NYSS-AAPT Spring Meeting 5/20/2017
SUNY Buffalo State College SAMC 106

8:30 - 9:15 Registration SAMC Lobby
9:15 Introductory remarks

9:30 **Bradley Gearhart** BGearhart@buffaloschools.org
Hutchinson Technical High School (#304) – Buffalo, NY
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.

10:15 **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.

11:15 - 11:30 Break

11:30 **David Abbott, Ph.D.** abbottds@buffalostate.edu
Instructional Support Specialist, Physics Department
Buffalo State College, SAMC361A
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.

12:30 - 1:15 Lunch

1:15 **Dan MacIsaac** danmacisaac@gmail.com
Associate Professor of Physics
SUNY Buffalo State
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.

2:15 **Ryan Fisher** rpfisher@syr.edu
Research Assistant Professor
Syracuse University/Department of Physics
I will first present an overview of the first two observations of gravitational waves from the mergers of binary black holes made with the Laser Interferometer Gravitational-Wave Observatory (LIGO). I will also present an overview of some of the most exciting aspects of the ongoing and future research in the field of laser-based gravitational wave observations. Then I will present an overview of some of the fundamental skills and concepts that our collaboration members use in our daily research, with a focus on how they relate to important concepts we learned in our high school (and younger) years.

3:15 **Sam Sampere** smsamper@syr.edu
Lab Manager
Syracuse University/Department of Physics
I will describe the construction and the physics of waves on a glass bar as well as give you plans so you can create one. We will also discuss details on the construction of this device, use in the classroom, and how you might go about duplicating this as a future make and take.

3:45 Concluding remarks 9/29 - 9/30 Joint Regional Meeting Syracuse University