Abstracts for 20 May talks:

**Bradley Gearhart**

**Hutchinson Technical High School (#304) – Buffalo, NY**

**<bgearhar@buffalo.edu>**

**iPad Shadowgraph: Construction and Classroom Use**

Shadowgraphs enable us to visualize the movement of transparent fluids by capitalizing on the refraction of light moving through mediums with different optical properties. Typical shadowgraphs are projected onto a wall, floor, or other flat surface and offer limited resolution compared more complicated Schlieren systems. During this talk, I will present a shadowgraph system using an iPad (or smartphone) that improves resolving power while keeping cost, construction and setup simple enough that it is practical for use in a high school science classroom. Additionally, I will show how the iPad Shadowgraph can be used to teach concepts in science that have typically been impossible to observe directly.

**Promoting critical thinking in Physics of Sound**

I will describe and reflect on efforts to encourage critical thinking and discourse in a small enrollment introductory college course about sound for non-science majors, including forms for note-taking during demos, reading logs and reflective writing assignments.

**David Abbott, Ph.D.   
Instructional Support Specialist, Physics Department   
Buffalo State College, 361A Science and Math Center  
<abbottds@buffalostate.edu>**

**End of Semester student video projects for Introductory Physics**

I will describe the development of end of semester project based instruction wherein groups of students create short introductory physics content videos. Videos, student work, instructions, instructional examples, associated reports, rubrics and comments will all be shared and discussed.

**Dan MacIsaac**

**Associate Professor of Physics**

**SUNY Buffalo State**

[**danmacisaac@gmail.com**](mailto:danmacisaac@gmail.com)

**Panel: Master Physics Teachers and the NYS Master Teacher Program**

A panel of 4 physics teachers who are NYS Master Teacher Program fellows will describe their experiences with the program, which funds select STEM teachers for $60,000 / 4 years to undertake self- and communally directed professional development.