

## **Dr. Michael R Gallis**

**Associate Professor Tenure-Line  
Physics**

**Title of your research project.**

Animations for Physics and Astronomy

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

The purpose of the project is to create short animations to enhance student learning on challenging topics in Physics, Astronomy and Mathematics. The animations are primarily 3D visualizations that illustrate complex geometries and processes. All animations are shared via the project's web site and YouTube channel as an Open Education Resource. Currently there are 212 animations available on the project's YouTube channel, which has had over Six and a half million views. <https://www.youtube.com/@mrg3/about>

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

Yes

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

Some parts of the project have been the focus of a paper in The Physics Teacher.

**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.