



American Association of **Physics Teachers**
Enhancing the understanding and appreciation of physics through teaching

Central Pennsylvania Section
American Association of Physics Teachers
Fall 2019 PTRA Workshop
M87 and Black Holes

The first ever picture of a black hole has increased interest on black holes. Capitalize on this interest and use it to teach some fundamental physics. This workshop will introduce activities for teaching the basics of black hole formation with a strong connection to Newton's and Kepler's Laws, Universal Gravitation, and wave properties.

This workshop will be useful to teachers of physics, physical science and earth & space science.

PTRA Team: Pat Callahan ptcallahan@aol.com Dave McCachren kmccachren@comcast.net
Alice Flarend amf@blwd.k12.pa.us

Where: **Misericordia University**

When: **Friday December 6, 2019**

Time: **8:30 a.m. to 3:00 p.m.**

Cost: \$75 make check payable to **AAPT-CPS**

Please let us know at least two weeks before the workshop so we can plan for materials.

Please send registration & payment to the workshop host or email the registration and pay at workshop

Information about workshop host

Name Michael P. Orleski

Address Misericordia University 301 Lake St. Dallas, PA 18612

Email morleski@misericordia.edu

Participant Name:

School:

Email:

