

UNCG REU Personal Statement

Peyton Jackson

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My name is Peyton Jackson and I am an applied mathematics and computer science student at Columbia University. I have a deep love for mathematics, where I most enjoy the structure and understanding that follow from given properties and the application of logic. Because I attended a STEM-focused high school, I was able to develop a wider mathematical and research background than most students in my standing.

Of this coursework and these research experiences, one especially meaningful class for me was graph theory. It was both my first post-calculus and proof-based class, and the teacher, the late Dr. Avineri, was an exceptionally special influence in my mathematical development. When I was offered a position to work on a project with Dr. Nicholas Cook, I brought with me my interest in graph theory from Dr. Avineri's class.

With Dr. Cook, I pursued a project on large deviations of the Fréchet mean, and, applying my past experience, chose to work in “graph theoretic metric spaces” (spaces composed of a graph). Ideas that we did not get to, such as considering spaces with positive and negative curvature, are closely related to my project of interest at UNCG, and so I believe that my prior work with Dr. Cook aligns well with the scope of my target project, topological analysis of spatial data. I was also able to meet with Dr. Weighill to discuss the project (much gratitude to him for his availability and kindness), and, in addition to seeing connections to my previous project, was introduced to many new intriguing ideas.

Participating in the UNCG REU would give me valuable experience as I work towards my long term goal of pursuing a career in academia. I would be very grateful and excited to have a place at UNCG this summer with Dr. Weighill.