**Research Statement**

My primary objective in research is to contribute to developing effective language and literacy assessment and instructional practices for children from minority language backgrounds being educated in the United States. There is a relative dearth of research focused on children who are English learners (ELs) in comparison to that focused on their monolingual peers. As the number of children who speak a language other than English at home increases in the U.S., research guiding educational practice for these children has become increasingly critical for educators and service providers. ELs are over-represented among children reading at below-basic levels (Kena et al., 2016), and exhibit greater high school dropout rates compared to monolingual children (Huang, Haas, Zhu, & Tran, 2016). There is therefore critical need for research conducted to identify strategies to improve these children’s literacy and academic achievement.

I have started to address this overall objective through two intertwined strands of work. First, my training in quantitative research methodology and statistics has fostered my pursuit of rigor in reading research. Methodology and statistics can impact results and conclusions powerfully (pun intended). In the What Works Clearinghouse (WWC) archive of studies meeting methodological design standards for causal inference, there are only 17 studies in the English Learners topic area that meet WWC standards with or without reservations. In contrast, over 90 studies meet WWC standards with or without reservations in the Early Childhood topic area. This disparity illustrates the need for rigorous research focused on EL children, and reflects a pattern that is observable in other areas of research. My research work has been conducted in pursuit of high-quality methodology and analysis, within the overall content area of assessment and intervention to support the language and literacy development of ELs.

The second strand of my work deals with translating research to practice. The diversity of methodological and analytic approaches found in research, combined with the increasing emphasis on large data sets, randomization, and generalizability among funding agencies for educational research (Ioannidis, 2005), has generated a need for researchers to improve the clarity of their work and to broaden their analytic skill sets. Through continuing education and clear research-to-practice publications, researchers can help expand the impact of research findings on everyday practice and limit the risk of inaccurate interpretation of their work (Sharpe, 2013). I am committed to contributing to creating more transparency in research and to assisting others in acquiring the tools to evaluate more complex statistical models critically.

***Strand One: Rigorous Methodology & Statistics to Assess and Educate English Learners***

At the beginning of my doctoral studies, I had the opportunity to work on a developmental research grant funded by the Institute of Education Science. The Goal 2 grant, “Project BLOOM”, was funded in 2013 to develop and test the impact of a new intervention program. I was involved in the creation, testing, and revision of the program, which was designed to improve the English vocabulary of Spanish-speaking ELs. Results from the final randomized controlled trial experiment revealed positive proximal and distal impacts on the ELs’ receptive vocabulary in English. The resulting paper is in revision (Wood, Fitton, Petscher, Rodriguez, Sunderman, & Lim, in-revision). In addition to learning about data management, building relationships with schools, and evaluating intervention efficacy, I participated in multiple sub-projects focused on the language and literacy development of Spanish-speaking ELs. These included a paper examining the relation between the reported home literacy practices of Spanish-speaking families and children’s performance on language and literacy assessments in kindergarten and first grade (Wood, Fitton, & Rodriguez, accepted). I conducted the data analyses for this paper. We found that more active engagement in home literacy instruction positively associated with children’s bilingual language skills, as measured by the *Bilingual English-Spanish Assessment* (BESA; Peña et al., 2014). This finding suggests that increasing families’ use of home literacy practices may help improve young children’s language skills. Following up this work, I conducted the analyses and directed the work on a paper examining the psychometrics of the sentence repetition subtests of the BESA (Fitton, Hoge, Wood, & Petscher, in preparation). The paper is a report of the dimensionality and item functioning of the English and Spanish versions of the sentence repetition subtest. Because the measure’s internal structure was not thoroughly vetted prior to its publication, our findings that the measure’s structure is best represented by a multidimensional structure offer information useful to practitioners using the BESA. Instead of using a simple sum score for each subtest, our findings suggest that practitioners can learn more about children’s abilities by evaluating which parts of speech (e.g., nouns, verbs) are repeated correctly or incorrectly.

Outside of Project BLOOM, I extended my work focused on how methodology and statistics impact findings to other populations. I began one paper under Dr. Ramonda Horton-Ikard’s mentorship to examine children’s use of features of African American English in their written language. Prior work has suggested that there is a negative relation between children’s use of grammatical features of African American English in their writing and their reading achievement (Gatlin & Wanzek, 2015). However, few studies have examined this relation while controlling for outside influencing factors. Often, studies only include children’s African American English and their socioeconomic status as predictors of reading achievement. My coauthors and I included an additional predictor: general grammatical errors. With this predictor included in the model, African American English use was no longer a unique predictor of reading. This finding suggests that educators may focus on more intense grammatical instruction in general to boost children’s reading ability, rather than providing dialect-specific grammatical instruction (Fitton, Wood, Hart, & Schatschneider, in revision).

I recently submitted a meta-analysis, which my coauthors and I conducted to evaluate the impact of shared book reading on ELs’ English language and literacy skills. Upon identifying and coding articles for our analysis, however, we encountered significant methodological limitations within the included papers that affected the effect size estimates we obtained. Consequently, we were unable to accomplish one of the primary goals of the project. We had intended to identify factors that moderate children’s outcomes, but the methodology within the included studies called into question the validity of the many of the papers’ findings. Factors such as the use of within- versus between-group comparisons, random assignment, and the type of outcome measure used yielded notably different results. In our recently submitted paper, we address these limitations and recommend increased use of random assignment and careful selection of measures used to assess child outcomes (Fitton, McIlraith, & Wood, under review).

