



## **Friday Oct 9, 2009 –Dark Matter and Quantum Physics**

The Michigan Section of the American Association of Physics Teachers (MIAAPT) is offering a six-hour workshop based on materials developed by the Perimeter Institute of Theoretical Physics. The workshop will be at the Midland Center for the Arts Alden B. Dow Science Museum in Midland, MI. Leaders will be Laura Ritter of Troy High School, Nicole Murawski of Royal Oak High School and Alan Gibson, retired Rochester Adams High School. All have been trained by AAPT/PTRA as workshop leaders.

Using an inquiry-based approach, this workshop will emphasize activities that can be used in your classroom. You will do an experiment to review circular motion and apply the results of your experiment to observations of stars orbiting galaxies. The presenters will show how these materials will be used in your classroom to further your students understanding of the evidence for the existence of Dark Matter. In the Quantum portion of the workshop, you will use materials developed by the Perimeter Institute to help your students understand some aspects of Quantum Physics.

At the conclusion of the workshop, you will receive the teaching kits for both topics. Each kit contains a DVD and teacher notes. Your \$60 fee covers only the materials used in the workshop. We are working on suggestions for lunch and will send those out the week before the workshop. It is not necessary to prepay for lunch.

Send your registration form and check to reserve a spot in the workshop. Refunds will be made if you inform us 3 days prior to the workshop.

### **Friday Schedule**

9:30 Dark Matter

11:00 Quantum Physics

12:30 Lunch

1:30 Quantum Physics, cont.

4:30 Distribute Kits

5:00 Dinner and check into housing for those staying for MIAAPT Meeting Special Relativity workshop. Information about dinner location and hotel will be sent out very soon.

6:30 – 9:00 Relativity First workshop by E.R. Huggins, author of Physics 2000.

See the website at <http://www.physics2000.com/> for additional info. You will be given free materials to use in your classroom. Al attended this workshop at the AAPT meeting and was very impressed.

## **Saturday Schedule**

MIAAPT meeting – Go to: [www.miaapt.org](http://www.miaapt.org) for list of talks being presented and receive more information about the Einstein Exhibit in the afternoon. Conference fee of \$15 includes the exhibit.

The Michigan PTRAs will present additional workshops during the school year. Notices will come out to all teachers on our mailing lists as details are worked out. A second workshop is now scheduled for the MSTA meeting in Lansing. Other workshops will be offered at ISDs and the Math/Science Centers.

PTRA (Physics Teaching Resource Agents) is a program funded by NSF from 1985 to 2008. AAPT (American Association of Physics Teachers) is continuing the program as part of its outreach to the physics community. More information is available at: [www.aapt.org](http://www.aapt.org).

Information on the Perimeter Institute is available at: [www.perimeterinstitute.ca/](http://www.perimeterinstitute.ca/)