

NJAAPT NEWSLETTER DECEMBER 2006

President's Message

That time of the year has arrived and from the members of the executive board I would like to extend our warmest wishes to all. December is a very busy month and it leaves us some time to reflect upon the past year and our accomplishments, personally and professionally. The NJAAPT has been extremely active and we are proud to provide so many activities for the members and the upcoming year will see this trend continuing with new and exciting opportunities for you.

Last year's schedule was diverse enough so that many new faces participated in the workshops and meetings held throughout the state. At little cost to the individual, the Make and Take Workshops gave teachers a chance to learn how to construct items for use in the classroom while the Physics Olympics afforded teams from our high schools to compete while using their knowledge of the physics they learned in class.

This coming year along with our staple programs such as the Physics Olympics and Dave's Demo Night, there are workshops to attend on Energy and Electricity and Electrostatics. Then we have the Sectional Meeting in March at Princeton University with its theme of Physics Education Research that is applicable to both the high school and college/university levels. What an opportunity to see and hear firsthand what is going on to make the teaching of physics and current theories on learning methods compliment each other. And now in the planning stages a family-oriented event that we are sponsoring in May – a 2 hour steamboat trip on the Delaware River. It will combine learning activities about steam power and energy and the chance to have some fun. There is further information in an article in the newsletter.

Well, as Holiday Treats is now past and the New Year is just around the corner, it is time to once again thank those who have made the year a resounding success. So to John Valente, Jessie Blair, Dave Bandel, Dave Maiullo, Joe Spaccavento, Rich Urban, Nancy Michaelson, Janet Saylor, Borislav Bilash, Yitzhak Sharon, Jim Ferrara for their tireless efforts in conducting workshops, attending executive board meeting, organizing the Sectional Meeting, and the Holiday Treats – **Thank you for your efforts there on behalf of all the members of the NJAAPT.** To the members of the NJAAPT- **Thank you for participating and your support.**

**Have a Happy and Healthy 2007.
Ray Polomski**

Address Changes

It is very important for us to receive a change of address notification if you either change your home address or place of employment. With the rising cost of postage and printing, the expense to the NJAAPT is a matter of financial concern. Any changes should be sent to our treasurer Dave Bandel at:

DarandDave@optonline.net.

Another way to help reduce costs is to receive the newsletter by email and if you are not currently doing so contact Ray Polomski at r7429@optonline.net and request be added to the email list.

Membership Renewal

As the year comes to an end, so does the membership for the year 2006. If the mailing label shows 2006 above your name, it indicates that your membership is expired at the end of this month. Won't you take the opportunity to renew the NJAAPT membership for another one or three years? It doesn't take much – just go to our website, www.njaapt.org, and download the renewal form and mail it to Dave Bandel. The cost of renewing has not changed in a very long time, \$10 for 1 year and \$25 for 3 years.

It is unfortunate, but if the membership is not renewed your name will be removed from the mailing. Please send in your dues today so you do not miss any of the important mailings in the future.

Internet Mailing Address

Once again we are requesting that you inform us of any changes in your email address to either Dave Bandel at DarandDave@optonline.net or Ray Polomski at r7429@optonline.net. Your cooperation is very important in this matter - with the cost of postage rising and the cost of the newsletter printing and mailing – since the funds expended reduce our treasury and that can lead to increase costs for workshops. Please take the opportunity to request receiving the newsletter by email. It's easy – just send an email to Ray Polomski requesting that you be placed on the enewsletter list. Thank you.

Spac's Corner

By Joe Spaccavento

– Every newsletter I will try to share with you some things that you may not be aware of!

Free Simulations for England!

From our friends across the pond, this site offers free programs that are about serious physics of up to A and A S level or College standard. There are 29 simulation experiments you can do with your mouse. And again they are free for download!

<http://www.physicslab.co.uk/index.htm>

4wd Mini Racers - These cars are the rage in the Orient - they are the ones we demo'd at the Holiday Treats workshop. - (get 20% off Retail prices for NJAAPT - see www.cis-associates.com)

CIS-Associates distributes some toys that carry a learning value in physics mechanics and electrical engineering. The toys are kit cars that can be raced in a track. The value is in understanding the way to tune the cars to stay in the track at high speed, motor tuning for the type of track (high RPM for long stretches Vs high torque for windy tracks), CIS will supply all the parts to build the motors so the assembler can select what windings to use on several different choices of rotor design and magnet strengths. You can also purchase completely assembled cars for kinematics purposes. These cars fly, they run on 2 AA batteries, are very reasonable, and have a ton of physics in them. They involve motors, electric circuits, aerodynamics, gearing, friction and lubrication, speed calculations, etc, etc, and the best part is they basically snap together, all you need is a small screwdriver.

Now the best part! CIS-Associates will give you (Physics Teachers) a 20% discount from the retail prices if you **mention 20% off for NJAAPT members in the comments section.** Please feel free to check out their web site – www.cis-associates.com If you noticed, they have a birthday special package that is a really great deal!

