

## Stephen Bruestle's Teaching Statement

You do not learn to use a hammer by listening to a lecture on the bio-mechanics of the hammer. You learn to use a hammer by pounding in some nails. Students do not learn to use economics by listening and memorizing. Students learn to use economics by experimenting and solving problems. In particular, students learn to use economics by analyzing, discussing, evaluating, and discovering.

I was not a typical college student. In every class, I pushed myself to learn by applying the material I was taught in new ways. Usually this meant applying mathematics and economics to my other courses. For example, I wrote economics and mathematics based poetry for my creative writing classes. I made mathematics based sculptures for my art classes. And I wrote economics based papers for my history classes. This eventually inspired me to create my own undergraduate major in economic history and pursue my PhD in economics.

My desire to share my love of economics inspired me to attempt to become a good economics teacher. Drawing on my own experience as a student, I redesigned my introductory microeconomics courses (Principles of Microeconomics) in 2012 to emphasize the application of microeconomics by including: (1) a series of ten in-class lab experiments and (2) a final project, instead of a final exam.

Charles Holt, an experimental economist at the University of Virginia, has been developing a supplementary textbook designed to get students to discover basic microeconomic concepts on their own through a series of lab experiments. He let me test a draft of this supplement and run the accompanying online experiments in my classes. I used a lab experiment to introduce a new section of the textbook (usually a chapter). For example, in one experiment, students act as buyers and sellers in a commodity market. Each student is given his or her value for buying or cost of selling the good. They submit bids for buying or selling online, which determines the market clearing price. After running an experiment, I had my students write up a lab report and read the accompanying section of the textbook. Then I lectured on the material and have them complete homework problems.

For the final project, I had my students form groups of five. Each group picked one microeconomics topic to research, usually from a list I supplied of suggested topics. Most groups chose to research an industry, like automobiles, airplanes, crime, drugs, health care, telecommunications, or sports. Some chose to research an advanced concept, like spatial economics, auctions, or the tragedy of the commons. Then I would meet with each group and recommend starting material, like good undergraduate textbooks or literature reviews on their topic. With my encouragement and guidance, many groups chose to find additional material on their own. At the end of the semester, each group made a 50 minute presentation on their topic to the class.

I was completely impressed by my students and excited by their learning in the group presentations. They learned and applied advanced concepts, not typically seen in an introductory microeconomics course. Their presentations were clear and straight forward. It seems to me their application of economics in their presentations is real evidence of how they will continue to use economics in their studies and their everyday lives.

Yet I received poor teaching evaluations. In my fall semester course, I added carefully laid out power point presentations, thinking that my lecturing was my problem, but I found that using power point slides induces students to become passive and forces the instructor to follow a rigid framework. When it came time

to teach again this summer (this time an intermediate microeconomics course), it became my purpose to really examine my teaching. I talked with the instructor in our department with the best teaching evaluations for the course: Federico Ciliberto. He let me copy his lecture notes and course material. And I went to the UVa Teaching Resource Center to find out how I could improve.

I had several meetings with the staff of the Teaching Resource Center, who gave me lots of wonderful ideas on how to improve my teaching. They told me that it was not surprised that I received poor teaching evaluations. When several tenured professors tried similar “active learning” techniques, they received similar poor course evaluations. Students are confused and annoyed by a radically different class structure.

Based on their recommendations, I adopted smaller active learning exercises called “change-ups” to break up my lectures. I used several change-ups in my summer teaching. My three favorites are: think-pair-share (pose a question, have the students think or write on this question, then have them share their ideas with a partner, and then with the class), the muddiest point (have students write down the muddiest point from your lecture, and then answer the questions next class or in discussion session), and problem solving (have students solve an example problem in class).

Most people cannot synthesize more than about twenty minutes of lecture at a time. By frequently engaging my students with change-ups, I break up my lectures into smaller manageable chunks and engage my students in applying economics.

Throughout the summer, I am continued to learn and adapt how I teach. Through the Teaching Resource Center, I conducted a mid-semester in-class poll on my teaching techniques and I made improvements to my class based on my results. In addition, the Teaching Resource Center videotaped one of my lectures and I analyzed how I conduct myself in lecture.

At the conclusion of the summer, the Teaching Resource Center introduced me to the “learning-centered” syllabus, a teaching technique that I plan on trying with my next courses. I created my own learning-centered syllabus ([bruestle\\_syllabus.pdf](#)) as an example in a way that reflects my teaching style.

Over the past year at the Federal Housing Finance Agency, I have missed teaching. I have come to realize that I love it too much to give it up. I look forward to continuing to grow as a teacher. I look forward to learning new techniques, keeping what works, and dropping what doesn't. My experiences teaching brings organization, focus, and clarity to my research. Which is why I would love to come teach economics at your institution.