What’s v?

A monthly newsletter for physics teachers in LA and Orange Counties

Upcoming Events

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<th>October 11</th>
<th>October 27</th>
<th>October 19-21</th>
<th>November 3</th>
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<tr>
<td>PhysTEC Demo-Day</td>
<td>PhysTEC Open House</td>
<td>CSTA Conference</td>
<td>Southern California AAPT Fall Meeting</td>
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<tr>
<td>Location: CSULB HSCI Rm 280</td>
<td>Location: CSULB PH-140</td>
<td>Location: San Jose Convention Center</td>
<td>Location: CSU Northridge</td>
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<td>Time: 4:30 – 5:30 PM</td>
<td>Time: 8:30 AM -12:30 PM</td>
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<td>Topic: Circular Motion</td>
<td>Topics: Research from Dr. Michael Peterson and hands on activities for all students and teachers! Don’t miss this!</td>
<td>Many Physics/Physical Science and multidisciplinary workshops to choose from.</td>
<td>High school teachers and college physics professors sharing ideas through talks, workshops, and show &amp; tell. A great event!</td>
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<td>Contact: Michael Tran at <a href="mailto:michael.tran@csulb.edu">michael.tran@csulb.edu</a> to RSVP and request parking before 10/8.</td>
<td>Contact: Michael Tran at <a href="mailto:michael.tran@csulb.edu">michael.tran@csulb.edu</a> to RSVP.</td>
<td>Info/Registration: <a href="http://www.cascience.org/csta_conf_home.asp">http://www.cascience.org/csta_conf_home.asp</a></td>
<td>Info/Registration: <a href="http://www.scaapt.org">http://www.scaapt.org</a></td>
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Check out more upcoming events at www.physicsatthebeach.com

PhysTEC Demo Days

The second Thursday of every month is a chance to collaborate with other physics teachers and share your favorite fun demonstrations and activities. Each month will focus on a different topic. This month, Oct. 11, the topic will be Circular Motion. Last month we had a great crowd of 41 exploring Forces and Motion. See the photo highlights on the back page. We hope to see you at 4:30 on Oct 11 in Room 280 in HSCI. Free (and close!) parking is provided and so is food!

Book Reviews

Two excellent recent popular physics books are How to Teach Relativity to Your Dog by Chad Orzel and For the Love of Physics by Walter Lewin.

How to Teach Relativity is Orzel’s sequel to How to Teach Physics to Your Dog. That book dealt with Quantum Physics, his new book deals with both special and general relativity. Presented very humorously, Orzel explains relativity to his talking dog who interrupts often with questions the reader may have. Starting with Newtonian/Galilean relativity, Orzel explains the how Einstein and others developed the ideas of special relativity, including full chapters each on time dilation, length contraction, 4D spacetime, momentum, E=mc². Much of the discussion is done using spacetime diagrams. It is presented at a level equivalent to a college course in relativity. While it is goes into greater depth than needed for a high school physics course, it provides the deeper understanding needed to teach special relativity well. The final five chapters tackle particle physics, general relativity, black holes, cosmology and unified theory.

MIT Physics professor Walter Lewin became a YouTube phenomenon over the last 5 years with over 4 million views of his Physics lectures. What comes across most in his lectures is his passion and enthusiasm for the subject of Physics and for teaching. This passion is also evident in his book For the Love of Physics (subtitled: From the End of the Rainbow to the Edge of Time- A Journey Through the Wonders of Physics). Lewin presents many topics from Physics (forces, motion, optics, waves, electricity and magnetism) without the math involved. He includes many of the demonstrations that he does in his lecture. His explanation of rainbows is must reading if you present this topic in class!

The last third of the book is devoted to Lewin’s research in X-ray astronomy (launching balloons to the edge of the atmosphere to observe X-rays coming from distant stars and galaxies) and then extends that into other cosmological ideas.

Since Lewin’s book is meant for a wider audience than a high school physics class, he does not go into the math involved in each topic. However, he does such an excellent job in explaining some the fundamental principles involved and pointing out examples of the wonders of Physics that can be seen around us everyday, that this book can be a valuable resource for Physics teachers.

“To me, Physics is a way of seeing—the spectacular and the mundane, the immense and the minute—as a beautiful, thrillingly interwoven whole.”

Walter Lewin

If you have any questions or would like to contribute to this newsletter, please contact me at dwyer_k@auhsd.us or visit the website www.physicsatthebeach.com
Highlights of September’s Demo Day: Forces and Motion

Emily prepares to show Newton’s 1st Law with a “diving pen” atop an embroidery hoop and Coke bottle.

Matt explains the principles of projectile motion with a ballistic cart.

Erica demonstrates Newton’s Law of Inertia using an egg dropping into a beaker when the tray is knocked away.

Carey and friends try to break eggs in a sheet to examine forces and impulse.

Adam has Shawn and Eric trying in vain to overcome the force of friction. Not even the Mythbusters could!

Bill takes us for an elevator ride with a mass and scale.

PhysTEC Open House: Oct. 27 (Saturday) 8:30-12:30

CSULB’s Physics Fall Open House will be held Saturday October 27 from 8:30 – 12:30 in PH-140. A faculty talk on current research, hands-on activities and a chance to interact with all levels of the physics community: high school students, college students, graduate students and college faculty. There will be a panel discussion with CSULB Physics students discussing what you can do with a Physics degree. An excellent brunch will be served in the Chartroom. Invite students who may be interested in studying physics, so they can experience Physics at the Beach!

Go to www.physicsatthebeach.com for more information and to register online.