

Arkansas Physics

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Important deadline: March 1, 2005 is the deadline for Physics scholarship applications. Call, write or see our web page for info: <http://www.uark.edu/depts/physics/undrgrad/handbook/scholars>.

Really Important Stuff! See application information included, along with a letter for administrators. This program is exciting. PHYSICS TEACHING RESOURCE AGENTS (PTRA) PROGRAM- AAPT National has approved the University of Arkansas, Fayetteville, as a new Rural Regional Site (RRS) in the Rural PTRA Program starting summer of 2005. A one-week summer institute for physics and physical science teachers in high schools and middle schools will be held June 28-July 1. There are follow up sessions, and there is a series of annual summer events. Participants will be able to attend 36 workshop hours per year. This year's participants will get priority (and an increased stipend) as we rotate through a 4-summer list of topics. The AAPT/PTRA Program is supported in part by the NSF.

The program seeks to provide sustained professional development to teachers of physics and physical science by maintaining a nationwide cadre of over 200 accomplished high school teacher-leaders trained and updated yearly to conduct extensive series of workshops in their local regions. These teacher-leaders are certified as PTRAs by AAPT. Ours will be Mark Kinsey, physics teacher from Clements HS in the Fort Bend ISD in Sugar Land, TX. He is also an AP Physics consultant.

The topics for this summer and the two follow-up sessions during 2005 - 2006 are: (1) Teaching about Kinematics (2) Teaching about Newton's Second Law. There will also be a computer technology component for both of these topics using PASCO, TI and/or Vernier equipment. This equipment will be borrowed from the companies.

The Rural AAPT/PTRA program is an initiative to serve isolated and neglected rural teachers. It provides opportunities for these teachers to

grow professionally in physics content, use of instructional technology, and established teaching strategies. Additionally they will form the foundation of a professional, supportive network for physics teachers.

Non-rural participants may attend for a small fee from their school, or apply for one of two physics department scholarships for the program.

Potential national PTRAs are selected based on physics content mastery, creativity, successful teaching experience, familiarity with physics education research, and the capacity for professional leadership. The opportunity for continuity and expansion of training is offered each year at an intense summer institute at which AAPT/PTRA commissioned workshops are developed. What emerges, then, are teachers who go out to meet the specific needs in their local area.

If you teach in a rural or small-city school district there is no cost to attend (neither to the attendee nor to the school division). Lodging and meals will be provided on campus. Attendees will arrive Sunday afternoon, June 26; the workshop will conclude on Friday, July 1.

Included are a letter from Jim Nelson, AAPT's Vice President and the Principal Investigator for PTRA, and an application form. In the interest of time, I am sending this directly to you, but please feel free to share this information with your administrator in case there are other teachers in your district that might benefit. If you are not eligible or interested but know someone who might be interested, please pass this information along to them.

Questions, comments, and completed applications can be addressed to me as site coordinator. I hope to see you in June! Gay Stewart

The faculty and members of SPS invite students and teachers from your high school to participate in high school physics day. Note that a small registration fee is required, and that a pizza lunch will be provided by SPS, making the fee well worthwhile. Checks may be made payable to "Department of Physics". There will be prizes in every category, and a classroom prize for the best school overall. We hope that this day will encourage the pursuit of physics as a career itself or as a valuable asset to a large number of possible careers by providing an opportunity for detailed projects to be carried out in a light-hearted (and hopefully light-landing) manner. We also hope to give students and teachers from across the state an opportunity to get acquainted, better inform them about our undergraduate physics programs, and show that physics is fun.

High School Physics Day Registration Form:

Teacher's Name _____ School _____

School Address _____ ***Please print student names***

City/State/Zip/Phone _____ ***on back of this form!***

Teacher e-mail: _____

Preregistering _____ students at \$2.50 each for a total of \$ _____ payable to the Physics Department.

Contests (check each your school will be competing in and give the number of teams competing in each):

___ Water rockets, Number of Teams: _____ ___ Paper Tower, Number of Teams: _____

___ Egg Drop, Number of Teams: _____ ___ Posters, Number of Teams: _____

___ Einstein Look Alike Contest, Number of Teams: _____

The Talent Search is a cool World Year of Physics Event... Visit our newsletter on the web for each of these to be a link, or go to www.aps.org and click on the World Year of Physics Logo!

