Statement of Teaching Philosophy

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In my five years of experience as an assistant professor at an institution with a strong liberal arts tradition, I have had many opportunities to observe teaching excellence. It has been a long-term project of mine to capitalize on these opportunities and adapt accordingly. However, the primary reason that I enjoy teaching comes from within: it gives me daily opportunities to be creative. Great teaching is every bit as much fun, and sometimes as challenging as research.

The Carnegie Foundation tries to formalize this idea with their definition of a "Scholarship of Teaching," but I have never found their definitions of four different types of scholarship to be very compelling. Their attempt to elevate educational publication to the same plane as pure research publication doesn't serve the practice of teaching well. Neither should scholars be apologetic for a love of discipline that transcends the setting in which they study it, nor should they feel incomplete for not publishing their advances in teaching in the literature. Rather, they should use their natural curiosity and creativity to attract students to beautiful ideas because that is an enjoyable thing to do.

Pedagogical seminars are rejuvinating events and good opportunities to interact with respected colleagues I have attended many, but never has a one or two hour period influenced me to make a significant change in the way I teach. It has been much more valuable to join a class and participate in it while observing a master teacher. Through extended observation, I have seen how to make meaningful improvements, and have made them.

Therein lies my chosen program for teaching excellence. I am a great observer, and I have a creative mind. Over the past four years, I have sat through five complete courses in addition to my full teaching load. Two of these courses were taught be recipients of the "Daniels-Danieley Award" for the institution-wide teacher of the year. One of the things I admire greatly about Elon is that this award is truly the most prestigious honor on campus. It typically goes to a long-term faculty member who is reduced to tears by the roaring, standing ovation given by the entire institution. Like all Elon faculty, I would be honored by that award more than just about any other. Unfortunately, my department has been slipping away from the arts and sciences toward professional education, hence this application.

Neither of these Daniels-Danieley teachers of mine were computer scientists. I sat in on their instances of our freshman "Global Experience" course, as I was learning to teach it myself. I saw them try to apply collaborative learning, with mixed results, and I saw the way they respected, listened patiently to, and demonstrated caring for their students, with fantastic results. I learned from them that small, seemingly unimportant changes in my style could dramatically improve the motivation level of my students. For example, I saw small talk used to such wonderful advantage in creating a trusting atmosphere that I now make an extra effort in that regard. I always try to participate in whatever conversation the students are having when I walk into a room. This was not natural for me at first, as I was always anxious to dive into the material, but I am a believer now. The experience has reinforced the obvious, but sometimes overlooked message that great teachers talk *with* their students, not *to* their students.

The other courses I have participated in as a "student" are the first three calculus-based physics courses. I have done this partially to fill holes in my education, partially to gain the respect and confidence of some of my students in an equal relationship (I have taken all of the tests), partially to see how natural science is currently taught, and partially to prepare myself for a study of quantum computers. The experience has made me a more interesting professor. The physics faculty have the advantage of textbooks that are *much* better than ours, and they organize their courses so cleanly and beautifully that I was influenced to change mine.

In my five years at Elon, I have compiled a written record of summaries of all of the courses I have taught, along with all of the teaching experiments I have tried. Some of the most successful of these involve taking advantage of the small class sizes inherent to a liberal arts environment. For example, I have had great success using playing cards and charades to teach data structures and algorithms. Ann Wooten, one of my Daniels-Danieley teachers, refers to this technique in her enclosed letter.

Other experiments have involved simple logistics. For example, I have shown instances in which a straightforward organizational change has coincided with dramatically improved retention. The change is simply to ensure that graded first projects have been returned to CS1 students *before* they take the first examination. It takes some curricular gymnastics and creative project design to implement this idea, but the results have been positive.

I hope that you will have the following questions about me with respect to teaching: Does he really love computer science? Can he communicate clearly? Does he make his courses fun without sacrificing challenge? Does he interact with students all of the time? Does he enjoy working with students on undergraduate research? Has he had success with that? The answer to all of these questions is "yes," and you will not be making a mistake if you hire me.

My objective is simple: I want to be a computer science professor in a stimulating liberal arts environment in which computer science is a first class scientific discipline, and in which science takes clear precedence over application.