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### **TEACHING INTERESTS**

I believe that the field of Bioresource Engineering curriculum can be taught in a way to demystify both science and engineering, make it accessible, and demonstrate the aptitude of Bioresource Engineering majors in both life sciences and engineering subjects.

I would design and teach two types of classes. The first type would cover the fundamentals of Bioresource Engineering, where I can draw on my past training and work in plant and soil science (my Master's), basic electrical engineering and basic programming (my PhD courses, thesis and product development work). The second type would be courses where students pool knowledge from various courses to design a process, which they can implement in a project and add to their portfolio. I believe from experience that the fundamentals of engineering can be easily understood and applied if explained correctly and that the quality of instruction that students receive in these classes might shape their future in engineering.

I would design and teach interactive classes. I would use the Harvard mode that I learned about in a professional development class. It involves giving students short time periods in class to derive the equations or principles they're learning instead of passively hearing of them from their instructor. I also learned of a new learning model, pioneered by the Khan academy that posts self-explanatory online videos on various scientific principles. A number of schools have directed their students to watch the relevant video before class, and class time was used to do homework in groups, and ask the instructor questions. By reversing the class – homework model, student performance increased and students easily made up for absences. I plan to create such videos and use that model in classes that I teach.

I also believe that teaching is the best way of learning, and I expect to continuously gain more knowledge in the subjects I teach. I also plan to give students a chance to teach their classmates, as an accelerated learning method.

Regarding my advising method, I would aim to be a career coach as well as research advisor. I will guide my graduate students to internships, and give them professional exposure whenever possible, while they train in my lab. I would also initiate them to do research that solve real life problems, and introduce to stake holders, through focus groups, to help them formulate the problem to be solved, through research.