

asu PhysTEC: [Physics Teacher Education Coalition] Fall 2013 Newsletter

As the fall 2013 semester [third semester of our project] comes to an end, we are extremely excited to announce the milestones that have since been achieved. The Learning Assistant Program, which was implemented as the cornerstone of this project, has achieved great traction within the Physics Department at ASU. This semester, 10 LAs have been actively working with Dr. Gary Adams in his PHY 121 class to provide a new learning environment for the students. Our TIR (Teacher in Residence), Kelli Gamez-Warble taught her first semester of PHY 118: Explorations in Science Teaching. This class provides students with the opportunity to learn how to apply their physics knowledge to others in a classroom setting, one of the major problems in all areas of science education. There have been many new additions that have and will continue to benefit the project.

Implementation of Sundial at ASU



Last spring, Dr. Anna Zaniewski came to ASU to speak about a program she helped start at UC Berkley called Compass. It wasn't long after she gave her colloquium that ASU's physics department started recruiting her. She officially became a sun devil in July and has since created Sundial (mirrored off of Compass). The goal of Sundial is to build a strong and supportive community of undergraduate physics students at ASU. Members of this program meet together regularly to help and support each other as they make their way through the journey of attaining their physics degrees. This program is designed to increase retention and improve the overall sense of community that is so often lost in the world of physics.

Fall 2013 Physics Red Carpet Day

Since our first Physics Red Carpet Day (spring 2013) was such a success, it was decided that this event will take place twice annually. On November 1st, 15 high school physics students and 5 high school physics teachers from the Phoenix metro area came to ASU to experience ASU's physics department. Once the students and teachers arrived, they were greeted by members of both the PhysTEC team and the department. The students first participated in group problems designed to enhance their critical thinking skills, while demonstrating the role physics plays in everyday scenarios. After that, the students went to visit Dr. Culbertson's PHY 151 class, where the students got to observe some of the class' experiments and projects. From there, the group split up to attend two guided lab tours. After having seen how the two labs operated, the students were eager to participate in some physics experiments of their own. The PIRT team set up multiple demos and experiments and helped the students understand the concepts behind them. To conclude the day, the students got the chance to build their own speakers. Throughout the day, the students learned the ins and outs of the physics program at ASU. By the end of the day, students were very interested in the program and even sought out further information from physics faculty.



did you know

ASU's Master of Natural Science (Physics) Program was recently accepted into the Western Regional Graduate Program. This means that residents of the 16 WICHE states are eligible to enroll in the Physics MNS degree program for in-state tuition.

Team Members Attend CU Learning Assistant Conference

In an effort to further expand ASU's Learning Assistant Program, two of our PhysTEC team members attended the 2013 Learning Assistant Conference at University of Colorado at Boulder. Over the weekend of October 26-28, TIR Kelli Gamez-Warble and PHY 121 professor Tingyong Chen attended a variety of helpful workshops. During this time, Kelli received information about how to run a successful LA program, while Dr. Chen (who will have learning assistants in his PHY 121 class during the spring 2014 semester) received information regarding the implementation of LAs in large lecture classes.

As the foundation of this project, it is vital to ensure the success of the LA program through constant changes and improvements. The LA program that was first developed at CU Boulder has grown exponentially in recent years. What first started as a Physics program has escalated, and is now utilized in many different subject areas throughout the university. The success and growth of their LA program is something we hope to achieve. In only three semesters, we have seen great improvements in students who have had the opportunity to work with LAs.

With each semester, the LA program continues to improve. This has only been possible through the help and support of the Physics faculty who have worked with PhysTEC to implement LAs in their classes. In the spring 2014 semester, we will be expanding the program through the placement of LAs in four physics courses (PHY 121, PHS 110, PHY 150, & PHY 151).

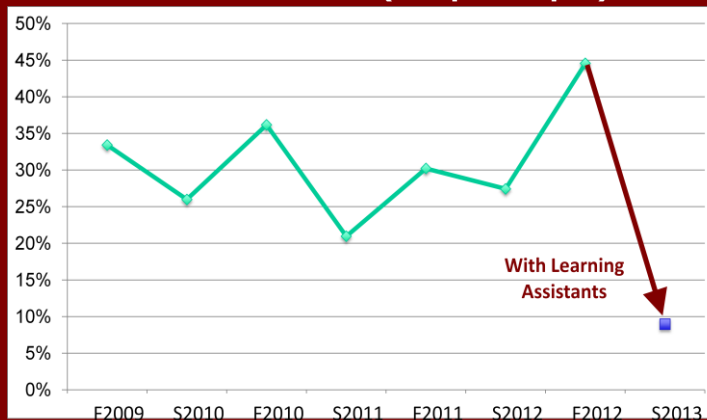
What's Happening Next Semester?

- Dr. Chen's PHY 121 class will have 7 learning assistants
- Dr. Culbertson's PHY 150 class will have 2 learning assistants
- Dr. Zaniewski's PHY 151 class will have 2 learning assistants
- TIR Kelli Gamez-Warble's PHS 110 class will have 3 learning assistants
- 3rd annual Physics Red Carpet Day will take place
- We will continue to work on building long-term support for our project

Fall 2013 Site Visit

During each semester as a PhysTEC funded site, members of the national PhysTEC Organization come to visit our site to monitor our improvement. On November 13, 2013, Monica Plisch and Ted Hodapp came to ASU to meet with the members of our team. PhysTEC was extremely impressed by the success of the new BS Physics (Concentration in Secondary Education) degree. Since this degree has been introduced, the number of students enrolled in a physics certification program has jumped from 2-4 to 9-10. This is a major step up from recent figures. Monica and Ted were also impressed with the further improvement of our LA program. The LA program's most notable demonstration of success is the DEW data obtained from these classes. In recent years, DEW rates were extremely high in introductory physics courses. However, the DEW rate in courses that use LAs is dramatically lower. These two accomplishments were seen as the most prominent of this semester. In addition to monitoring our improvements, the PhysTEC members also left recommendations that we look forward to implementing in the future.

PHY 121 DEW Rate (Tempe Campus)



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ASU PhysTEC



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