Hello Science Education Leaders,

I hope you're surviving and finding some joy as we continue this stressful school year. I will again note some self-care resources here.

I hope that you plan to vote! I already mailed in my absentee ballot. Many municipalities allow in-person "absentee" voting at the end of October, where you can avoid the crowds of November 3rd.

Below are a few science education resources I've heard about. If you have announcements to share about science or STEM-related professional learning and resources, please send them my way for the next edition. A record of these emails can be found on my website: dpi.wi.gov/science/social-media.

Cheers,
Kevin

Learning Opportunities

- Monthly Book Study and Equity work - Oct 19th at 4pm
- Wisconsin Science Education Leadership Association - all welcome, Oct 15
- UW Field Day Lab – "Aqualab" learning game development fellowship
- Free NGSS Webinar Series from STEMScopes - Oct/Nov on current topics
- Northern Illinois University STEM Fest - throughout October
- AOPA Virtual Aviation STEM Symposium – Nov. 17th

Resources

- New DNR Snapshot Wisconsin Trail Cam Data Dashboard
- NGSS Now Newsletters - Do you receive this great resource?
- DPI Robotics Grants - due Oct 15th
- PBS Wisconsin Education - wants to hear from you!
- Edweek Blog on Building Relationships Virtually
- STEM Leadership Network Webinar on Virtual and Hybrid Learning (recording)
- Essential Elements in Science Standards Resources - w/ lesson ideas
- Science Forward Exam - Performance Level Descriptors
- OpenSciEd COVID-19 and Health Equity Units - at various grade levels
- We Are All Stardust - A Hike at Rib Mountain

- Science and Engineering Practices during COVID-19 - Educational Poster

Student and Classroom Opportunities

- Wisconsin Science Festival and Virtual Field Trips - Oct 15-18
- Discovery World Virtual Field Trips - ongoing
- BTC Institute Virtual Field Trips
- Future City - Student STEM Competition - sign up by Oct 31
- STEM Population Video Competition

Details

Learning Opportunities

- Monthly Book Study and Equity work - October 19th at 4pm

https://forms.gle/ChkVDbzgGBm82yge6 - You can still sign up here. We are planning to hold the WSST/DPI Book Study on the third Monday of each month. For this second session, we will dig into the "what can we do" aspects of the new WSST/DPI Equity and Access in Science Education Policy Statement, particularly the bullet points at the end and how they connect to our work, both at the classroom and larger systems levels. As optional background reading, which will likely be the focus in November, we also suggest the introduction to Doug Larkin's book, *Teaching Science in Diverse Classrooms,* and chapter three of the NSTA book *Helping Students Make Sense of the World*, by Megan Bang et al. Join your colleagues for an important and relevant discussion on equity in science education!

- WI Science Education Leadership Association - all welcome, Oct 15

https://widpi.zoom.us/j/96943630360 - connect to our fall WSELA meeting with this Zoom link. We'll discuss current challenges and effective strategies for COVID-19 instruction and leadership. Agenda: start at 2:30 pm for 30 min of informal chat, 3 - 4:30 will be more formal discussion based on suggested agenda items, and 4:30 - 5:00pm will again be informal chat time. No need to RSVP.

- UW Field Day Lab – "Aqualab" learning game development fellowship

https://docs.google.com/document/d/1peGixGZx-AKuy4_qHnl80b-S0lBlVZca4U0XBo7JaNg/edit - 6th to 9th grade teachers can join an award-winning educational video game design team to create their latest game. Applications are due December 1, and fellows will receive a $500 stipend. No programming or game design skills are required, though you should be interested in using these tools in your classroom. The game will involve students in scientific practices as they connect with concepts such as photosynthesis, adaptation, and energy transfer.

- Free NGSS Webinar Series from STEMScopes and Accelerate Learning – start Oct 15

https://stemscopes.com/mini-stemposium/ - Topics include immersing students in science through children's literature (Oct 15), working with all students' ideas through formative probes (w/ Page Keeley on Oct 17), and enhancing digital lessons (Nov 12). All are free, last about 75 min during the late afternoon, and feature strong presenters.

- Northern Illinois University STEM Fest - throughout October

https://stemfest.niu.edu/stemfest/what-to-do/weekly-activities.shtml- this is a series of free live events and workshops to support STEM engagement and learn about useful STEM teaching tools, such as makerspaces.

- AOPA Virtual Aviation STEM Symposium – Nov. 17th

https://youcanfly.aopa.org/high-school/symposium - The Aircraft Owners and Pilots Association (AOPA) will be holding this year's aviation STEM symposium online at 5pm CT on Nov 17th, providing an opportunity to high school educators around the nation to share insights, ideas, and best practices for starting or enhancing aviation STEM programs and activities. The 90-minute program is free and will be interactive, with speakers who work in a variety of aviation education and outreach roles.

Resources

- New DNR Snapshot Wisconsin Trail Cam Data Dashboard -

https://widnr-snapshotwisconsin.shinyapps.io/DataDashboard/- While you might be familiar with their general resources, this new site let's you play with the data over time. I love having students dig into real data!

- NGSS Now Newsletters - Do you receive this great resource?

https://www.nextgenscience.org/news/october-2020-ngss-now-newsletter, - this links to the October 2020 newsletter, with resources specifically related to COVID-19. You can sign up for them here.

- DPI Robotics grants - due Oct 15th

https://dpi.wi.gov/stem/grants/robotic-league - It's a little known fact that everyone who applies for this grant receives money as long as you engage a team in a robotics competition. You can apply for up to $5000, but if enough people apply you'll receive less (a prorated amount). You have to have a matching amount paid by school,

grant, or other funds, and you'll need itemized expenses and receipts for the grant funds and your match.