Be sure to mention, NJAAPT, and me, Joe Spaccavento (me) for your 20% discount, my contact at CIS-Associates is Carmel Ish-Shalom.

Summer Physics Program

**Institute for Physics Teachers Summer 2007
Professional Development Opportunities**
Cornell University, Ithaca, NY

PHYS 501 *Contemporary Physics for Teachers* - July 8 – 20, 2007
2 graduate credits Open to physics teachers new to CIPT

Course content - Lectures by Cornell faculty on topics including: atomic-scale imaging, the Standard Model, integrated circuits, x-ray diffraction of bio-molecules, and light emitting diodes. Hands-on activities developed by Cornell scientists working with teachers presented by teachers include: building a water analogy to electric circuits, observing subatomic particles with a cloud chamber, mapping a hidden "molecule," and converting electrical energy to light with LEDs.

PHYS 502 *Physics and Life* - July 22 – 27, 2007
1 graduate credit Open to CIPT alumni and physics teachers new to CIPT

Course content - Lectures organized around daily themes presented by Cornell faculty may include: animal communication, physics in music, and technology we take for granted. Hands-on activities developed by Cornell scientists working with teachers presented by teachers may include: the sixth sense of electric fish, magnetic induction in a guitar amplifier, xerography, and energy conversion in a light bulb.

Applicants are welcomed from physics teachers from any state. Application deadline in March 1, 2007.

Labs are presented using the science inquiry method and are applicable to the NYS Physics Core Curriculum where possible.

Selected participants (20 per course) receive course scholarship, housing, parking, supply grant, \$300 per week stipend.

For more information about the course or about CIPT, contact:
Linda Clougherty, CNS, Cornell University, 632 Clark Hall, Ithaca, NY 14853; 607-255-9434; cipt_contact@cornell.edu .
Course information and downloadable application are at www.cns.cornell.edu/cipt

Bon Voyage! NJAAPT



Join your fellow Physics Teachers and bring along your family for an amazing adventure aboard the steamboat "SPLASH" on a special trip for physics teachers. As the whistle blows, this authentic stern-wheeler will take you on a 2-hr voyage of fun and learning, featuring physics demonstrations that involve you and the steamboat. Once you experience the trip, you will be provided with the details to schedule a similar trip for your physics class.

SPLASH is a Coast Guard certified steamboat, boarding in Lambertville NJ, where Washington crossed the river, canal boats crossed, wildlife flourishes and millions of people get drinking water. SPLASH carries 49 passengers, with specially prepared interactive activities to help inspire students. We are planning demos of force, pressure, torque, flotation, energy conversion and electricity using features of the boiler, steam engine and steamboat.

Date: The trip is planned for Saturday, May 5th, 2007 at 10:00 AM

Place: Departs from Lambertville NJ – See steamboat web site for directions

Cost: \$20 Per Adult (if NJAAPT member or accompanied by one)
and \$10 Per Child (if accompanied by NJAAPT member)

Lunch: Bring you own brown bag lunch and drink

Contact: Joe Spaccavento NJAAPT – spacshelby@yahoo.com

Reserve: Send check made payable to NJAAPT and names, number and type of participants with both a contact email address and telephone number to: (Limit – 49 people so get your checks in early)

Joe Spaccavento
20 H Garden Terrace
North Arlington, NJ 07031

For additional information on the Delaware River Steamboat Floating Classroom visit their web page at www.SteamboatClassroom.Org or email questions about the boat to info@steamboatClassroom.org, or call 609-921-6612 to join the steamboat crew.

Bon Voyage! NJAAPT



Enclosed is my registration for the May 5th trip on the Steamboat SPLASH!

Name NJAAPT Member: at \$20 _____

Email Address: _____

Telephone #: _____

Name of Guest Adults at \$20: _____

Name of Guest Children at \$20: _____

Total enclosed: _____

Send this form and check made payable to NJAAPT to:

Joe Spaccavento
20 H Garden Terrace
North Arlington, NJ 07031

Deadline is April 30th – Limited to the first 49 who are paid!

Henry R. and Gladys V. IRONS LECTURE in Physics and Astronomy

Date: March 3, 2007.

Place: Physics Lecture Hall , Busch Campus Rutgers University, Piscataway, NJ

Time: 2:00 P.M.

Black Holes in Galaxies

Reinhard Genzel

Max-Planck Institute for Extraterrestrial Physics

Garching, Germany

Abstract

Evidence has been accumulating for several decades that quasars, the most luminous objects in the Universe, are powered by accretion of matter onto massive black holes. I will discuss recent observations, employing adaptive optics imaging on large ground-based telescopes that prove the existence of such a MASSIVE BLACK HOLE IN THE CENTER of OUR MILKY WAY beyond any reasonable doubt. These observations indicate that the Galactic Center black hole may be rotating rapidly. I will also discuss our present knowledge about the formation and evolution of these massive black holes in the early Universe.

NJAAPT

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