National Institute of Standards March 17, 2025
Professional Research Experience Program
Statistical Engineering Division

To whom it may concern,

My name is Suzanne Thornton and I am writing to apply for the Sr. Research Data Analyst position (117379). Over the last year, I have enjoyed working as an affiliate of the National Institute for Standards of Technology (NIST) and collaborating on statistical research with the Statistical Engineering Division. I transitioned into this role after spending a few years teaching college-level statistics at a small liberal arts college and finding that I am most motivated and content when I can apply statistical theory and programming to solve real-world problems. I am especially eager to foster a career of practice that is oriented towards contributions to public health.

I began to apply my technical skills as a graduate student where I collaborated with a doctor from the Robert Wood Johnson hospital to develop a predictive model for drug-resistant epilepsy. As the sole statistical consultant on this project, I was responsible for data cleaning and exploration, model building and evaluation, and drawing proper conclusions from the data and model. This collaborative experience in developing data-driven solutions to a pressing medical issue resulted in a publication in *Neurology*. After graduating, I published my dissertation research on an advanced computational inference technique called approximate confidence distribution computing while teaching at Swarthmore College. A NIST, I have enjoyed the opportunity to work on scientific problems related to the analysis of high precision data. Currently, I am constructing and evaluating a novel Bayesian measurement error model to more accurately represent the relationship between nanoparticle size and loading. I am also collaborating with an interdisciplinary group of statisticians and clock scientists on establishing guidelines for the analysis of atomic clock data.

While serving in educational roles, I strive to make my lessons accessible and to teach statistical practice in particular as a language for understanding science that works best when it is used responsibly and ethically. All of my prior course content is publicly available on my personal website. As a statistical researcher, I have several technical publications involving theoretical and computational statistical developments as well as many non-technical publications on issues relevant to my discipline. I am a skilled statistical programer and am experienced with grant writing and managing/mentoring small groups of people from different backgrounds.

My proficiencies in statistics and as a leader have been recognized in different ways. Most recently, two internal NIST Building the Future grants were awarded to me and my co-authors for an exploration into standards for deepfake detection and for advancing statistical methods in clock metrology. While at Swarthmore, I was nominated by the American Statistical Association to serve on the National Advisory Committee to the US Census. In 2020, I was selected by the president of the American Statistical Association (ASA) to lead a working group on LGBTQ+ inclusion within the discipline. After this experience, I served on the ASA's LGBTQ+ Advocacy Committee and this year, I was proud to take on the role of committee chair. My priorities as a leader in these positions have been to foster an inclusive, welcoming environment where people feel empowered to contribute their perspectives and to explore their curiosity and their passions. My most enjoyable work experiences thus far have been in interdisciplinary team settings where a diverse group of individuals work together towards shared goals. I have received positive feedback from these endeavors, not the

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least of which was overwhelmingly positive student feedback in the Spring semester of 2020, when our college courses abruptly switched to a virtual format. As an instructor, I also developed coursework that integrated the American Statistical Association's Guidelines for Ethical Practice and have several publications on ethical considerations for data collection and analysis.

I am excited about the opportunity to continue to expand my career in applying statistical tools to the important problems in public health. Please let me know if you have any additional questions for me and feel free to view my professional website (link below) for additional information. Thank you for your time and consideration.

Sincerely,

Suzanne Thornton

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