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Teaching Statement

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Assistant professor in particle physics

To whom it may concern:

Being a Ph.D. student, and successively a postdoctoral fellow, most of my teaching experience come from following several undergraduate and graduate students in their academic career. Actually, my first contact with teaching came back in time when I was an undergraduate student. At the time I was still practicing karate at competitive level, and most of the time I was teaching once per week in the kid class. Despite this experience can be seen as diametrically far from teaching in academia, it was at that time that I learnt about the importance of decomposing a concept (or a movement) in order to make it easily assimilable. In that exact moment, I realized that the act of decomposing an idea it is not a trivial task at all, and it actually requires a deep understanding of the topic. Effective teaching is thus only possible through deep understanding. Since then, whenever I have to digest complicated concepts, I mentally teach it to an imaginary audience. Being able to communicate my research became a necessity to gain deep understanding of my work, and to identify the areas that require more reasoning from my side.

I do believe the goal of each lesson should not only be the assimilation of a set of concepts, but rather teaching students how to ask ourself the right questions, while stimulating the natural curiosity of the class. Curiosity is indeed, one of the main characteristic of physicists. Physicists want to know how and why things happen; and the classroom is the place where the magic happen. The mark of a good professor can be seen in how well he can turn the learning activity into an active process. I believe that even if students assimilate notions from a passive teaching, still they would miss one of the most valuable lessons: the ability to reason, to formulate hypothesis, and to ask yourself the right questions. Physics requires perseverance and and long time spent on the books. For most students it is impossible to maintain such level of commitment if the subject has been turned into a series of obstacles to overcome. Only the professor has the power (and the duty) of transforming the study of a subject from a series of obstacle to a interesting walk. Luckily, physics can be extremely entertaining. Physics is everywhere, and there is no example or physics problem that cannot be turned into a fascinating question. I do agree with one of the most popular sentences by Walter Lewin: "Teacher who make Physics boring are criminals".

In the same why I tried to set clear my goals in teaching, I try to reach them each time I interact with the graduates and undergraduates student that I follow (at Texas A&M, but also in other institutions). It is often difficult to forget about these goals in the frenetic and often very time-demanding research activities in High Energy Physics. But we should always remember that graduates and undergraduate are first of all students, and thus their goal is to acquire the tools for

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learning. Each hour spent explaining or discussing a topic, is a long term investment. Ans, as everything in life, doing things properly demands time.

I recognize my teaching experience to entire classroom is limited, but I think this problem will be solved with the same approach I used in the researches activities I lead. By learning from people around me, by setting very clear the goals from the beginning, and by being open-minded in discussing the correct approach to reach these goal. Also, receiving feedbacks by students, and having an active communication with them, is probably one of the most efficient instrument to shape the the methodology adopted during the classes.

Looking forward to hearing from you soon,

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