Hello science teacher friends! This can be a tough time of year, past the excitement of winter break, heading toward testing, and yet still too far from the summer. This can also be a critical time for our students, when just a little added excitement can really spark what they need to push through it all. By this time, they’ve settled into the school year, know their teachers, routines, and expectations pretty well, so working to keep their engagement and wonder going can help them (and us) move through these grey months and on into spring! That’s why I hope this month’s resource can inspire them (and their teachers) to keep questioning, keep learning, and rediscover that sense of science wonder for the rest of the school year!

The Museum of Science (MoS) in Boston is a remarkable place that genuinely brings science, wonder, and excitement to all who are lucky enough to pass through its doors. In addition to all of the typical science museum offerings, the MoS Boston also hosts the world’s largest Van De Graaff generator (room-sized, and designed by Van De Graaff himself), is a certified zoo, and has a surprisingly helpful mathematics section with plenty of focus on statistics and data—an unusual but prescient offering. Their resources for teachers (see resources below) are also legendary. I’ve even run several summer STEM camps using their extraordinary Engineering is Everywhere (EIE) units (see below)! Last summer, my family and I had the pleasure of exploring the museum and enjoying a traveling exhibit on the science behind Pixar films. But for those of us who don’t live close enough to take a field trip, it may not pop up on your teaching radar. Luckily, while there, I noticed a podcast booth in the middle of the atrium, and I knew I had a new resource to cover for this column.

Pulsar: A Podcast is the MoS offering for exploring frequently asked questions by visitors to the museum. Each episode covers one specific issue and invites a museum staff expert or, more often, an outside expert on the topic. Being in Boston certainly has its advantages for the podcast. They often host experts from MIT, Harvard, Massachusetts General Hospital, and other worldwide-recognized science institutions to address each question. While this may make you wary of the podcast being over your students’ heads, don’t worry, they choose the best of the best, who can translate cutting-edge research and complex science concepts into understandable language accessible for anyone. Recent podcasts on Covid-19 (and there are quite a few of these among the 90+ episodes) feature Dr. Ashish Jha, an internist at Brown University and a frequent contributor to Good Morning America, among other popular shows, as the lead guest. The two podcasts he contributes to address the questions of “How did the Pandemic Start?” and “When will the Pandemic End?”, timely issues that nearly all students would be interested in.

Another thing about this podcast that I love for high school science teachers is that, unlike others we have looked at, they are short—it’s hard to find one that lasts more than 10 minutes. Research tells us most adults have about a seven-minute attention span, and, as we all spend our days with teenagers, this is a critical feature for any good resource for this age group. They also cover every topic from “Why is Our Lightning Purple” (a great way to spice up an electricity lesson) to “What Water Makes the Best Beer?” (pretty sure all high school students would want to hear this...
one—and yes, of course, it is covered in a way appropriate for the under-21 set). While I will admit I have not listened to all 90+ episodes, one of my favorites is “Why Do Wombats Poop Cubes?” As a mom and a teacher of teens, Wombat poop has come up on my science radar many times. “Will We Ever Cure Food Allergies?” is also something that touches many of us today and helps to understand not only how these develop, why they are exploding, but also offers hope for sufferers, including myself. Given the enormous span of these episodes, there is not a single high school science topic that they don’t touch!

As I have covered in recent articles, a topic that tends to get my students excited nowadays is to talk about equity in their world and its intersection with science. I will not deny that this can be daunting for many teachers and can bring nervous fear, given the highly polarized world we live in. If you have established a classroom culture where questions and insights are accepted as simply explorations, and you can ensure a safe space where all ideas can thrive, introducing controversies in science, particularly those from the past, can be an outlet for eager students. “Who Were the Blackwell Sisters?” is about pioneering sisters who opened medicine as a path for women in the 1800s, and can be a good introduction to the ideas of equity in science for students and teachers alike.

Given their short length and single-issue focus, I could easily see using these podcasts as an introduction to a unit (think about using one of their questions as a guiding phenomenon) or as a way to engage students in a topic that may otherwise seem a little dry for students (“What’s My Favorite Element?” is a great one for my never-ending quest to lighten up the periodic table unit). Another great use would be in conjunction with a project-based learning unit in which one possible outcome could be a student-made podcast on a given standard to demonstrate their knowledge. I often find that students have a hard time getting started on these open-ended tasks and need examples; these would be a great resource. And, of course, you could just use them as current science moments in class, allowing students to think a bit outside the box about the nature of science and encourage them to see science in the world all around them in an academic and entertaining way.

There are also a few episodes that I cannot speak highly enough of for teachers. I know for me, getting my professional learning in can be a challenge in this nutty world, but “The Future of Accessible Learning” gave me a few ideas for what to look for in both accessible, informal learning environments (museums, parks, and other field trip locations), and to try out in my classroom. “What is Data?” helped me think deeply about the need to expose my science students to the world of big data, something that they will encounter in almost any future work, and that we all need to think about as teachers as well. Finding short, good podcasts on educational topics is complex, and while these may not have been designed with our audience in mind, I was happy to find a few that fit the bill.

Because this is an educational podcast targeted for ages 12+, it has several unique aspects that are particularly helpful for teachers. First, as mentioned before, all podcasts last less than 10 minutes. This makes it an easy offering to integrate into an opening or closing activity for a lesson, homework assignment, or extension activity for those students who always seem to need just a bit more of a push. Also, all podcasts have transcripts available in English and Spanish, making them accessible to English language learners, students with hearing impairments, and students who may not have internet access at home (although downloading them to a device at school and listening to them is also a great idea). The podcasts are also available for free on all of the typical podcast networks (Apple, Spotify, etc.) but are also available directly from the MoS website, which means no apps are needed. You can access the episodes from any device that has internet, which can be helpful for kids and parents alike. I hope you find this resource useful and find joy with your students in these next few months!

Questions/comments/something you love with your students you would like to see reviewed? Contact me at holly.amerman@gmail.com.

ONLINE CONNECTIONS
Pulsar: A Podcast: https://www.mos.org/mos-at-home/pulsar-a-podcast
Museum of Science teacher resources: https://www.mos.org/educators
EIE Products: www.eie.org