- PBS Wisconsin Education wants to hear from you!

The team at PBS Wisconsin Education is currently reviewing their *Climate Wisconsin* resource collection, looking at how this collection might serve a middle school audience and what updates are needed to ensure that resources can continue to be used for years to come. Are you a middle or high school teacher who is interested in sharing your thoughts? You can do that here.

- Edweek Blog on Building Relationships Virtually

http://blogs.edweek.org/teachers/teaching_now/2020/09/building_relationships_with_students_youve_never_met.html - How have you been doing this year with building relationships with students and helping them build relationships with each other?

- STEM Leadership Network Webinar on Virtual and Hybrid Learning (recording)

https://stemtlnet.org/theme/september2020-expertpanel - in this recording, a panel of educators shares ideas and resources for virtual and hybrid STEM learning. They also shared a related resources document: https://stemtlnet.org/sites/default/files/2020-09/STEMTLnetChatSept.pdf

- Essential Elements in Science Standards Resources - w/ lesson ideas

https://dpi.wi.gov/sites/default/files/imce/sped/pdf/ccee-science-linkage-level-descriptors.pdf - In case you haven't seen this excellent resource document on "linkage level descriptors," it details a series of what NGSS-based science learning might look like for populations with special needs and provides sample lesson ideas at each of these differentiated levels. It builds on the Essential Elements Alternate Science Standards.

- Science Forward Exam - Performance Level Descriptors

https://dpi.wi.gov/sites/default/files/imce/assessment/pdf/T076_WI_Forward_Science_Grade_4_PLDs_2019.pdf Grade 4 and grade 8
- https://dpi.wi.gov/sites/default/files/imce/assessment/pdf/T077_WI_Forward_Science_Grade_8_PLDs_2019.pdf - This extended table details the varying levels of 3D skills and knowledge combinations that students will be asked to demonstrate within the Science Forward Exam. It's a useful tool for reflecting on Forward Exam scores (though it remains to be seen whether we'll have the exam this spring).

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- OpenSciEd COVID-19 and Health Equity Units - at various grade levels

https://www.openscied.org/covid-19-health-equity/ - These free units are 3D and phenomenon-based, taking students through a storyline to understand COVID-19, viruses, and equity in health care. They are available in three grade bands: K-2, 3-5, and 9-12.

- We Are All Stardust - A Hike at Rib Mountain

https://www.wisconsinlife.org/story/you-are-stardust-a-mothers-lesson-from-rib-mountain/ - In this "Wisconsin Life" story, a mother shares some science with her son as they climb Rib Mountain in Wausau. What stories might you or your students write?

- NGSS Science and Engineering Practices during COVID-19 - Educational Poster

Science Practices Poster Graphic - This poster was developed by former Wisconsin teacher Jay Garvey Shah to help students (and teachers) think through scientific and engineering practices in the context of COVID-19. It's an amazing graphic (thanks, Jay!), though you or graphics students at your school might have some interest in digitizing it with a software program? That could be a fun project!

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Student Opportunities

- Wisconsin Science Festival and Virtual Field Trips - Oct 15-18

https://www.wisconsinsciencefest.org/ - Connect students with scientists and cutting-edge research in this year's Science Festival, going virtual for most aspects of it (though some events in other parts of the state may still be in person). A particularly interesting opportunity this year is a series of virtual field trips - https://www.wisconsinsciencefest.org/wp-content/uploads/2020/09/WSF-2020-Field-Trip-Website-Grid-9.25.20.pdf with options from grades K-12.

- Discovery World Virtual Field Trips - ongoing

Discovery World Field Trips now come to you - Discovery World is thrilled to announce a variety of new hands-on STEM learning programs suitable for in-school sessions, virtual learning, and enrichment programs designed to provide support for teaching and learning during the COVID-19 pandemic. These new offerings include live, interactive lab experiences led by Discovery World Educators, virtual exhibit tours, and activity kits with the materials and instructions you need for inside the classroom. These programs are available to all schools, and are offered at no cost to schools who demonstrate an Economically Disadvantaged status of 50% or higher,

OR a school report card rating of 72 or lower. Please visit www.discoveryworld.org/learning/virtual-programs/ for more information.

- BTC Institute Virtual Field Trips

https://www.btci.org/k-12-programs/virtual-biotechnology-field-trips/ - The BTC Institute is moving several of its popular field trips into online formats for schools, which include sending you the supplies to do them in a safe way in your classrooms. There is even a COVID-19 learning series. For details, contact Barbara Bielec, K-12 Program Director (barbara.bielec@btci.org).

- Future City - Student STEM Competition - sign up by Oct 31

Future City is a project-based learning program where students in 6th, 7th, and 8th grades imagine, research, design, and build cities of the future. This year's challenge, *Living on the Moon*, asks teams to design a futuristic lunar city and provide examples of how the city uses two Moon resources to keep its residents safe and healthy. This could be part of your classroom curriculum or an extracurricular club. There is still time to register before the October 31 deadline. It's important to note that it is entirely virtual this year. On October 17th from 9 to 11am, STEM Forward in Milwaukee is doing a workshop for teachers on how to engage in this program - RSVP https://forms.gle/iMdRu1JwMZQnuqUM9.

- STEM Population Video Competition – by Feb 25

https://www.worldof7billion.org/?utm_source=20-21_NAGC_1 - This group has teacher resources for teaching about population dynamics and details about a student competition to create a video related to tackling challenges that continue to come with having over 7 billion people on Earth.

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"Science is not a body of facts, [it] is a method for deciding whether what we choose to believe has a basis in the laws of nature or not." – Marcia McNutt