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Preparing Physics Ph.D. Students as Instructors[1]

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As demand grows for education in STEM fields, there is an increasing need for Ph.D. physicists with a strong aptitude for and commitment to teaching. Development of these skills begins in graduate school, where most physicists are first exposed to teaching as TAs to undergraduate courses. The TA experience thus has considerable impact on the development of their teaching skills. Unfortunately, many graduate programs do not provide detailed training to their TAs. However, if departments hope to produce physicists who are also outstanding educators, they must create a culture of excellence in teaching that includes adequate training and incentives to excel for their graduate student TAs. As current Ph.D. students in the Department of Physics and Astronomy at Rutgers University, we have designed and implemented a TA training program to achieve these goals. Our program, Developing Educational Leaders among TAs in Physics (DELTA P), is aimed at new physics TAs and consists of an intensive orientation followed by 10 weekly seminars during the semester. The orientation focuses on the essential practical issues relevant to TAs before they first step in the classroom, while the seminars delve into more specialized topics, ranging from motivating non-majors to physics education research. Students who complete the program are given an official credential by the department to certify their training. After two years DELTA P has begun to effect positive changes to our department's TA experience, and we believe DELTA P serves as a useful model for other departments. In this talk, we will present our program and hope to engage in an interactive discussion with the audience about these issues.

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