

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/](http://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](mailto:macisadl@buffalostate.edu).

### • Summer professional development for physics teachers

[phystec.org/pd/](http://phystec.org/pd/)  
[modelinginstruction.org/professional-development/upcoming-workshops/summer-2019/](http://modelinginstruction.org/professional-development/upcoming-workshops/summer-2019/)  
[aapt.org/Conferences/sm2019](http://aapt.org/Conferences/sm2019)

As is traditional every May column, I remind readers there are many summer physics teaching professional development opportunities, and research experience for teachers (RET) opportunities, kindly collected at the PhysTEC website clearing-house. In particular this summer there will be over fifty-five Modeling physics, biology, chemistry, middle school and physical science courses, and one astronomy course offered in 16+ states across the US. Also consider attending the July 20-24 AAPT National Meeting in Provo UT / BYU, and/or the Physics Education Research Conference (PERC) immediately following it. Have a great summer.

### • Physics and STEM Communication via Dance

[sciencemag.org/news/2019/02/winner-year-s-dance-your-phd-contest-turned-physics-art](http://sciencemag.org/news/2019/02/winner-year-s-dance-your-phd-contest-turned-physics-art)  
[gonzolabs.org/dance/2018-videos/](http://gonzolabs.org/dance/2018-videos/)  
[tinyurl.com/WS-ProteinSynth](http://tinyurl.com/WS-ProteinSynth)

Because some of my own preservice teachers have made instructional videos describing ionization and ion drift in sparks using physical actors, I have recently been watching folk try to communicate science ideas by body movement, particularly the “Dance Your Ph.D.” competitions. The 2019 competition was won by condensed matter physicist Pramodh Senarath Yapa, from the University of Alberta in Edmonton, Canada with his swing dance performance of “Non-Local Electrodynamics of Superconducting Wires: Implications for Flux Noise and Inductance.” He illustrates electrons moving through wires, then forming Cooper Pairs (big xi vs little xi played by holding hands dancing close or at arms’ length) then followed by the introduction of spin impurity. Wire depth penetration is also portrayed by dancers entering more deeply into the lane of the wire. These videos are sure to delight lovers of the absurdly nerdy, and are a welcome reminder for our students that physicists can be unserious, cool and have fun and be well-rounded people leading rich lives.

The final video links to the semi-legendary 1971 Paul Berg (Stanford) Protein Synthesis film which is worth seeing even for non-physicists. One of our recent summer teachers made a video that addressed the electrostatic bonding energetics of the hydrolysis of ATP (breaking bond energetics are widely misconstrued) and the Berg film actually portrays this by firing puffs of smoke. I may have even learned a little biochemistry. The trippy 60s music and recitation of Lewis Carroll’s Jabberwocky with a crowd of hundred dancing on the athletic fields as proteins are assembled and indexed certainly adds to the fun.

### • Safety Equipment and an Internet Video Warning: The Self-actuating Fire Extinguisher Grenade

[tinyurl.com/WS-FireBall1](http://tinyurl.com/WS-FireBall1)  
[tinyurl.com/WS-FireBall2](http://tinyurl.com/WS-FireBall2)  
[tubefilter.com/2018/05/21/grant-thompson-king-of-random/](http://tubefilter.com/2018/05/21/grant-thompson-king-of-random/)

This is another online safety item (like making dry ice bomb videos) that physics teachers, but perhaps not their students should know about. As working science teachers know, their classroom ABC extinguishers use an inert dry nonconductive powder (monoammonium phosphate) to extinguish fires, and a standard extinguisher holds about 4kg of this chemical which can be distributed in a controlled fashion on demand. All good so far. Recently a newish product called a fire extinguisher grenade has become available that contains about 2kg of the same material in a thin styrofoam shell wrapped externally with a fast burning gunpowder fuse leading to a black powder bursting charge within the center of the sphere (the whole device is usually shrink wrapped in plastic with vents). This device can be suspended over an unattended source of concern, and in the presence of naked flame the grenade will explode, showering the fire and surroundings with fire suppressant. Another valuable product for specific applications. There are some nice videos of this interesting product (small ones cost \$40 from Amazon) and an eye-catching video from “What’s Inside?” shows the ball operated with slow motion video and dissected.

Problematically, the “What’s Inside?” video protagonist decides to detonate the extinguisher while holding it in his hand, which is a terrible idea – every Halloween and New Year’s finds folk injuring themselves by holding detonating fireworks. Simply wrapping your fingers around the wrong thing at the wrong time can remove them. While this is a good product to know of and understand, this is a terrible example set by the video maker. Unfortunately, this sort of thing happens to YouTube science video folk and can have serious consequences for our students inspired to emulate them, something also encountered by the “King of Random” YouTube channel host, Grant Thompson. Talk to your students if they ask you about this kind of thing.

### • Jade Tan-Holmes’ “Up And Atom,” also @upnatom

[tinyurl.com/WS-SchEquipnatom](http://tinyurl.com/WS-SchEquipnatom)  
[tinyurl.com/WS-upnatom](http://tinyurl.com/WS-upnatom)  
[twitter.com/upndatom](https://twitter.com/upndatom)  
[careerswithstem.com.au/profiles/youtube-science-channel-host-jade-tan-holmes/>](http://careerswithstem.com.au/profiles/youtube-science-channel-host-jade-tan-holmes/>)

Australian YouTuber Jade Tan-Holmes’ Up and Atom video channel features lively and entertaining introductory videos about popular physics explained at the everyman from the Bachelor’s degree level. Ms. Tan-Holmes has over 55 fairly approachable videos on mathematics, logic, computation and physics, and most notably Quantum Mechanics (I found her whilst looking for a friendly layman’s introductory video on the Schrödinger Equation). She is an infectiously enthusiastic young woman, putting her physics degree to good work and not afraid to try to communicate physics and mathematics.