

# The Dialog

November 2003

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## Fall Meeting: Our Galaxy Near & Far

The Fall meeting of the SOS/AAPT was held at Xavier University on Saturday, October 11, 2003. It was a joint meeting with the Tri-State Physics Teachers. The title of the meeting was "Our Galaxy Near and Far". We had two speakers. Dr. Fulvio Melia of the University of Arizona presented "The Black Hole at the Center of Our Galaxy". Dr. Melia is a professor of astrophysics at the University of Arizona. He recently published a book on this topic which is written for general audiences. Copies of the book were given away in the business meeting.

Dr. Heidrun Schmitzer of the Physics Department at Xavier gave a talk "Dark Sun – The Eclipse of the Sun and its Observation". Dr. Schmitzer had many pictures to share and insights from this eclipse which occurred in 1999 in Europe.

Contributed papers and their abstracts are given below:

Health and Safety Costs of Electrical Energy from Coal-fired and Nuclear Generators Compared. Gordon Aubrecht (Ohio State University at Marion, Ohio State University Physics Education Research Group)

Considering the various methods of generating electricity—coal, natural gas, nuclear hydroelectricity, solar, wind, and so on—two methods stand out in terms of radioactive emissions. Both coal-fired and nuclear electricity lead to such emissions, and we focus on waste produced in these two modes. Coal burning clearly causes various deleterious consequences for the environment and for people from atmospheric emissions. The long term nature of wastes from reactors pose more difficult problems than the lower-level waste from coal burning. Reactors are the possible targets of terrorists, coal-fired plants are not. Both could lead to proliferation.

Memories of Cuba. James Sullivan (OMI College of Applied Science of the University of Cincinnati)

The author was able to attend the 8th Inter-American Conference on Physics Education in Havana, Cuba in July, 2003. It can be quite difficult for US citizens to visit Cuba at this time in history so the author shared his thoughts on the conference as well as some of his thoughts on Cuba through a series of photographs.

Pre-lecture Multi-platform DVDs George Mathew (Indiana University East)

Many college students are unprepared for the challenges of physics. For some students even reading the textbook ahead of the lecture can be a struggle. To make the physics curriculum user-friendly, we proposed creating pre-lecture multi-platform broadcast quality DVDs. Students will watch these before class to attain a foundation of understanding needed for a meaningful in-class experience. Preliminary testing showed as increased student achievement.

Continued on the next page.

# Fall Meeting Continued

Accelerator-based Transmutation of Nuclear Waste, Jean Oostens (Campbellsville University)

Undesirable transuranian elements produced by nuclear reactors can be used to fuel an accelerator-driven subcritical assembly designed to return at least enough power to run a GeV range superconducting linear accelerator from which the proton beam originates in the first place. An important watershed in determining economical profitability is the knowledge of the gain factor and the energy distribution of the neutron spectrum produced by spallation of a suitable target. The LAMPF/LANSCE accelerator has been used to irradiate two 0.50 meter long lead-bismuth targets to test the validity of the codes needed to design the next step of the project: a target, surrounded with a mix of fuel elements and waste to be transmuted. We reported on the measurement of neutron fluxes by foil irradiation which has been our contribution of this project.

Physics and Simplicity W.H. Giles (Martinsville, OH)

A comparison of the relative complexity of three well known principles of physics: which will you pick as the simplest, the easiest to understand; and the most complex, the most difficult to understand?

**Thanks to Stephen Yerian and his committee at Xavier for hosting a wonderful meeting.**

The Spring meeting is scheduled for Sat. April 24th at Oakwood High School which is located south of downtown Dayton. The host of the meeting is Mark Brooks-Hedstrom. More information will be coming out in the next Dialog. Look for it in early March 2004.

There will be an executive committee meeting at Wittenberg University on Sat. Feb. 21st. If you are interested in joining this committee as an at large member, please contact any of the officers listed on the first page.

## News from National AAPT

### PROMINENT PHYSICISTS AND AUTHORS TO SPEAK AT MIAMI MEETING

<p>Don't miss the impressive line-up of plenary and ceremonial speakers that</p>	<p>Robert B. Clark, Brigham Young University, "Some Lessons Learned"</p>	<p>high school seniors planning to enter such curricula are eligible. For</p>
<p>will be featured at the 128th AAPT National Meeting January 24-28 in Miami Beach, FL.</p>	<p>Lene Vestergaard Hau, Harvard University, "Light at Bicycle Speed - and</p>	<p>more information on the scholarship, please go to</p>
<p>Plenary Speakers, Institutions, Speech Titles:</p>	<p>Slower Yet!"</p>	<p><a href="http://www.aapt.org/Grants/lotze.cfm">http://www.aapt.org/Grants/lotze.cfm</a> .</p>
<p>Seth J. Putterman, UCLA, "Sonoluminescence: The Star in the Jar"</p>	<p>Lawrence M. Krauss, Case Western Reserve University, "A State of the</p>	<p><b>AAPT JOB FAIR</b></p>
<p>Maya Tolstoy, Columbia University, Lamont-Doherty Earth Observatory, "Listening to the Ocean"</p>	<p>Universe Address"</p>	<p>AAPT will be hosting a job fair, January 25-27, in conjunction with our</p>
<p>Jayanth R. Banavar, Penn State University, "Geometry and Physics of</p>	<p>Featured speakers' photos, bios, and abstracts are available at</p>	<p>128th National Meeting in Miami Beach.</p>
<p>Proteins"</p>	<p><a href="http://www.aapt.org/Events/128th/speakers.cfm">http://www.aapt.org/Events/128th/speakers.cfm</a> .</p>	<p>·Submit a resume to be posted at the job fair</p>
<p>Ceremonial Speakers, Institutions, Speech Titles:</p>	<p><b>DECEMBER 1 DEADLINE - SCHOLARSHIP FOR FUTURE HIGH SCHOOL PHYSICS TEACHER</b></p>	<p>·Submit a job ad to be posted at the job fair</p>
	<p>AAPT offers a scholarship for future high school physics teachers, which</p>	<p>·Interview onsite</p>
	<p>is supported by an endowment funded by Barbara Lotze. Undergraduate</p>	<p>Members do not need to attend to participate - send your resume today!</p>
	<p>students in, or planning to enter physics teacher preparation programs and</p>	<p>Participate by looking through job postings and attending career seminars.</p>
		<p>Employers will be on hand looking for qualified candidates. The job fair</p>
		<p>web page is located at</p>
		<p><a href="http://www.aapt.org/jobfair">http://www.aapt.org/jobfair</a> where you can</p>

