

Philip Schiff

Personal Statement

In my senior year of college, I added a physics major to my academic plan, because I decided that I could not stand a life lived without a deeper understanding of the phenomena that I had begun reading about in *Science News* and books for “laypeople.” As I have learned in the last two years, this deeper understanding is coupled to a constant reminder that the greater part is still yet to be learned. Every problem which I can answer and feel that I could convincingly explain to someone else tantalizes me, because it only leads me to a dozen more that I cannot. The protagonist of *Zen and the Art of Motorcycle Maintenance* found this aspect of scientific inquiry rather distressing; I find myself up all night reading Ashcroft and Mermin.

In acquiring the mathematical background necessary for the study of physics, I have gained a sense of the elegant connections between the branches of mathematics and the physical sciences. I have been slightly surprised to find that the more things I learn, the easier it becomes to remember them, because of their relations. The fundamental ways in which the aspects of mathematics and physics are interconnected inspires an aesthetic appreciation which I wasn't aware of previously, and every discovery fills me with a sense of wonder about what else is out there.

Currently, I am working with a team to build a scanning tunneling microscope. In the course of this project, I have learned a great deal—about STM, condensed matter physics, and myself. This project invites me to solve a number of problems; some of them are engineering issues, others are more theoretical in nature. The completion of the project hinges on answering some of them.

However, I do believe that questions which do not have to be answered in the course of a project ultimately will lend themselves to discussion: “why does that happen?,” and that it is the pursuit of that answer which is the calling of a scientist which attracts me in the first place). I would like the opportunity to find more such answers.