

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.

• **ACS Reactions, dilution and sewage treatment**

(Or: *Yes, Virginia, it's OK to pee in the ocean at the beach*)

tinyurl.com/WS-ACS-pee

cbc.ca/1.2744062

Kathleen Falconer directed me to a recent YouTube video from the excellent weekly American Chemical Society Reactions series on everyday chemistry for the layman. Topics include common medical substances and conditions like caffeine, Tylenol, marijuana, and allergies; food chemicals like MSG, tryptophan and those in peppers and onions; everyday phenomena like leaves changing color in the fall and snowflakes, and more pedestrian topics like poisons from the “Game of Thrones” TV series, the chemistry in “Breaking Bad,” why dogs sniff one another’s butts and should you pee in the ocean at the beach. This final topical video describes the chemistry of human urine and simple dilutions provoked some controversy according to the CBC news link, which points out the video could be misused to justify sewage non-treatment, an unfortunate feature of some coastal cities like Victoria, BC.

• **Physics teacher expectations and backlash**

<http://modelinginstruction.org/teachers/back-to-school-advice-for-modelers/>

At this point in the academic year physics teachers often encounter complaints from students, parents, and administrators that arise from the demands presented in learning physics—a sometimes difficult subject. Modeling physics is a curriculum that places unusual kinds of responsibilities on students (extended discourse in whiteboarding etc) and modelers and other teachers perceived as innovators are particularly vulnerable to backlash. Jane Jackson and others from the American Modeling Teachers Association (AMTA) have prepared a nice collection of materials for use in addressing these difficult situations. While these are freely available, the AMTA has much of worth behind the paid membership wall as well.

• **PhD webcomic TV channel on YouTube**

xkcd.com

phdcomics.com/

phdcomics.com/tv/

As a regular reader of webcomics, I enjoy Randall Munroe’s often physical-mathematical xkcd.com, which I frequently show in classes and often see in commercial physics-related publications. Munroe’s books, his What If? series, posters and T-shirts are also recommended. Jorge Cham’s “Piled

Higher and Deeper” or PhD series is also quite amusing, though it mostly addresses non-science content issues documenting science graduate student life. However, Cham also has a growing webchannel dedicated to science culture and content videos—“two minute thesis,” “things explained” (eg., BICEP findings very much in debate), cosmic inflation, physics of fusion (with some simulations), “detours,” and other interesting scientific brain candy featuring much physics.

• **AIMS Education Foundation moves K-9 science and math lessons online**

aimsedu.org/

I recently received an email flyer noting that the nonprofit AIMS Center for Math and Science Education at Fresno Pacific University was encouraging K-9 grade school teachers to sign up for limited electronic access to their (mainly) K-9 curricular activities. The AIMS activity books produced since 1981 are a K-9 staple and while I’m not generally supportive of single-phenomenon stand-alone STEM activities and lessons, the AIMS activities are about as good as it gets for such. Activities are all teacher-edited, extensively tested with students, and contain 8x10 posters and worksheets. For K-9 teachers looking for a science or math lesson in a package, they are ready to go, and AIMS is now making them available electronically.

• **Inertial balance videos for learning the difference between mass and weight**

tinyurl.com/WS-InertBal1

tinyurl.com/WS-InertBal3

edpuzzle.com/

On our local alliance list, Ed Gruber of Eastchester Senior HS recently posted the following: “[I] ...came up with these two gems. One shows an inertial balance vs. a scale, then some old footage of the balance from skylab. The second video shows the inertial balance from the ISS. You can skip around and show the first minute of the first video, and fast forward the second video to show the astronaut operating the ISS balance with and without his mass on it. It’s comical watching him mass himself!”

Tim Coughlin of Lancaster Middle School followed up that post with the observation that edpuzzle.com provides facility in editing online videos to crop appropriate segments for brevity, or to eliminate inappropriate sections of videos, or to add voiceovers for classroom use, etc.