get additional details.

### AAPT ANNOUNCES NEW OFFICERS FOR 2004

The AAPT would like to congratulate their newly elected Executive Board

officers for 2004. For more information please go to

<http://www.aapt.org/aboutaapt/aaptnews.cfm> .

### AAPT SEARCHABLE ABSTRACT ARCHIVES NOW ONLINE

Abstracts from past AAPT national meetings, starting from 1998, are now

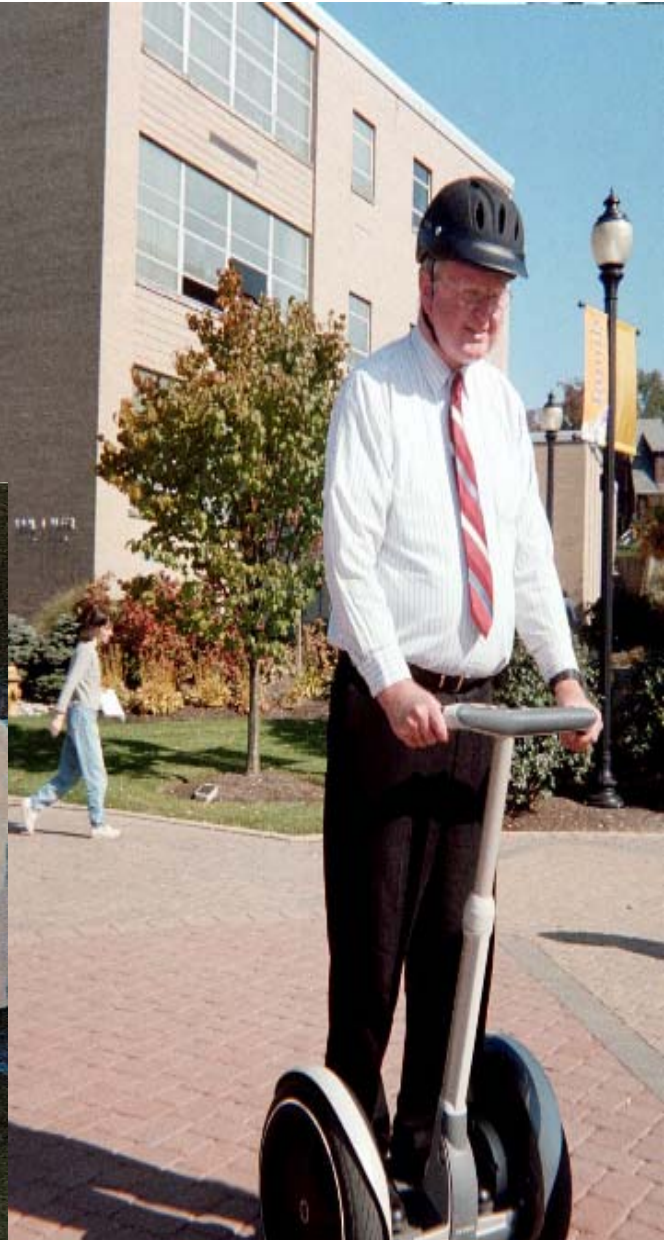
available online at <http://www.aapt.org/AbstractSearch/> .

You can search the archives by either keyword or by author.

AOL Link: [<a href="http://www.aapt.org/AbstractSearch/">](http://www.aapt.org/AbstractSearch/)

AAPT Abstract Archives</a>

## SOS/AAPT Members on the Go



**SOUTHERN OHIO SECTION OF THE AMERICAN  
ASSOCIATION OF PHYSICS TEACHERS**

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Please email your address as the Dialog is moving to an all electric format. The Dialog will be sent via email and can also be found at:

[www.physics.ohio-state.edu/~adbrecht/sosaapt.html](http://www.physics.ohio-state.edu/~adbrecht/sosaapt.html)

*When did you last pay your membership dues?*

If you can't answer this question and are not a lifetime member, it is time to pay your \$10.00 dues to the SOS/AAPT. Checks for membership can be made out to the SOS/AAPT and sent to the address at the left. Please ask teaching colleagues and valued friends to consider becoming a part of our organization. New members are always welcome and needed.

The executive board of SOS/AAPT are looking for volunteers to serve as at large members of the board. If interested please contact any of the officers list on page one.