My dissertation work has been conducted with similar attention to methodology. My project is designed to examine how Spanish-speaking ELs recognize words spoken in English. I was fortunate to receive two scholarships funding this project through the American Speech-Language-Hearing Foundation and the Council of Academic Programs in Communication Sciences & Disorders. Using eye-tracking in a visual world paradigm, I am exploring how ELs use their English phonology, Spanish phonology, and semantic knowledge to identify words spoken in English. Preliminary results indicate that there are differences between ELs and monolinguals in how they process words, and that ELs rely on both their English and Spanish skills when listening in English. To analyze the complex, multilevel data produced during eye tracking, I am applying hierarchical linear modeling (HLM). Although traditional approaches generally have relied on ANOVA to test participants’ eye movements toward images of interest, HLM more accurately represents the structure of the data. It allows for the inclusion of all the data points available for each child, modeling of trial-specific characteristics, and testing of child-level predictors. I completed data collection in July 2017 and plan to defend my dissertation in February, 2018.

***Strand Two: Critical Evaluation & Translation of Research to Practice***

In my second strand of work, I wrote two papers focused on the clinical application of empirical research. The purpose of the first was to present evidence-based strategies for facilitating English vocabulary development in young ELs (Fitton, Bustamante, Wofford, Brown, Gabas, & Wood, 2016). In this critical review, my co-authors and I synthesized the literature into five recommendations: (1) leverage vocabulary knowledge in the native language; (2) teach comprehension monitoring; (3) embed instruction in reading; (4) build morphological awareness; and (5) collaborate with other educators. We included concrete examples of how service providers could apply each of these recommendations. The second clinical paper was completed to compare two practical methods for evaluating the English grammatical development of ELs (Fitton, Wofford, Bustamante, De Novi, Nuñez, & Wood, 2017). Through both a literature review and a small sample (*n* = 18) comparison of results obtained from each assessment approach, we illustrated advantages and disadvantages of each approach. We recommended that educators consider the purpose of the assessment when selecting a measurement tool.

I also contributed to projects intended to enhance researchers’ knowledge and encourage practitioners to consider critically methodology and statistics in consuming research. I participated in writing a paper intended to illustrate the need for increased attention to appropriate statistical modeling in speech-language pathology research (Wood, McIlraith, & Fitton, 2016). My co-authors and I compared the methodological and statistical approaches used in the publications of four academic journals of speech-language pathology to those used in six academic journals of language and literacy research. We found that the speech-language pathology journals generally had smaller sample sizes and employed fewer advanced statistical models (e.g., hierarchical linear modeling, structural equation modeling) than the journals not specifically focused on speech-language pathology. The results suggest that there is need for continuing education and emphasis on statistical training for speech-language pathology researchers, particularly related to matching the statistical approach to researchers’ objectives and research questions.

I have led two presentations focused on methodology and statistics and will be participating in two presentations that were accepted for the 2017 ASHA convention. The first presentation project, conducted in conjunction with the IES-funded Goal 2 grant, addressed fidelity in intervention research (Fitton, Mellen, & Wood, 2015). Spurred from the need to increase accountability among research assistants and demonstrate the efficacy of the intervention program, I trained the assistants employing a multiple-baseline design. I found that, after providing training that included an overview of the grant and its objectives, group identification of challenges to intervention implementation, and student-guided problem-solving, the students exhibited notably increased fidelity of implementation. The second presentation project, which explicitly addressed selection of appropriate methodology and understanding advanced statistical modeling, was delivered as a one-hour oral seminar (Fitton, McIlraith, Wood, Diehm, Brown, & Adlof, 2016). We discussed methodological approaches, such regression discontinuity designs, for improving the internal validity of intervention research when random assignment is not feasible. We also provided an overview of structural equation modeling and hierarchical linear modeling for clinicians and researchers new to these techniques. For the 2017 ASHA convention, this original oral seminar was divided into two sections to allow for more in-depth education aimed at methodological design (McIlraith, Fitton, Hooker, Brown, & Hogan, 2017) and statistical analyses (Fitton, McIlraith, Hooker, Sparapani, Wood, & Adlof, 2017) appropriate for the intended research question.

***Future Directions***

Moving forward, I am continuing to collaborate with my peers to create more educational resources for both fellow researchers and practitioners, with the end goal of bridging the gap between research and practice. I was also recently invited to serve as the primary statistical consultant in developing an Arabic orthographic processing measure and as the supporting consultant in evaluating overall reading development in Arabic with Dr. Sana Tibi. This line of work fits well with my interest in developing valid assessment approaches for minority language speakers in the United States, and will be beneficial as I continue to develop my knowledge of psychometrics. In addition to this newer area of work, I am interested in deeper exploration of the specific factors influencing ELs’ reading and general academic achievement in U.S. classrooms. Much previous work, including Project BLOOM, has revealed that improving ELs’ outcomes is possible. I hope to examine which features of instructional practice are essential to facilitate growth. This work is essential to inform the continued development of educational programs for ELs. It is my plan to submit a K series (Career Development) grant to the National Institutes of Health in pursuit of this goal to measure ELs’ bilingual language development over time, and to begin identifying malleable factors predicting reading achievement. I believe that my experience, desire to continue learning, and two strands of work interweave well to maximize my potential to assist others in applying research to practice and to improve the state of education in the United States.