

Teaching Statement

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I love teaching and I believe both the community and I myself will enjoy and benefit from my teaching and mentoring of students and young scientists in Texas Tech University.

I grew up in an environment of teaching and education as my parents are both high school teachers (one in Physics and the other one in Mathematics). Usually, daily conversations in my family were related to schooling and instruction. What inspired me most in a teacher's family is my parents' dedication in exploring the comprehensible ways to teach elusive concepts and their happiness after that.

My teaching career starts from my junior year in college where I taught college physics to high school seniors for their physics Olympiad. Teaching higher-level courses to young students is never an easy job but it indeed facilitated my ability to describe intriguing science with plain language and illustrative examples. Later on, I served as teaching assistant for Solid State Physics I instructed by my undergraduate advisor. In this course, I held problem sessions, graded the homework and exam as well as lead the special topics on latest research. This experience is of great importance to my teaching career as I found bridging the textbook knowledge with the scientific frontiers would largely inspire motivation and passion of my students, especially in the upper-level classes. The students got extremely interested and active when I introduced electronic and mechanical properties of graphene (award the Nobel prize in physics in that year) in the chapter of nanoscale physics. One of them even contacted me and later on joined the graphene project I led in my undergraduate lab.

My teaching experience was not limited to course instruction. From my senior year as an undergraduate, I have been the research mentor for three undergraduate students (at USTC and UC San Diego) and three graduate students (at UT Austin). From my point of view, a good mentor or teacher should deliver not only the professional knowledge but also your passion and love of science to students. The achievability of inspiring your students then working with them and seeing their success later on is one of the main reasons for me to pursue an academic career. I enjoyed a lot when mentoring these students as this process also trained me into a better scholar. When thinking of better ways to explain a concept or demonstrate an experimental technique and listening to their questions, I usually got new aspects of understanding my current research or even came up with new promising ideas. In this sense, I believe a good professor should be committed to excellence in both research and teaching.

Following this vision, I look forward to delivering the professional knowledge to my students and training their critical thinking and problem-solving capability as well as guiding their scientific investigation. I would be happy to teach all fundamental physics courses especially optics and electrodynamics at the undergraduate level and nanotechnology, low-dimensional materials, nanophotonics, near-field optics, metamaterials and plasmonics at the graduate level. My primary goal is to tailor my instruction methods to various students to make sure that they can learn the core scientific knowledge and latest research in a comprehensive way. Furthermore, laboratory exercises and group projects will be carefully designed to ensure the opportunity for students to apply course knowledge to real-world scenarios and scientific research. I would also like to put great efforts in training the writing and presentation skills in my class as I believe the students will benefit from these not only in their scientific career but also in their future life.