Four Diamonds.
- Managed merchandise orders and internal communication (weekly emails, meetings, reservations, etc.) for 200+ members.

PENN STATE DANCE MARATHON

State College. PA

September 2017-February 2018

Donor and Alumni Relations: Development Captain

- Created solicitation and stewardship materials for childhood cancer research and treatment at Penn State Children’s Hospital
- Acted as liaison for 40+ Independent Dancer Couples to support and inform their fundraising efforts

AWARDS AND HONORS

- Dean’s List (2014-2018)
- Freshman President’s Award (2015)
- President Sparks Award (2016)
- Academic Excellence Scholarship (2014-2018)
- Louise E. Stethers Scholarship in Education (2014-2018)
- Road to THON Diamond of Courage Award (2018)
- THON 2018 Dancer (2018)
- Spring 2018 Education and Public Policy Student Marshal (2018)