

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/](https://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).

### • **Physics 101 / AP Physics 1 review with Dianna Cowern**

[youtube.com/c/physicsgirl/playlists](https://youtube.com/c/physicsgirl/playlists)  
[tinyurl.com/WS-TMU](https://tinyurl.com/WS-TMU)

“Physics Girl” Dianna Cowern has started a new online series of 20 explanatory videos dedicated to AP Physics 1 topics (mainly mechanics). So far her series seems fun, stunningly enthusiastic (she speaks quickly but there is closed captioning), and enjoyable with many exciting video examples, though a little scattered and definitely traditional-expository (you watch Dianna work physics problems, show cool video examples, and wax enthusiastic). She could include units more frequently in her plots and calculations as well. I’m expecting this new series will be a smash hit for informing our students (who are now watching the “Free-Body Diagram” video), and given the quality of Cowern’s previous work this seems likely. I have added this to my other video series link to *The Mechanical Universe* as suggested video watching for my online freshman mechanics course this semester.

### • **Quick and dirty webcam hack for your students**

<https://www.ipevo.com/products/mirror-cam>  
<https://tinyurl.com/WS-IPEVOrev>  
<https://tinyurl.com/WS-docCamHack>

IPEVO is a classroom technology company that makes multiple desk cameras for online teaching, and notably they sell a folding plastic hanger that clips to the top of an open laptop screen, suspending a mirror over the camera so that a pen and paper pad (or small whiteboard) placed upon the keyboard is readily viewed by the camera. Think of a downwards periscope using your laptop camera to view things you place on the keyboard, on a piece of cardboard or other surface that prevents key pressing. IPEVO sells these rather inexpensive plastic mirrors, and provides a lovely piece of freely downloadable support software called “IPEVO Visualizer Software” from their website that corrects image reversals, keystone, contrast, white balance, etc. Bravo, IPEVCO! Others have noted that a simple dollar store makeup compact mirror can be attached to a laptop screen with rubber bands, and is similarly effective, and can be used with a simple image reversal software like photobooth, or even better with the excellent IPEVO software. Every one of your students can have their own simple laptop-based desk cam for about a dollar, and one can use the hack as a low-cost visualizer/enlarger for vision-impaired students.

### • **Free online quantum physics workshop for HS teachers: “ICQ’s Schrödinger’s Class”**

<https://uwaterloo.ca/institute-for-quantum-computing/programs/schrodingers-class>

The University of Waterloo’s Institute for Quantum Computing (ICQ) is offering three free live, online evening sessions in November and December for teachers to deepen their understanding on quantum mechanics and to learn how to introduce QM topics to their students. As well as the teacher tutorials, lesson guides, ready-to-go classroom activities, and classroom discussion guides will all be provided. Application/registration is required.

*Suggested from the Ontario Association of Physics Teachers mailing list*

### • **Hacking coronavirus classroom filters**

<https://clarkvangilder.com/2020/08/04/blown-away/>  
<https://clarkvangilder.com/2020/08/22/poor-ventilation-in-schools/>  
<https://elemental.medium.com/air-purifiers-air-filters-and-the-best-diy-hacks-to-reduce-the-coronavirus-risk-14169e8839c5>  
<https://www.wired.com/story/could-a-janky-jury-rigged-air-purifier-help-fight-covid-19/>  
[https://www.youtube.com/watch?v=kH5APw\\_SLUU](https://www.youtube.com/watch?v=kH5APw_SLUU)

Vangilder posts two wonderful discussions on the physics, capacities, efficacy, purchase choice, and placement of filters improving classroom ventilation and air filtering to make classrooms safer from coronavirus. Many others provide a number of clever hacks manufacturing room filters using 20-in square box fans and 20-in furnace MIRV13+/HEPA filters available from any hardware store (off-brand filters are cheaper). Simply taping a filter (4 in deep rather than 1 in) to the intake side of a fan (so suction helps hold it tight) is an adequate start. A more advanced idea is to assemble a cube 20-in long on a side with outward flowing 1-in filters held together/sealed with plastic packing tape, where one side of the cube is a 20-in box fan blowing room air into the cube. The cube has easier flow due to more surface area (as does the deeper filter) so less resistance, meaning you can throttle back the fan and reduce noise. Obviously ducting the fan to eliminate inefficient corner vortices where the air isn’t being effectively pushed by the blade disk also will improve efficiency and allow the same filtering with a slower fan. Searching YouTube for “hack air filter” provides plenty of design ideas.

*Suggested by Jane Jackson, retired from ASU Physics.*