

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.

• **Soap Bubbles Science: Time Warp – Discovery Channel with Keith Johnson**

<https://www.youtube.com/watch?v=eV6Wh-KX3bY>
BubbleArtist.com
https://www.youtube.com/watch?v=b0eCAL_t7pg

Nice guide to messing with bubbles—how you can push your hand into and durably handle bubbles, construct bubbles within one another, fill same with smoke, and book an expert showman if you so choose. At least you can try your own bubble experiments with greater success. The high-speed video of bubble destruction is very entertaining. Also see many YouTube videos of freezing bubbles (gorgeous crystal growth)—if you live in a cold place (like -15°C) then here's another cool bubble experiment. I'm now hoping for a colder winter!

• **Astronomical Nucleosynthesis Periodic Table Diagram**

<http://apod.nasa.gov/apod/ap160125.html>
<https://en.wikipedia.org/wiki/Nucleosynthesis>

A new graphical Periodic Table of the Elements coded to reflect astronomical origination mechanisms, by Cmglee.

Submitted to PHYS-L by Anthony Lapinski

• **John B. Johnston's collection of 50+ physics demonstrations**

<http://tinyurl.com/WS-Johnston>

John B. Johnston, retired NY HS physics teacher, has placed a collection of short public domain PDF documents describing 50-odd physics demonstrations on a website hosted at Union College physics. He suggests the activities are suitable for teachers with financial constraints, or able students who may be interested in projects. Some activities require limited shop skills.

Submitted by J.B. Johnston, AAPT Fellow

• **Cool new and old acoustics videos: Acoustic propulsion and some works of Alvin Lucier**

tinyurl.com/WS-AcousticProp
tinyurl.com/WS-RS-acousticProp
YouTube Alvin Lucier
en.wikipedia.org/wiki/Alvin_Lucier

Dan Russell has two videos first demonstrating acoustic propulsion and then in a follow-up video measuring the thrust with Christmas tree ball ornaments as Helmholtz-like resonators. Russell includes reference to the textbook *Notes on Acoustics* by Uno Ingard analyzing the effect (directionally shedding a jet of ring vortices). The RimStar.org YouTube

website also shows the effect using plastic soda bottles with exhaust made visible with an incense stick.

A student drew a colleague's attention to YouTube videos of the works of American experimental music composer Alvin Lucier, particularly "I am Sitting in a Room" (1969) and "Long Thin Wire" (1977). "Room" features the artist initially recording a vocal statement "I am sitting in a room..." then playing the recording back into the room while rerecording the sound and repeating the process. Each live sound-record generation adds distortion (eventually to unintelligibility) by the acoustical resonances of the room and the recording system (which interestingly accumulate to and process the sound). What strikes me as particularly cool are recreations of the same activity by students using modern equipment (laptop and Audacity in the shower). "Wire" uses piano wire, an electromagnet, oscillator, and amplifier left running to create feedback on the wire. If you teach musical acoustics, recreating Lucier's performances with modern technology is a very cool student project.

*Submitted by Stephen Papapanu and David Abbott,
SUNY Buffalo State*

• **NAP Reports: Integrating Discovery-Based Research into the Undergraduate Curriculum Reaching Students: What Research Says About Effective Instruction in Undergraduate Science and Engineering Science Teachers' Learning: Enhancing Opportunities, Creating Supportive Contexts (2016)**

<http://www.nap.edu/catalog/21851/integrating>
<http://www.nap.edu/catalog/18687/reaching>
<http://www.nap.edu/catalog/21836/science>

Two great reports for undergraduate college physics faculty, and a third discussing how to support K-12 science teachers transitioning to Next Generation Science Standards (NGSS)-based teaching.

• **Another cool new homopolar motor YouTube video**

tinyurl.com/WS-ALfoilmotor

A weakness: I love playing with and analyzing these things. This one uses the ubiquitous AA-cell and magnets but on an Al foil surface, somewhat reminiscent of an MHD drive. My job is so much fun.

*Submitted to OPHUN-L by Anthony Mangiacapre, St Mary's
HS Physics*