



STEM TRAIL Center

November 2019

IN THIS ISSUE

STEM Ecosystem Summit

Cascading Messages

Student Corner

Programming and Center
Successes

Resources to Share

Contact Us



STEM Ecosystem Summit a Success!

One of the key STEM workforce “collective impact” initiatives of the STEM TRAIL Center is working closely with other citywide organizations and stakeholders in the Omaha STEM Ecosystem (OSE). UNO’s STEM TRAIL Center is a key co-leader of the organization, and UNO is a co-founder of the OSE, along with the Omaha Henry Doorly Zoo and Aquarium, UNMC, Union Pacific, OPPD, Clarkson College, the Applied Information Management (AIM) Institute, UNL Engineering, Metropolitan Community College, MOEC, the DLR Architecture Group, the Peter Kiewit Foundation, the Nebel Family Foundation, and the Hubbard Foundation. More than 80 organizations and 900 representatives participate and look to the leadership of UNO and these other founding organizations to help to collectively build STEM pathways, “cradle to career”.

On October 3, of 2019 the group held a large citywide summit at the UNO Thompson Alumni Center with more than 120 attendees *called “Charting a Course for Success: Internship Models for Tomorrow’s Careers”* that included a national keynote speaker, Dr. Jeff Weld, lead author of the 2018 national report “Charting a Course for Success: America’s Strategy for STEM Education” which was produced collectively by the 15 different federal funding agencies supporting STEM. Dr. Weld commended the STEM TRAIL Centers advocacy and leadership for STEM Ecosystems, which as unanimously seen by the 15 agencies as a key objective, and was prominent in the report. It can be accessed at:

<https://www.whitehouse.gov/wp-content/uploads/2018/12/STEM-Education-Strategic-Plan-2018.pdf>

Many UNO STEM faculty participated in the OSE Summit and also benefited from talks from other STEM Leaders, such as UNO’s own Catherine Lang, State Director of the Nebraska Business Development Center.

*We exist to elevate
human potential
through lifelong
learning.*



Are you a future elementary teacher? Please join us in the STEM community!

Calling all future elementary teachers! Join us in the STEM community! We know your VERY important future contributions to the excellence of STEM understanding by students and we want to support you!

One of the very best ways that we try to support you is to help you to study for the **Praxis exam** related to elementary teaching, and in particular the mathematics portion. If you are nervous about passing that test, or weak on mathematics, we want to help with free tutoring and study groups!

Dr. Paula Jakopovic, and elementary mathematics STEM learning specialist in the Department of Teacher Education leads a team of mathematics majors studying themselves to be teachers and funded by the National Science Foundation. Please email Dr. Jakopovic at paulajakopovic@unomaha.edu. Join us!!



All things funding related!

The Center is working to streamline accessibility to resources for faculty new to UNO, faculty interested in submitting new proposals to external agencies, and for those looking to better understand the post-award process.

New on the website is a “Resources for Faculty” tab. More resources will be collated and shared there, as well as additional links to Offices across the campus for quick access to information. Finally, we’ll be generating a FAQ sheet in the spring as another support mechanism.

We had a record number of grant submissions in the month of November; consequently, we hope to have many favorably reviewed projects in the spring!

Are you interested in hosting a teacher in your laboratory?

Apply to be part of the next cohort of TRPP’ers!

For more information: <https://www.unomaha.edu/college-of-arts-and-sciences/teacher-researcher-partnership-program/index.php>



Student Corner: Have you Seen Dr. Wieman’s PHET Website?

Simulations: Looking to Better Understand STEM Concepts through Interactive Simulations? Well you may not have known that one of the very best was created by Dr. Carl Wieman, our recent Nobel Laureate who helped to kick off the STEM TRAIL Center Launch. Via “PHET Interactive Simulations”, Dr. Wieman’s team has supported more than 658 million uses of his site worldwide, and includes simulations that cross physics, chemistry, math, earth science and biology, for elementary, secondary and college coursework. It can be accessed at:

<https://phet.colorado.edu/>

Professional Development: Remember, there are also opportunities for student professional development and help in STEM each week—these include the NE STEM 4U STEMinar series, as well as the Friday STEM TRAIL Center seminar series. Join us at an event this week!

Networking: Remember to follow Omaha STEM Ecosystem events, that also provide some nice opportunities for students, faculty, and colleagues to network with other citywide organizations interested in STEM.

<https://stemecosystems.org/ecosystem/omaha-stem-ecosystem/>

Students: The newly awarded NSF Noyce programs (Math and Science) and S-STEM programs are actively recruiting participants, please consider applying:

NoyceMATH: <https://www.unomaha.edu/college-of-arts-and-sciences/mathematics/student-opportunities/scholarships/noyce/index.php>

Upcoming Opportunities & Events

Remember the Friday Seminar Series!

