

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.

An Audio Physics/Science Ed Podcast by Teachers: Lab Out Loud; laboutloud.com

Lab Out Loud (laboutloud.com) is described as “a podcast and blog that discusses science news and science education with leading scientists, researchers, science writers and other important figures in the field” by Wisconsin science teachers Dale Basler and Brian Bartel. Dale Basler teaches physics at Appleton East HS, and also consults on education and designs web pages. Brian Bartel teaches biology and chemistry at Appleton West HS. I listened to the Episode #65 podcast regarding the NGSS Framework document recently published by the NAP at www7.nationalacademies.org/bose/Standards_Framework_Home_page.html, in which one of the framework authors describes how ideas of inquiry from the almost 20-year-old National Science Education Standards are articulated in greater detail within the new framework. I also enjoyed Episode #66 on pseudoteaching with Frank Noschese. *Lab Out Loud* blog entries on “Physics in a Farmers Insurance Ad” and a “Dashboard Physics Lesson” were also nice and classroom-centric—think about Rhett Allain’s whimsical *dotphysics* blog (www.wired.com/wiredscience/dotphysics) with an intense focus on “how do I use this in a HS physics classroom activity?” There are also blog entries about professional issues facing science teachers everywhere and some specific to Wisconsin such as teachers’ union busting political in that state.

Basler posted on Lab Out Loud and the podcast on Next Generation Science Standards Framework on the Modeling-L LISTSERV

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iOS physics learning apps (for Apple products iPhone, iPod Touch, iPad)

For those of you fortunate enough to have iPads for teaching physics, December 2011 *WebSights* discussed the must-have Video Physics App on iPad 2 by Vernier Software www.youtube.com/watch?v=pPKRBqskC3M, and as a result I have been made much more aware of the rapidly multiplying offerings of iOS apps appropriate for learning introductory laboratory physics. Apple’s line of iOS products contain a dizzying variety of cameras, accelerometers, digital gyroscopes and compasses, GPS chipsets and microphones (even within the same families of devices) so several of these products function best with particular devices. Most of these apps are \$0.99 each from Apple’s iTunes Store, and most app sellers have related offerings, so you should peruse the accompanying websites for those as well as reviews.

Sound analysis / audio input analysis / digital oscilloscopes and Fast Fourier Transform (FFT) apps: SignalScope, FourierLite and db Sound Measurement.

itunes.apple.com/us/app/signalscope/id284781777?mt=8

itunes.apple.com/us/app/fourier-lite/id386084443?mt=8

itunes.apple.com/us/app/db-sound-measurements/id375601597?mt=8

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Also interesting are a series of applets that effectively work as digital stopwatches using a combination of a button release upon watching a pitcher release a ball together with a press when the viewer sees the ball hitting the catcher’s glove to measure the speed of baseball pitches, which are claimed to work within 2%.

itunes.apple.com/us/app/iradargun/id357546938?mt=8

Accelerometer, GPS and compass measures.

itunes.apple.com/us/app/iseismograph/id319600048?mt=8

itunes.apple.com/us/app/mobile-science-acceleration/id389821809?mt=8

itunes.apple.com/us/app/motionx-gps/id299949744?mt=8

itunes.apple.com/us/app/elevation-pro/id294190055?mt=8

itunes.apple.com/app/seecompass-visual-navigation/

Levels and Clinometers: Angular incline measures, including video angular measures.

itunes.apple.com/us/app/ihandy-level-free/id299852753?mt=8

<http://itunes.apple.com/app/seelevel-visual-clinometer/id333213338?mt=8>

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Even more video analysis apps

Finally, the most sophisticated applets (to my mind) produce real time or near-real time speed measurements of everyday objects (people, vehicles, balls etc) by simply pointing the iOS device camera at the objects and identifying the object together with approximate size and ranges where known. At least one of these programs uses stadiometric ranging (calculating angular size of objects of well known linear size, and / or ranging to objects on the ground by video sighting and clinometry with accompanying trigonometry) to determine range and velocity. Several have auto recognition for moving objects and will record motion if the object is too small to locate by auto detection. Some apps simply monitor the camera for changes in the field of view and then record or email or log activity (like a naturalist’s or big game hunter’s unattended game camera).

itunes.apple.com/us/app/speedclock-velocity-radar/id400876654?mt=8

itunes.apple.com/app/sprinttimer-photo-finish/id430807521?mt=8

itunes.apple.com/us/app/motion-detector/id331443079?mt=8

itunes.apple.com/us/app/vm-alert-video-motion-detector/id387523411?mt=8

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