Personal Statement
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Application to *insert name here* REU

Regardless of one's feelings towards spiders, one must admit that elaborate spider webs possess a certain beauty to them. In viewing mathematics as a colossal spider web, what excites me is discovering those hidden threads which are in fact as strong as steel. I crave those incredible coincidences which are actually anything but coincidences. Why do conditions that imply a family of analytic functions from a fixed region is normal always seem to imply that a given entire function is constant? Why are nonabelian groups of order a product of two prime powers never simple?

My true mathematical journey started as a junior in high school when I began dual-enrolling in three courses per semester at my local university (the University of South Florida). After completing my first "introduction to proofs" course, I dipped my toes into analysis and algebra. I enjoyed both equally and wished to experience them at the graduate-level, so I went about convincing my county's board of education to allow me to take graduate courses for dual-enrollment. As the graduate-level analysis courses were offered in the mornings, a time during which I was required by law to attend high school every day, I was pushed towards entering the University of South Florida's graduate algebra sequence.

It was during this sequence of courses that I first encountered an assortment of those aforementioned hidden threads. We covered some of these connections, such as the fact that a regular n-gon is constuctible if and only if each of the distinct prime factors of n are either 2 or a Fermat prime; however, other facts like Burnside's pq-theorem were left unaddressed and only mentioned in passing. These threads stuck to my mind like a ..., resurfacing in my thoughts to torment me from time to time and leading me to seek out explanations for myself. Burnside's pq-theorem led me to take a course on representation theory. The link between normal families and the nonexistence of nonconstant entire functions with certain prescribed propertans led me to begin reading Miranda's book on Riemann surfaces. In seeking and understanding these connections for myself, my mathematical taste crystallized into what it is today.

For my first semester at the University of Virginia, the mathematics department gave me the freedom to push myself right out of the gate taking almost an identical courseload to UVA's first-year graduate students.

Moreover, I experienced about another awesome aspect of mathematics: collaborating (and struggling) on tough problems with people who are just as determined and passionate about math as I am. ...

This upcoming semester, I will continue to push myself by again taking the standard courses for UVA's first-year graduate students: algebraic topology, measure theory, and algebra II.