Teaching statement

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Teaching History
I have taught several pre-calculus mathematics courses as well as Calculus I and II in classroom settings, and worked in the departmental tutoring center, assisting students one-on-one. I have also taught precalculus courses through distance delivery, and am developing the Calculus I and II courses for distance delivery.

Classroom Practices
I like to promote group-work and develop student connections within the classroom. My students are frequently at the board working out solutions to challenging problems with their team mates, or trying to invent examples or counter-examples of difficult concepts.

I try to teach with multiple modalities, bringing technology (videos, animations, or real-world applications) into my classes whenever I can. I also try to be aware of the majors and interest areas of my students so I can tailor examples or applications to their fields. I have a strong programming background that lends itself to creating simulations or animations that illustrate concepts without extraneous distracting content.

Finally, I believe the principle responsibility of the classroom teacher (as opposed to a massive online course, self-instruction, or other Internet-based ways of getting the same material) is to form a personal connection with the student in which the student feels that their instructor genuinely cares about their success, and will work to help them get past difficult parts of the material. This means being available outside of class for questions and discussions, and fostering a "we're in this together" classroom atmosphere. I ask students what grades they want to achieve, then communicate with each one personally when their grades begin to dip below this target, correcting this drift as early as possible.
Online Education Experience

I have created a new online system for the Mathematics department at Colorado State University that replaces a paper-based testing system and a book-based self-paced instruction method. The new system delivers online instruction using streaming videos and PDF documents, gives randomized homework assignments and exams, and supports proctored and special-needs testing. The system is completely online and integrated with the University’s systems, and has resulted in increased success rates among students, a much lower incidence of cheating, and increased student satisfaction with the program. In the process of developing this system, I assisted in the construction of several online textbooks, and numerous homework assignments and exams.

Teaching Goals

I would like to continue through the sequence of courses with Calculus 3, Differential Equations, and Linear Algebra, developing distance-ready versions of those courses in the process. I would also like to develop a topics course on geometric methods in differential equations and mechanics, and perhaps a topics course in the mathematics of quantum mechanics and field theory.

Finally, I have appreciated my experience with the local high school teachers and would like to continue with outreach projects in the future.