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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.*

• *Oscilloscope Music: "How to Draw Mushrooms on an Oscilloscope With Sound," by Jerobeam Fenderson*

tinyurl.com/WS-osc-shrooms
youtube.com/user/jerobeamfenderson1/
oscilloscopemusic.com/
jerobeamfenderson.tumblr.com/

A recent EE Times/Life note (EEWeb Oct 22, 2018) introduced me to the trippy works of oscilloscope musician Jerobeam Fenderson, who uses two channel (sometimes) musical audio signals produced by software/synthesizers, which are then fed into an oscilloscope set in X-Y mode to create visual art. One track controls vertical and the other horizontal position. I can remember being very proud of myself as an undergrad creating Lissajous figures on an o-scope with tuning forks and am completely bemused by this combination of sound, mathematics, music, and art. Mr. Fenderson constructs mushrooms using ¼ of a sine wave displayed vertically on the screen, then adds and multiplies simple waves in and out of phase, adds square waves and divides frequency by *n*, etc. to create multiple dancing mushrooms—with the right mathematics you can draw anything you want, but you also want it to sound cool. He also has multiple tutorials (the six-part basic tutorial series is nice) on YouTube and Instagram for physicists, mathematicians, and budding oscilloscope musicians. You can also find his Patreon account, or purchase recordings, or download files. Just tons of nerdy fun, with lots of mathematical picture drawing.

• *"Say it with Chimes: An Engineering Approach to Wind Chime Design," by Lee Hite*

leehite.org/Chimes.htm

Another technical artistry and physics website discussing the design of windchimes in extraordinary detail, including much basic and advanced practical physics of open pipe chimes and their construction (cut long and grind to pitch). Design, calculations, material considerations, tuning, scales, psychoacoustics, and an extended section on the science of chiming with much linked video and audio. One of my colleagues uses the site in his "Physics of Sound" course.

Submitted by David Abbott of Buffalo State Physics

• *New NAS Publications: How People Learn II and English Learners in STEM Subjects*

nap.edu/catalog/24783/
nap.edu/catalog/25182

The U.S. National Academy Press has released a number of freely downloadable reference works of interest to physics and STEM educations. First, the very influential 2002 NAS work *How People Learn: Brain, Mind, Experience, and School: Expanded Edition* has been followed up by a new *How People Learn II: Learners, Contexts, and Cultures*. *HPL I* was widely used in preservice STEM teacher preparation at my institution and I expect the new *HPL II* will be as well. The book is not intended to guide immediate answers to specific dilemmas, but to guide research and practice. Specific chapters include discussions of culture, biology and context, learning and brain development, learning processes, knowledge and reasoning, motivation, implications, digital technologies, learning across the lifespan, and research agenda. An important read if you plan to write an NSF proposal.

English Learners in STEM Subjects: Transforming Classrooms, Schools, and Lives, edited by Francis and Stephens (2018), reviews recent literature and discusses access, language, meaning-making, instructional strategies, contextual influences, educator workforce (teacher) preparation, assessment, policy, and ends by drawing conclusions, making recommendations and laying out a research agenda. Having recently volunteered teaching physics to Kurdish refugee children in Germany (with little shared language or even an alphabet), I particularly appreciated the finding that it is incorrect to assume "that English proficiency is a prerequisite to meaningfully engage with STEM learning." Chapter four on instructional strategies was particularly interesting.

• *The OAPT Newsletter*

newsletter.oapt.ca/

I continue to be impressed with the quality and quantity of articles published in the free online newsletter of the Ontario Canada section of the Association: the OAPT produces very nice short works for practicing physics teachers. Since September, this journal has published eight new articles for physics teachers, most recently on activities for teaching motion, a new collection of YouTube videos for a Physics for Life Sciences course at the University of Guelph, video and the rotating fish tank, accommodating multiple special needs learners in one classroom, an exploring extrasolar planets classroom activity, spiral mathematics for grades 9 and 10 applied physics, the future of physics teaching and a guide for strengthening the feeling of competence amongst young women physics students. The "Demonstration Corner Archives" is a gem collection for working physics teachers, and "PER Corner" is also well-focused on practitioner needs. Bravo, OAPT!