Statement of Teaching Philosophy

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February 3, 2024

The academic life is about discovery. We discover many things: new knowledge, the shape of students' future professional lives, shared goals across many disciplines. A university is a community of discovery. In some way or another, we are all here for that creative process of discovery. Participating in such a community of discovery is endlessly exciting to me. These communities have many flavors: classes, research teams, committees, and informal groups of colleagues. Among all these possibilities, when I think about which flavor of academic community makes me happiest, I immediately think of students. Working with students is easily the most gratifying aspect of my job.

The prospect of spending more time on teaching-related work was one of the primary factors that drew me to Potsdam. The emphasis that the institution places on teaching meshes well with my own interests and passion as an academic. It was also refreshing to encounter a university where teaching is not only valued as much as scholarship, teaching *is* scholarship. I feel that I have clarity of purpose in Potsdam. I am here to nurture the professional growth of my students, and to contribute to the mechanisms that support that growth at all levels of the university.

I came to Potsdam with some experience in university teaching. That experience has served me well, but as with all things, new contexts require new solutions. My first year at Potsdam was definitely full of adjustments, in all areas of my job responsibilities, and at many different levels of detail.

I wrote my first teaching philosophy statement over 15 years ago. I invested a great deal of time and care in the crafting of my first statement. I return to that statement at least once a year, and I have been amazed by how little I have changed it over time. That isn't to say that I haven't changed or that my teaching hasn't changed, but I think the steadfastness of the bulk of that statement shows that I understand myself well as a teacher. What follows here is the current version of my statement of teaching philosophy.

> It is the supreme art of the teacher to awaken joy in creative expression and knowledge. – Albert Einstein

I love learning. I love untangling the complex knot of an idea, to discover the simple elegance at its core. I love finding how seemingly disparate concepts are actually interwoven in an amazing and intricate web of point, counterpoint, and many shades in between. In short, I love the joy of discovery that I find in learning. An even greater thrill, for me, is seeing that joy and wonder in the eyes of a student, as concepts and skills come together. As a teacher of Computer Science, I seek to build a framework that fosters the development of student knowledge, skills, and attitudes, so that the joy of discovery might follow.

In my learning experiences as a student, I find that I am most successful in an environment that is simultaneously nurturing and challenging. In this type of environment, the teacher recognizes and respects students as individuals, and seeks to create an inclusive atmosphere that addresses individual differences in identity, learning styles, background, and prior knowledge. But the teacher also challenges the student to outgrow any limitations those differences may impose, and seeks to provide the tools the student needs to achieve that growth. In this framework, teacher and student are collaborators and active participants in the process. Such a partnership encourages a deeper investment in the process by both teacher and student and sets the stage for lifelong learning.

Ultimately, the goal of education is learning how to learn. Skills for lifelong learning are important in any discipline, and they are critically important in a field that changes as rapidly as Computer Science. My goal as a teacher is to connect student experiences in my courses with the ongoing development of general learning skills, science learning skills, and specific Computer Science skills. For example, I want students to synthesize new information to enable them to approach a problem using a variety of strategies,

and to think creatively and independently when choosing the most appropriate strategy for that problem. The specific Computer Science skills that I want students to understand vary with the particular course, but the direction is always toward understanding fundamental concepts that will lead to a strong technical foundation. Common threads through all these contexts are the continual enhancement of communication skills, a growing appreciation of the synergy of diversity, and a realization of responsibility and professional conduct.

I believe that diversity is key to designing classroom activities that will help me meet these goals. I have a much better chance of engaging students when I include discussions, small group problem-solving, in-class labs, and games, than when I rely primarily on traditional lecture. I try to make problem-solving – the joy of discovery – the centerpiece of my classes: I emphasize thinking through a problem, finding connections to other familiar problems, putting together what you know, finding out what you don't know. I think that these ideas can be successfully incorporated at all levels. In introductory undergraduate courses, I focus on activities that emphasize individual student mastery and introduce peer collaboration, while upper level students need more responsibility for knowledge discovery and deeper synthesis of knowledge.

As with classroom activities, I believe that variety is central to good assessments of student learning and effective teaching. I include exams, homework, and programming assignments for all courses and levels, and some form of group work for upper level courses. When feasible, I use a formative approach as well, for least some assignments; for example, I like to have students rework and resubmit programming assignments to correct problems or improve algorithms or coding style. I believe that good exams and assignments should gauge students' mastery of the course material and challenge students to put together what they know, perhaps in a new way. I strongly oppose exams or assignments that place entirely novel demands on students: I think that "trick" problems or assignments that require a particular arcane or obscure piece of programming or mathematical knowledge are inappropriate, and cannot provide a good measure of students' grasp of course content. It is always appropriate to challenge students; it is never appropriate to lay traps for them.

In the end, I believe that my job as a teacher is to do my utmost to give my students the tools they need to succeed. This is not to say that the responsibility for success rests solely on my shoulders: my view of the learning collaboration clearly includes high expectations for my students' contributions to the process. Such learning is hard work; but the essence of that hard work is the joy of knowledge and discovery, and a world of wonder and endless possibilities.