

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.

• Summer professional development for physics teachers

phystec.org/pd/
modelinginstruction.org
aapt.org/Conferences/sm2018

As is traditional every May issue, 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 clearinghouse. In particular this summer there will be over 60 Modeling Physics (and related) courses offered across the United States (15+ states) and in Hong Kong. Also consider attending the late July AAPT National Meeting in Washington, DC, and the Physics Education Research Conference (PERC) immediately following it. Have a great summer.

• Kelly O'Shea's Kinematics Card Sort

kellyoshea.blog/2018/03/20/multiple-representations-of-momentum-transfer-the-card-sort/
kellyoshea.blog/2017/11/10/stacks-of-kinematics-curves-as-a-card-sort/
kellyoshea.wordpress.com

Acclaimed physics blogger and teacher Kelly O'Shea from LREI school in NYC has developed a "card sort" activity that involves students cooperatively reasoning through the process of sorting multiple representations of kinematics situations. I quote Kelly from the Modeling Listserv:

"[I]f you want to read a couple of long posts (with photos!) about teaching physics (including free materials you can use in your classes if you'd like and documents you can edit and modify yourself!), you can find the links below.

I posted this one today:

kellyoshea.blog/2018/03/20/multiple-representations-of-momentum-transfer-the-card-sort/

And I posted this one in November:

kellyoshea.blog/2017/11/10/stacks-of-kinematics-curves-as-a-card-sort/curves-as-a-card-sort/

Both posts involve changing parts of my old packets into more interactive activities that require students to work together, be creative, and discuss their thinking in small and large groups."

• Real-world small arms ballistics: "Hatcher's Notebook"

en.wikipedia.org/wiki/Julian_Hatcher
tinyurl.com/WS-HatcherVideoReview
books.google.de/books?isbn=0811749177

Oftentimes introductory students are interested in real-world firearms and the complex, non-intuitive behaviors of real-world bullets. I recently encountered a famous specialist work, "Hatcher's Notebook: A Standard Reference for Shooters, Gunsmiths, Ballisticians..." by U.S. Army Major General of Ordinance Julian Hatcher. That work discusses many of the common questions for physicist firearms aficionados, including my favorite (Chapter 20: "Bullets from the Sky") addressing "What happens when you fire a machine gun vertically in the air?"

• Digital oscilloscope basics and beyond

tinyurl.com/WS-DigOscope
tinyurl.com/WS-DigOscope2
edn.com/user/Arthur%20Pini

As a physicist of a certain age, I learned and taught others how to use very limited simple analog oscilloscopes, which had a certain level of voodoo associated with triggering, but otherwise were straightforward. Current-generation digital oscilloscopes are extraordinarily powerful software-driven devices and require their own expertise. This laboratory cognitive overhead can be partially acquired from the large collection of 32+ quite short notes by Teledyne LeCroy engineer Arthur Pini.