**Personal, Background, and Future Goals Statement**

When I graduated from high school, I knew a few things: that the economy, according to the political pundits squabbling on TV, consisted of bulls, bears, and the current state of the DOW; that I was fascinated with psychology and human decision making; and that I had an aptitude for math, but I couldn’t picture what I could do with it. When I graduated from the University of Maryland (UMD) I knew a few more things: that economics combines all aspects of psychology and math that I love, that economic research is valuable, and I want to contribute to the field by identifying new and innovative research methods and by sharing economics with as many people as possible through creative data visualizations and interactive mediums. Economics is my passion because it combines my interests in human behavior and math, but I nearly didn’t find it. I started college as a studio art major, and only added economics during my sophomore year; sometimes I wonder where I would be if I had been exposed to economics sooner. I consider it my responsibility now and throughout the rest of my career to find and inspire the future generations of economists. An Economics Ph.D. and a research career will empower me to innovate with previously unconsidered data sources and engage with a broad audience in the economics community and beyond.

**Previous Research:** The Act of Settlement of 1701 gave parliament the sole right to remove judges in order to reduce the influence of monarchs. However, the Act did not apply to all judges during the 18th century. This created a natural experiment which allows measurement of the effect of judicial tenure on judicial performance to further understand the evolution of judicial institutions. As Dr. Peter Murrell’s research assistant at UMD, I collected biographical data on judges and tackled challenges including common and, as a result, hard to track names, misspellings, and indecipherable handwritten documents. I identified patterns in missing data and proposed imputations allowing for increased data utilization. I was exposed to the research process from start to finish, the challenge of data preprocessing, and the creativity that sometimes must be employed in research. We found that judicial tenure had a strong negative effect on the quality of decisions[[1]](#footnote-1). Interestingly, although the Act of Settlement is widely regarded as the foundation of judicial independence today, previous research has shown that tenure in modern courts increases the quality of decisions, possibly indicating a fundamental shift in judicial systems[[2]](#footnote-2). Through this research I learned some of the best practices in empirical research that I continue to build upon, but more importantly it made me aware of the diverse subfields of economics and inspired me to discover my own passion.

As a Quantitative Analyst at Fannie Mae, I studied the role of unemployment in mortgage default models. The “double-trigger” theory states that negative equity combined with a negative income shock, such as job loss, are an impetus for default[[3]](#footnote-3). However, even at Fannie Mae, we often do not have borrower-level employment data. When reviewing our current models, I found aggregate unemployment metrics at varying levels of granularity. This poses an interesting question: is aggregate unemployment a reasonable proxy for individual employment status? To answer this, I first turned to a paper on unemployment and unobserved credit risk by Gyourko and Tracy[[4]](#footnote-4). They found that individual unemployment is an important risk factor, but aggregate unemployment metrics are a poor proxy leading to under-estimation of risk. Under my mentor Joe Mattey, I learned techniques to conduct and document a literature review. I tested including/excluding unemployment in several default models and found for complex models with additional macroeconomic indicators the paper’s findings were confirmed. However, for models that had limited or no macroeconomic variables, the addition of unemployment provided a performance boost, indicating that it might need to be included as a nuisance factor. This research has informed the modeling process at Fannie Mae, particularly around the incorporation of economic risk factors. Through this research I developed skills in rigorous testing of various model types, complex coding, and the best practices for efficiently handling the storage and computational concerns associated with big data. I will utilize these skills to efficiently analyze my data and to assist my peers during my graduate studies, and to explore interactive methods of displaying economic research throughout my career.

**Intellectual Merit:** In the spring of 2018, I graduated with two degrees, a Bachelor of Science in Economics and a Bachelor of Arts in Studio Art, both magna cum laude. While these two disciplines may seem diametrically opposed, I’ve found that fundamentally they both seek to unravel and make sense of the complicated relationships of the world around us. In my current role as a Quantitative Analyst at Fannie Mae, I have used my design skills to take data and use it to not just explain but to tell a story. The lessons in time management and the process of creative problem solving I learned in art find applications in my often complex and challenging economics work; being an artist has made me a more resilient economics student and researcher.

I’ve accumulated leadership experience and technical skills in coding, data visualization, and modeling through my internships and research experiences that I will further build on during my career. At the FDIC and NASA Goddard, I led projects and worked with data analysts to design effective and interactive data displays, and to understand economic forces at work in these two very different professional settings. During my senior year at Maryland, I was recognized by the Dean of my college as a senior scholar for my strong academic performance throughout my undergraduate coursework. I was also elected to membership in Phi Beta Kappa based on my academic achievement in my interdisciplinary studies.