Physics Talent Search: Is one of your students the next Einstein? You never know without trying! To start, why not participate in the WYP 2005 Physics Talent Search? Students can earn points by visiting a physics lab (High School Physics Day counts!), making a poster, writing a play, or doing a physics experiment in your school's science fair. If they earn 10 points, they earn the right to be called a "United States Physics Talent." For more points, who knows? They might become one of the United States "Physics Young Ambassadors." Reduced Gravity Experiments: High School Teachers, Research in Freefall with NASA Climb aboard NASA's flying, reduced-gravity laboratory and run your high school classroom's physics experiment. PhysicsQuest In celebration of the 100th anniversary of Albert Einstein's 'miraculous year' of 1905, and coincidentally, also the 50th anniversary of his death in 1955, APS invites middle school students from all across the United States to solve a mystery. The solution to that mystery reveals the location of a treasure somewhere in Princeton, NJ where Einstein taught and continued to do research for the last 23 years of his life. Can your class solve the mystery? Measure the Earth with Shadows Eratosthenes first measured the diameter of the Earth with an ingenious technique using just sticks, shadows and a little mathematics. Now students, collaborating with others in distant schools, will combine their efforts to recreate this experiment on the largest scale ever attempted. **Sign up for the World Year of Physics Newsletter!**



HIGH SCHOOL PHYSICS DAY

The University of Arkansas Department of Physics will host its annual High School Physics Day on **FRIDAY March 18, 2004.**

SCHEDULE OF EVENTS AND RULES

8:30 - 8:45	Registration	12:30 - 1:30	Paper tower
8:45 - 9:00	Introduction and welcome	1:30 - 2:30	Einstein Look Alike contest
9:00 - 10:00	Rocket Launch	2:30 - 3:30	Egg Drop
10:00 - 11:30	Demonstrations, tours of research labs	3:30 - 4:00	Physics at U of A, Fayetteville
11:30 - 12:30	Lunch provided by SPS	4:00 - 4:30	Awards ceremony

EGG DROP: No restraining devices or aerodynamic devices may be attached to the container. The container itself may not be an aerodynamic device. The maximum height of drop will be 60 to 80 feet. The winner is the container with the most eggs surviving the drop. In the event of a tie, the container with the least volume wins. Each container must hold **two** raw, unfrozen, untreated chicken eggs. Please bring your own. Containers may be of any material but must fit into a cube 50 cm on each side. Containers which may chip the asphalt target will be disqualified. The containers must be opened to check the eggs after the drop. Unbroken eggs will be broken to determine if qualified. **Limit 3 entries per school. EINSTEIN LOOK ALIKE CONTEST:** In honor of the World Year of Physics, celebrating Einstein's "big three" papers submitted in 1905, open to either gender, it is all in the attitude, and the hair. I'm afraid the judging will be subjective. **POSTER:** They should deal with anything related to physics or astronomy. Posters should be turned in at registration time, and will be judged according to content and artwork. Entries are limited to one poster per person. **PAPER TOWER:** Construct a free-standing tower of maximum height using a single sheet of 8.5" by 11" photocopier paper and one 50 cm strip of cellophane tape. No other materials may be used. Materials and construction aids will be provided. The tower may not be attached to the floor or any other object. A tower shall be declared free-standing if it remains self-supporting for more than 10 seconds. Height is determined by measuring the perpendicular distance from the highest point on the tower to the supporting surface. **ROCKET LAUNCH:** Students will modify a 2-liter soda bottle to be launched with a specified amount of water at a specified air pressure. Rockets will be judged for greatest time aloft and originality of design. **Limit 3 entries per school. HOW TO PARTICIPATE:** Please fill out the registration form and return by Monday, March 7. Awards will be given for first, second, and third place in the five competitions. Entries by **individual** high school students and by **teams of two** members are welcome. Provisions will be made so that each team member receives an award. Everyone is encouraged to participate but anyone can come to observe. Judges' decisions are final. In the event of a tie, the points will be split between the teams.

NEWSLETTER
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