

## **Dr. Michael R Gallis**

**Associate Professor Tenure-Line  
Physics**

**Title of your research project.**

Novel Laboratory Activities for introductory physics.

**Description of research. Please provide a few sentences that explain the question and the methods employed in this research project.**

Novel laboratory activities can provide students with ways to explore topics that branch off of the “canned” curriculum. Some example topics and activities include: exploring elastic hysteresis in a rubber band “bungee jump” activity, measuring aerodynamic forces via beach ball physics, an automation of a microwave diffraction experiment allowing more data runs in much less time. Many activities are tied in to Easy JavaScript Simulations and use tools such as the Tracker video analysis program. Pasco’s easily customizable equipment and software has allowed tremendous flexibility in creating new activities.

**Did this project include Penn State students as researchers?**

Yes

**If yes to the above question, please state where it was published.**

N/A

**What problem do you address with your research?**

These projects all address challenges to student learning in introductory Physics, Astronomy, and Math courses and strive to enhance the student learning experience.