Hello Science Education Leaders,

I very much enjoyed a visit to Badger HS in Lake Geneva this month - awesome science learning! I specifically spent a day with their fabulous teachers to see phenomenon-based storylines in action in biology and chemistry. I enjoyed seeing student groups creating atomic attraction models and then improving them after seeing other groups' models, student groups evaluating the pros and cons of different ecological models, and students asking initial questions about a phenomenon.

Are you doing personalized or competency-based learning in your school/district or other innovative structures or practices. Please, send me samples of learning progressions, rubrics, or report cards! Are you willing to let me come visit? I'm trying to do more to recognize and share innovative practices in science.

Please, send me an email if I can help with some resources, a facilitated discussion or workshop on a PD day, or an after-school dig into a science topic (it's all no cost).

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

- Elementary Science Book Study - Ambitious Science Teaching - starts Jan 15
- Leadership Book Study - Curriculum-Based Professional Development - starts Dec 4
- WSST Updates - Conference Proposals, Free Memberships, New Teachers and More
- NSTA National Conference in Denver - March 20-23, Scholarships available
- Space for Teachers Program w/ Parabolic Flights - Applications due Feb 19

Resources

- New PBS Wisconsin Meet the Lab Resource - Climate Interactions
- Periodic Table Spreadsheet – handy resource for chemistry
- 2024-25 Community Learning Center Grants Available now - due Jan 26
- KEEP and LEAF Environmental Science Kits - Shipping Free now from WCEE
- Research Article - Better Outcomes through Phenomenon/Inquiry-Based Learning

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Student Opportunities

- Summer Field Experiences at UW-Eau Claire for current HS juniors
- Capitol Science and Engineering Fair - applications by Jan 15
- State Water Inquiry Project - ongoing
- Toshiba and NSTA Exploravision Competition - for K-12, due Jan 31
- 2024 Jacobs' Teen Innovation Challenge - for MS/HS students, due Jan 10

Details

Learning Opportunities

- Elementary Science Book Study - Ambitious Science Teaching - starts Jan 15

Registration Link - The group will read Ambitious Science Teaching, by Mark Windschitl, Jessica Thompson, and Melissa Braaten. You can read more about the book here. The tentative plan is to meet at 7PM via zoom on Jan. 15, Feb. 19, March 18, and in person at the WSST Conference in April. They plan to focus on student discourse and scientific modeling this year. WSST members receive a free copy of the book!

- Leadership Book Study - Curriculum-Based Professional Development - starts Dec 4

Sign-up: https://forms.gle/a2WGar6Nt9gFjH697 - We'll be digging into the new book, Transforming Teaching through Curriculum-Based Professional Development, by Jim Short and Stephanie Hirsch. While the conversations will be geared toward people in science leadership roles, like department chairs or coordinators, anyone is welcome to join. WSST members will receive a free copy of the book while supplies last (have about 5 left). The book builds on the The Elements report from Carnegie, which you can read for free if you don't intend to get the book. Our first session will be Dec 4th, at 4 or 7pm. More info will come out to those registered.

- WSST Updates - Conference Proposals, Free Memberships, New Teachers and More

https://www.wsst.org/2024-conference - I'm looking forward to the WSST conference in La Crosse, April 18-20! Session and workshop proposals are open until Dec 15th. If you haven't been a member before, free memberships are available from your regional district director. Along those lines, there is also a "New Teacher Committee," for educators in their first few years of teaching -- reach out to Jayne Ryczkowski for details about this networking opportunity.

- NSTA National Conference in Denver - March 20-23, Scholarships available

https://www.nsta.org/national-conference-science-education-denver-2024 - Have you been to an NSTA National Conference? They're amazing? With many direct and not too crazily-priced flights to Denver from the Wisconsin area, it'll make a fabulous spring opportunity. They even have scholarships for new and pre-service teachers to cover registration costs.

- Space for Teachers Program w/ Parabolic Flights - Applications due Feb 19

https://spaceforteachers.org/ - The "Embedded Teacher Program" allows middle school STEAM

teachers to engage in professional learning with NASA and travel on a parabolic flight to conduct classroom experiments (and experience "weightlessness"). Lalitha Murali, Glendale, WI teacher, took part in this program last year (and ended up winning a Stemmy award from STEM Forward).