Join us on Fridays at noon, usually in the Thompson Alumni Center's first floor meeting space for weekly programming. See calendar to RSVP and for location updates. For event parking passes: tinyurl.com/UNOSTC19

1st Fridays: STEM Pedagogy Professional Development Seminar Series, featuring translation of best-practices into the classroom in a meaningful, engaging way. RSVP by the preceding Monday to reserve your lunch.

2nd Fridays: DBER workshop series, featuring DBER expert-led workshops to model off of methods discussed in the seminar series, aid participants in developing and implementing DBER studies for student engagement, learning, and retention. **See the calendar for pre-readings.**

3rd Fridays: DBER seminar series, featuring local and external speakers on a variety of areas and sub-disciplines in discipline-based education research.

4th Fridays: Grant writing workshops tailored to be specific to DBER and STEM Education grant writing, primarily to NSF this year. This will include a hands-on, customized workshop to participants by facilitators with more than \$30M in NSF funding.

Join the UNO Strategic Planning Forum, to include a presentation by the Center on Friday, Dec 13, MBSC Ballroom noon-4:30pm

Stay STEM Connected with UNO STEM Listservs!

A great way to stay connected to key events is through the many STEM Listservs facilitated by the STEM teams. Contact any of the listed individuals for potential invites.

STEM TRAIL Center: This listserv goes out related to all those interested in STEM TRAIL Center activities.

unostemtrailcenter@unomaha.edu

To join, email: Nik at: nstevenson@unomaha.edu

UNO STEM Colleagues: Networks among faculty interested in STEM related opportunities:

STEMColleagues@unomaha.edu

To join, email: Jim at: jbwolfe@unomaha.edu

WiSTEM Pro^2: Gender equity, advancement, diversity

Wistempro2 <unowistempro2@unomaha.edu>

Email: Kelly at kgomezjohnson@unomaha.edu

Omaha STEM Ecosystem: Connects to city STEM collaborator, as Directed by Julie Sigmon

To join, email: julie.sigmon@omahazoo.com

How will we succeed as a Center?

The **strategic anchors** of the Center include:

- 1) teaching innovations,
- 2) generating self-sustaining community programs,
- 3) entrepreneurial enterprises

In order to meet the Completion Imperative, meet workforce development needs in Omaha and Nebraska more broadly that we need to both retain our workforce and prepare them for what's next in terms of innovation. Futurists predict that students will be entering jobs that don't exist today within a decade. Moreover, new technologies and innovations will require an ongoing application of research as a pedagogy to ensure adaptability and timeliness. Through these anchors of the Center, we hope to contribute to resolve the workforce challenges of today and well into the future. A critical way we can do this is to provide professional development for educators (faculty, staff, teachers, others) to help them meet their goals. Please join us at an event or request an event/training at unostemtrailcenter@unomaha.edu.

Funding Model for the Center—Update:

We are all actively pursuing funding for the Center and we always welcome feedback on ways to further support the Center. However, one such strand of support to the Center is via F&A (indirects) returned to the Center.

The model is that of the F&A to UNO, after the Chancellor's office, ORCA, and Academic Affairs receive their portions, then half of the remainder goes to the Center, and of the other half remaining, this is divided evenly between Colleges participating in the grant. This support allows the Center to provide some post-award support, and pre-award support in terms of grant writing assistance.

If you are submitting a grant or contract as part of the STEM TRAIL Center, please select "route via a Center" within MavGrants. Please also remember to route to your administrative approvers (e.g. Department or Unit Chairs, and cognizant Dean administrators) to keep them apprised of such activity.

We look forward to working with you on your projects!



Great resources to share, from our desks to yours:

Press Releases or Articles:

NSF Appropriations News, 2019:
<https://www.nsf.gov/about/congress/>

STEM Congressional Highlights, 2019:
<https://www.nsf.gov/about/congress/nsf-congress-highlights.jsp>

Graduate STEM Education for the 21st Century (National Academies Press):
<https://www.nap.edu/catalog/25038/graduate-stem-education-for-the-21st-century>

English Learners in STEM Subjects, 2018 (National Academies Press):
<https://www.nap.edu/catalog/25182/english-learners-in-stem-subjects-transforming-classrooms-schools-and-lives>

Discipline-based Education Research (National Academies Press):
<https://www.nap.edu/catalog/13362/discipline-based-education-research-understanding-and-improving-learning-in-undergraduate>

Books:

- *In Praise of Wasting Time* by Lightman
- *Guide to Literary Agents* by Brewer
- *Leading the Unleashable* by Willett
- *Switch: How to change things when change is hard* by Heath and Heath
- *The Impact of Confidence* by Ressmeyer
- *Project Management* by Harvard Business Reviews
- *Crucial Conversations: Tools for talking when stakes are high* by Patterson, Grenny, Mcmillan, and Switzler

Do you have a favorite book or article? Please share with us on Twitter @UNOSTEMTRAIL to be featured here

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