**Broader Impacts:** Through the Economics Association (EAM), I consistently engaged with the economics community on campus at Maryland. As the Director of Tutoring, I recruited and prepared 6 of my peers to serve as tutors and lead tutoring sessions for over 500 students in the introductory economics courses. As Vice President, I continued tutoring and planned several career exploration events with recruiters and previous graduates from UMD. I’m most proud of our Maryland Day event, during which I taught kids and adults alike about the power of risk aversion in a coin toss lottery. I want to continue to foster and build on expanded engagement with basic economic theory and relevant research findings in my career as a research economist.

My involvement on campus continued with the Promoting Achievement and Diversity in Economics (PADE) Program run by Dr. Jessica Goldberg. The program supports students from underrepresented groups in economics to encourage diversity in the field. Through discussions on behavioral economics papers with my graduate student mentor, I enhanced my ability to digest complex information. I was also able to give back to the program by assisting with peer tutoring for econometrics courses. Since graduating, I’ve begun providing career guidance and shadowing opportunities to current participants and other economics students who are interested in risk management and mortgage finance. The community that PADE created has helped me navigate my first job and explore graduate school options, particularly because Dr. Goldberg’s leadership has underscored that women like myself can succeed in the academic world of economics. I want to help foster communities like PADE for undergraduate and graduate students alike and eventually become an inspiration for young women.

Since graduating, my engagement with the community has shifted in focus. I have continued to take classes in order to build my math skills, which has also allowed me to continue to tutor and mentor my fellow students. With one of Fannie Mae’s employee resource groups, I planned a graduate school information event tailored to young professionals who are considering furthering their education. Through Fannie Mae, I also started volunteering with Friendship Place, a nonprofit providing housing and educational services to the homeless in Washington DC.

**Future Goals:** My undergraduate professors are why I began considering pursuing a Ph.D.; however, it was my professional experience at Fannie Mae that cemented my plans. Through my engagement with data analysts and economists across the financial services industry, I realized that I crave a deeper understanding of economics. To become a leader in research, I will need the training and tools a Ph.D. in Economics provides.

In graduate school, I hope to develop skills in quantitative research methodology and economic theory. I hope to not only do compelling research and publish the results, but to also expand the reach of economic research through creative and accessible content. Utilizing my background in coding and design, I endeavor to turn my future research into digestible, interactive, and fun experiences so people inside and out of the economics community can engage with academic research. I also hope to develop myself as a teacher, mentor, and community leader through volunteering, conferences, and continuous dialogue with my peers. Teaching and mentoring undergraduate students will also be an invaluable part of my graduate experience that will prepare me to be an effective professor. As a graduate student I endeavor to inspire undergraduate students to also pursue an Economics Ph.D.

My post graduate school goal is to work as a professor teaching, mentoring, and performing research that can drive program and policy design. I also want to design a course that integrates data visualization and a hands-on coding experience into the typical econometric framework to enhance students’ skills in storytelling with data. I intend to build a program like PADE to help increase diversity in economics, and I hope that young women can look up to me and feel that they are welcome in the economics community.

**Conclusion:** Steve Jobs once said “you can’t connect the dots looking forward; you can only connect them looking backwards. So, you have to trust that the dots will somehow connect in your future.” I am lucky that my dots connected and that I found my passion. As I move forward in my career, I want to make sure that I am helping to connect the dots for others wherever I can.

1. Murrell, Peter, The Independence of Judges Reduced Legal Development in England, 1600-1800 (October 4, 2018). Available at SSRN: <https://ssrn.com/abstract=3260739> [↑](#footnote-ref-1)
2. Elliott Ash and W. Bentley MacLeod, "Intrinsic Motivation in Public Service: Theory and Evidence from State Supreme Courts," The Journal of Law and Economics 58, no. 4 (November 2015): 863-913. [↑](#footnote-ref-2)
3. Foote, Christopher, Kristopher Gerardi, and Paul Willen, “Negative Equity and Foreclosure: Theory and Evidence,” Journal of Urban Economics, 2008, 64 (2), 234-245 [↑](#footnote-ref-3)
4. Gyourko, J., & Tracy, J. (2014). Reconciling theory and empirics on the role of unemployment in mortgage default. Journal of Urban Economics, 80, 87–96. doi: 10.1016/j.jue.2013.10.005 [↑](#footnote-ref-4)