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## SUMMARY OF TEACHING PORTFOLIO<sup>1</sup>

### Teaching Philosophy

Learning in the classroom is the result of a compromise between a group of students and a teacher. A compromise to accept challenges, overcome obstacles, and to be creative and innovative. A compromise that is specific to each classroom, allowing it to be unique. During the past four years, I have embraced teaching as a challenging and creative experience.

I strongly believe that learning in the classroom should be pleasant, challenging and respected. I view the role of the teacher as the promoter of such an environment. A teacher serves as a guide, like a *maestro* in an orchestra. From a teacher, it is expected to understand each individual's needs, difficulties, and objectives, and incorporate that in the classroom without unbalancing the group or losing sight of the individual.

Teaching physics is not much different from teaching other subjects. In fact, it is easier. In today's technological society, it should not require much effort to motivate students to understand how their laptops incorporate some of the most fascinating concepts of physics, or how information is transported across the globe, or even how the atmosphere on planet Mars is different from the one on Earth. I regard motivation as the most important condition for a successful learning environment. Once a class gets motivated, learning becomes the natural response to the need of feeding curiosity.

I define my teaching style primarily as a transmissionist. I encourage questions and comments from students, and believe it is important to actively discuss the material with them both inside and outside the classroom. However, I also think it is important to encourage students to take greater responsibility for their own learning. Typically, I start a semester by being very open to questions from students, and as time passes I increase the level of active-engagement strategies.

In class, I like to work the qualitative as well as the quantitative aspects of physics, and bring students to interplay with them. I believe students have a better chance of developing intuition to the kind of problems discussed in

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<sup>1</sup>Teaching Portfolio available for consultation upon request.

physics courses, if they can clearly relate the qualitative and quantitative aspects of physics concepts and problems. Depending on the composition of the class (e.g. science or non-science majors) I can work more one component over the other. In any case, it is important not to lose the sight from the formal aspect of physics, and always discuss its more qualitative aspects.

The time spent in class is very important in the learning process, but the work done outside the classroom is fundamental in the solidification of knowledge. I like to be available to answer questions and discuss concepts, either by having the students coming to my office, or by answering to questions sent by e-mail or posted on discussion boards in the Internet.

Teaching has been a part of my family history for the past two generations. From it, I have inherited the passion of helping others in their learning adventure.

### **Teaching Experience**

As a physics graduate student at the University of North Carolina at Chapel Hill, I taught mechanics and electromagnetism introductory laboratory classes to pre-medical students, and graded a classical mechanics course for graduate students. In 2001, 2003 and 2004 I was selected to serve as a TA trainer. In the coming semester, I will be teaching an intermediate mechanics laboratory course and an electromagnetism recitation class, as well as serving as a grader to an undergraduate chaos theory course.

### **Teaching Awards**

In the Spring of 2004, I was awarded an Outstanding Teaching Assistant Award from the American Association of Physics Teachers. In the Spring of 2002, I was nominated for the Outstanding Teaching Assistant Award by the Department of Physics and Astronomy of the University of North Carolina at Chapel Hill, and in the Spring of 2001 I was nominated for the Tanner Award for Excellence in Undergraduate Teaching by the University of North Carolina at Chapel Hill.

### **Teaching Evaluations**

In the Department of Physics & Astronomy at the University of North Carolina at Chapel Hill, the evaluation forms for laboratory TAs filled by the students contain six questions related to the TA performance as an instructor, namely:

1. Your TA has a good knowledge of the experimental procedures and

techniques used in this course.

2. Your TA indicates clearly on your reports where points were taken or given and why.
3. Your TA is prompt in returning graded lab reports.
4. Your TA is sufficiently available for help outside class hours.
5. Your TA has a good attitude toward teaching.
6. Your TA is actively helpful when there are problems.

Students are asked to agree/disagree with the above statements using a scale that runs from 1 (disagree strongly) to 5 (agree strongly).

In my evaluations, I have consistently obtained a class mean larger than 4.5 in questions 1, 3, 5 and 6. In question 4, I have always had class means larger than 4.0, and in question 2 larger than 3.5. When compared to the mean for all laboratory classes taught at UNC-CH, my results ranged always 0.3 to 1.0 points above, except for question 2. In the beginning of my TA assignments, I got for the second question 0.5 points less than the all-classes mean, but improved in the last evaluation to 0.2 points above.

### **Comments from students**

As a teacher, I deeply value the feedback from students. Even though I consider evaluations a very important tool to help me improve my teaching skills, it is the written comments of students that allows me to better understand what they feel about the relationship we have established in class. Here, I quote some of those comments. This is—of course—the result of a subjective choice, even though I have tried to cover a wide range of feelings from my students toward my teaching abilities.

“João is a great TA. This semester the lab has actually helped me understand the material. Thank you! I suggest that he could maybe help the other TAs to make their pre-lab lectures more useful.”

“I honestly thought that your pre-lab lectures were the most organized and helpful ones I’ve ever heard. I also appreciate how ready you are to answer questions. I enjoyed being in your section. I’ve never learned so much from a lab as I have from this one.”

“João was a great TA! He explained things very clearly, but without taking up too much lab time. He also seemed interested in our individual success.”

“João was very helpful when we had questions or were uncertain about what to do. He is a fair grader. He needs a warm coat though.”

“Joao did a nice job. He was easy to understand and had a good attitude that made him easy to approach. He needs to be more specific for the reasons for taking off points on the lab reports.”

“Great TA. Best I have had ever. Very good at explaining things. Very helpful. Willing to meet to discuss physics & lab. Gave good explanations of physics concepts. Very friendly, concerned about each individual.”

“Joao has been the most helpful & instructive TA that I have had in any lab at Carolina yet. Basically, most physics knowledge that I have has come from Joao. He is also very nice & even sometimes has answered our questions & concerns regarding the Phys24 lecture section.”

“I liked him very much as a person, but I felt strongly that he graded my reports too harshly.”

“João was an excellent TA. He always offered a challenge with his quizzes and was always willing to help clarify any issues.”

“If it were no for João I would be failing physics. He is my only source of teaching for the class. He should honestly be teaching one of the lecture sections. He is a lot better than my lecturer. He is one of the best TA’s I have ever had in my time at UNC!”

“Excellent character. Always willing to help. Focuses more on (...) material. Definitely deserves teaching award.”