I came to MIT to study physics, and have enjoyed my physics work. I also became very involved in computers and their applications. Over the course of my academic career I have been somewhat torn between my interest in physics and my interest in software, as the primary overlap between those fields involves using computers as a tool for physics, with little real focus on the software, theory or interface aspects of computer science.

As a junior, I was fortunate to start work with Neil Gershenfeld in the Physics and Media group, and was pleasantly overwhelmed by what I found. The group not only studied some of the ways that computers are a tool for physics, but many of the ways in which physics can be a tool for computers.

This kinds of research is what I hope to pursue in graduate study at the Media Lab. Specific interests that I have include continuing study of the intrabody signalling system I have worked on as an undergraduate (if warranted, following my thesis work), developing and implementing practical algorithms for self organization of identical entities, obtaining a more general understanding of the interaction between electric fields and arbitrary conductors in those fields, and pursuing possible computational architectures for structuring and using information gathered and distributed by these kinds of technologies.

Upon finding the Physics and Media group I have realized that there are a great many applications and research directions which interest me a great deal, and I genuinely have not yet decided what I want to focus on. I am certain I want to continue research in physics and computing, but beyond that, I cannot honestly specify. The Media Lab seems, to me, the ideal place to explore these areas and find particular areas that fascinate me the most.

While I can't be certain which areas will demand my interest the most, research into technologies needed to develop ubiquitous inconspicuous networked computing systems are of particular interest. Particularly, a few of the topics that I would be interested in pursuing, I mentioned above. First, the communications protocols and encoding strategies, such as those in the intrabody signalling system I have been researching, are very interesting. I hope to examine alternatives and novel approaches to traditional wireless communication. Second, given a large number of computing devices in an environment, there needs to be a strong set of algorithms and strategies for organizing and

structuring communications and other tasks. I am eager to pursue more detailed research into this area. Third, a general understanding of electric fields, its measurement limits and how this can apply to both communication and sensing is valuable. Clearly I will not be able to thoroughly explore all of these avenues, however I believe the Media Lab will give me the opportunity to approach all of them and best determine what most deserves further study.

As for my longer term professional goals, I have a number of thoughts. I was fortunate enough to become involved in the WWW very early (1993), and started a web software company with a number of other MIT students in 1994. I left MIT temporarily, and pursued that for two years. This gave me a taste of entrepeneurship and of the business world. It also helped me realize some of my professional goals. Specifically, I enjoy research and development above other business activities. I enjoy the management, sales, and marketing components of running a business as well, more than I expected, but I realize that research and development activites hold far more interest for me.

Overall, in pursuing graduate study at the Media Lab, I hope to further explore the applications of physics to computing, particularly from an interface and sensor point of view. Beyond that, I aim to identify an area of particular interest and study that rigorously.