Jason Larkin
2610 Larkins Way Rear, Pittsburgh, PA 15203
412-398-8813
jml37@pitt.edu

STATEMENT OF PURPOSE

Inspiration for learning came into my life at an early age. Though my mother did encourage learning by reading to me and taking me on weekly trips to the library, I also just seemed to have an innate curiosity about the world. I made my way through the various adolescent schools in the advanced classes. Teachers were always encouraging, often recognizing me as one of their best students. This feeling of achievement wasn't always mutual though. Knowledge has a funny way of crystallizing at the right moment. I often felt that my intellectual progress was a hazy mixture of disconnected trains of thought. Call me an overachiever, or maybe a late bloomer. This lack of intellectual cohesiveness would stay with me throughout schooling, all the way to college.

My talents were always diverse. However, in high school creative writing and music was gradually replaced by algebra, trigonometry, and the physical sciences. Nearing college I felt like I was being steered in a direction but didn't know where it was leading. I chose engineering as a major, and eventually mechanical engineering as the focus. This would play to my strengths in math and science, but I felt all along that something was missing. My interest in the classes I was taking waned. We studied the thermodynamics of liquid/vapor mixtures, but we didn't study the Boltzmann distribution. We studied moments of inertia and rigid bodies, but never learned Hamiltonian mechanics. I was feeling intellectually hazy all over again. I grew more and more distant from my daily class work. I had almost completely lost interest in what I was studying.

During this period I found a few internships. One was an IT internship at a bio-technology company called Precision Therapeutics, Inc. They specialized in personalized chemotherapy (based on a cytotoxic assay). The work here taught me about practical things; automation, programming, motion control, and microscopy. But it also taught me an important lesson about the path one's life can take. I worked with a fantastic engineer named Andy Corkan. He was a Chemical Engineering grad school dropout turned automation engineer and programmer (with a little microscopy thrown in). He was a great problem solver, something every engineer should strive to become. The work also reignited my interest in biology, something which had been absent since the early days of high school.

Back in college, I passed my classes (although sometimes not with the best of grades) and neared my senior year of undergraduate study. Then something happened. I was taking Fluid Mechanics with Dr. Anne Robertson (Professor of Mechanical Engineering at the University of Pittsburgh). Her teaching style was refreshing; frank, concise, and always with a sense of intellectual humility and honesty. These were some of the same feelings I had about my own intellectual progression. I had always felt that I was cheating my way through learning. This period galvanized my passion for fundamental and practical knowledge. I began to realize that the stuff I had been learning was useful, things just hadn't crystallized yet. Better still, Dr. Robertson offered an opportunity to perform some undergraduate research. She had an interesting project which studied a biological system (aneurysms) using some of the mechanical knowledge I had been learning for so long. I was able to use Finite Element software to design a flow chamber to mimic the conditions near an arterial bifurcation. It was illuminating practical work. I had found some passion again.

It was after this research with Dr. Robertson that I decided that graduate school was where I wanted to be. My undergraduate performance got me in (barely), but left me without funding. I found work with Dr. Walter Goldburg in the Physics Department at the University of Pittsburgh. He is a physicist and experimentalist in the best sense. Since I started working with him I've been filling in all the gaps of knowledge I've acquired since starting school. Probability, statistical and thermal physics, quantum mechanics, turbulence; all of these subjects were (and are) daily conversations with him as an advisor. I had turned completely around from my early undergraduate days. I've found a new passion to understand the fundamental, and a motivation to apply it to solve problems.

During my MS education I've performed a number of experiments with Dr. Goldburg in turbulence. Thus far the work has yielded 2 papers, one in submission and one in progress. In addition to this primary work, I've assisted on work that has contributed to 2 other papers to be published. I feel fortunate to have worked with him. In addition to taking standard engineering classes like Fluids, Elasticity, Energetics, and Differential Equations, I've been able to take classes in Statistical Thermodynamics, Quantum

Mechanics, Dynamic Systems, and Chaos. My undergraduate studies made me realize how much I needed to know but didn't. My MS studies and work with Dr. Goldburg taught me a great deal, and the experience has shown me the value of graduate education. But it has also reinforced my belief that applied research in engineering is where I want to be. That's why I've decided to pursue a PhD in Mechanical Engineering. My interests have recently turned to computer simulations in bio and nano-technology. I feel confident that I can excel in these fields of study.