Resources

- New PBS Wisconsin Meet the Lab Resource on Climate Interactions

pbswisconsineducation.org/meetthelab - PBS Wisconsin Education is thrilled to launch ***Climate Trackers: Superpowered by Ecometeorology,*** the newest addition to our *Meet the Lab* collection. *Meet the Lab* is an online collection for middle school science classrooms that introduces students to real-world issues and Wisconsin scientists researching solutions. In *Climate Trackers*, researchers in the University of Wisconsin-Madison Ecometeorology Lab study how the land, biological organisms on the land, and air interact, and how this influences climate and climate change. Learners will understand why this research matters and how it's showing up in the real world through the story of Seven Seeds Farm in Spring Green, Wisconsin. Discover educator resources for this lab and others at https://pbswisconsineducation.org/meetthelab/educator-resources/

- Periodic Table Spreadsheet – handy resource for chemistry

https://docs.google.com/spreadsheets/d/13DZVsZlzXfGVJIZixX24MH7t4Vkj3NlJ/edit?usp=sharing&ouid=111947852627271601707&rtpof=true&sd=true - a lot of information is packed into this interactive spreadsheet. It's a useful resource for exploring and predicting patterns among the elements.

- 2024-25 Community Learning Center Grants Available now - due Jan 26

https://dpi.wi.gov/sspw/clc/grant-competition -

DPI is pleased to announce the Nita M. Lowey 21st Century Community Learning Center (21st CCLC) Grant competition, for funding beginning in the 2024-25 school year. The purpose of the 21st CCLC program is to provide an array of activities during non-school hours, or periods when school is not in session (such as before and after school, weekends and during school breaks). STEM-focused programs are encouraged! Public school districts, private schools, charter schools, and community-based organizations targeting students enrolled in schools eligible for schoolwide Title I programs, educational service agencies (e.g. CESA), and Indian tribe or tribal organizations are invited to apply. Applications are due on or before 4:00 p.m., January 26, 2024. For further information, please contact DPI21stCenturyCommunityLearningCentersGrant@dpi.wi.gov.

- KEEP and LEAF Environmental Science Kits are Shipping Free from WCEE

https://www.uwsp.edu/wcee/wcee/kits/ - These free kits for loan include a range of different science tools related to energy, forestry, ecosystems, animals, etc., with possible connections across K-12 standards. There's even a sign-up calendar now where you can see the availability of kits!

- Research Article - Better Outcomes through Phenomenon/Inquiry-Based Learning

https://journals.sagepub.com/doi/10.3102/0013189X211067742 - I sometimes get questions about what research says about different instructional approaches in science. Current research, such as this article, suggests that inquiry-based learning, defined as phenomenon-based storylines, results in better student outcomes than traditional teaching methods. Further research details along these lines can be found in the National Academies' synthesis report on 6-12 science learning.

Student Opportunities

- Summer Field Experiences at UW-Eau Claire for current HS juniors

In the Freshwater Science and Earth/Environmental Science Summer Field Experiences at UW-Eau Claire, students will participate in a variety of field exercises and research with faculty and advanced students at UW-EC. Programs are geared toward high school students entering their senior year (juniors now). The priority application deadline for both programs is December 1, with applicants notified by early January of their acceptance. Both programs have an option to enroll in credit.

- Capital Science & Engineering Fair - applications by Jan 15

The Capital Science & Engineering Fair (CSEF) was established to provide high school students from South Central Wisconsin (though all are welcome) the opportunity to showcase their research. Grades 9-12 students in public, private, and home schools are eligible. The 2024 Fair will be March 23rd at the Madison Central Library (201 W Mifflin St., Madison, WI) - 2024 Flyer. The fair inspires enthusiasm for science and engineering research among Wisconsin students. It provides a support system to assist students as they actively participate in science and engineering endeavors. Students can submit notice of interest in fall 2023; it is requested by Dec 15th, and registration for 2024 will be due Jan 15, 2024.

- State Water Inquiry Project - ongoing

https://dpi.wi.gov/science/water - this ongoing project can engage students in meaningful, local phenomena, and give them an opportunity to make a difference in their communities. Through the GIS platform, you can share data and information on what you're doing with other across the state.

- Toshiba and NSTA Exploravision Competition - for K-12, due Jan 31

https://www.exploravision.org/ - Organized through grade-banded expectations, students work together to design and idea to change a current technology to prepare for the future. There are a wide range of prizes across these grade bands. Their website has further details on the rules and timelines, as well as sample student projects from past years.

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- 2024 Jacobs' Teen Innovation Challenge - for MS/HS students, due Jan 10

https://www.pactful.org/jtic24/ - the 2024 Jacobs' Teen Innovation Challenge is almost here allows for middle and high school teams to design innovator ideas to make the world a better place. They are awarded up to $2000. In the challenge, teenagers, working with their teachers, develop an innovator's mindset and design thinking skills to create solutions to local and global problems. Participation is limited. They are accepting applications until January 10th. The program is supported by the University of San Diego. Further details and updates for 2024 are on the 024 Jacobs Teen Innovation Challenge website.

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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