

WebSights features announcements and reviews of select sites of interest to physics teachers. All sites are copyrighted by their authors. This column is available as a web page at PhysicsEd.BuffaloState.Edu/pubs/WebSights/. If you have successfully used a physics website that you feel is outstanding and appropriate for WebSights, please email me the URL and describe how you use it to teach or learn physics—macisadl@buffalostate.edu.

•Physicist snowflake decorations; Einstein catalogued

www.symmetrymagazine.org/article/december-2014/deck-the-halls-with-nobel-physicists
einsteinpapers.press.princeton.edu

A delightfully odd holiday-nerd-ish treat for anyone into paper and crafts. Print out the designs, fold the paper, cut with scissors and craft knife and voilà: radially symmetric Einstein, Curie, and Schrödinger “snowflakes.” Also, even more Einstein—80,000 catalogued items in an online database: Princeton University Press, in partnership with Tizra, Hebrew University of Jerusalem, and California Institute of Technology, announced the launch of *The Digital Einstein Papers*. “This unique, authoritative resource provides full public access to the translated and annotated writings of the most influential scientist of the twentieth century.”

•Vortices: Pool vortices, Physics Girl, water vortices, divers and dolphins

www.physicsgirl.org/about/#
www.youtube.com/watch?v=pnBJEg9r1o8
www.youtube.com/watch?v=72LW7BU8Ao
www.wimp.com/dolphinbubbles/
www.youtube.com/watch?v=ks3aQhEohTE
www.youtube.com/watch?v=DKX5QPMSjPQ
www.youtube.com/watch?v=hvjpFB6FmUQ
www.youtube.com/watch?v=UBov68Lj_RU

Dianna Cowern, a physics outreach coordinator at UCSD, has started a YouTube channel called Physics Girl. Her channel includes a fascinating vortex ring demonstration dragging a dinner plate along the surface of a swimming pool, for which her explanation ignited considerable discourse on PHYS-L. Debate primarily concerned whether the vortex actually ended at the surface or whether the ring in fact continued and closed through another path through the air, at the surface or back through the water. Regardless, the phenomenon is very cool, as are her other videos. More videos showing machines to make air vortex rings underwater and of human divers and dolphins blowing, mechanically forming, tearing apart, and otherwise experimenting with and playing with these rings also emerged from that discourse and related searching.

Videos posted to PHYS-L by Bob LaMontagne, Brian Whatcott

•Google Cardboard: A virtual reality headset for \$10?

www.google.com/get/cardboard/
www.youtube.com/watch?v=SxAj2lyX4oU
www.oculus.com/order/

Google’s offbeat view-master-like device stereo viewer con-

sists of cardboard, lenses, a magnet, and washer pair—used as a control switch to trip the gate magnetometer used as a compass in most recent, modern smartphones, and a smartphone. The idea is your smartphone shows two stereo images, the lenses deliver an appropriate image to your eyes, and your brain sees a stereo image. The device is strapped to your head (or held to your head in your hands) and as you look around, the smartphone accelerometers and gyroscopes track your head motion to modify the images, so you walk through a virtual reality space (which may even be from stereo images of the real world, say, a museum). The developers of the Oculus Rift VR goggles aren’t worried by the low quality, but we amateurs can start playing with VR for \$10 or less, which is pretty cool.

•More resources for recruiting women to science

www.nsf.gov/news/special_reports/science_nation/scigirlstv.jsp
pbskids.org/scigirls/video
newsoffice.mit.edu/2014/sophisticated-medicine-sangeeta-bhatia-1215
www.whitehouse.gov/women-in-stem

–PBS “SciGirls”: The NSF and other corporate funders have supported a new season of “SciGirls,” the award-winning PBS/Twin Cities Public Television project STEM program targeting middle school girls.

–Biomedical Engineering with Sangeeta Bhatia: A NOVA Science Now video describing the life of an MIT bioengineer, emphasizing normalcy—the need for balanced life, family life, role models, and empowerment of women to help attract women into STEM.

–White House profiles outstanding STEM professionals with its series “The Untold History of Women in Science and Technology.”

•Standing vibrations on strings via smartphones inside an acoustic guitar

www.youtube.com/watch?v=INqfM1kdfUc
www.youtube.com/watch?v=ttgLyWFINJI

One of my physics of sound students brought a series of YouTube videos to my attention with her final project for the course. These videos pretty uniformly show an iPhone placed inside the body of an acoustic guitar so as to make video recordings of the guitar strings against bright skylight, relying on the frame rate of the iPhone (just under 30 frames/second according to published sources) to strobe the strings. The result is an impressive real-time visual and conceptual link between musical performance and the elastic string driven by an oscillator I routinely set up for classroom analysis during the course. The Johnny Cash is just a bonus.

Pointed out by Casey Moden