



STEM TRAIL Center

October 2019

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Center launch a success!

We hosted more than 350 individuals from across campus and from our community at the formal launch of the STEM TRAIL Center on September 20th. The day was filled with activities targeting students, faculty, and community. These included focused talks to help our students best prepare for the workforce, such as “I am about to graduate, what on earth do I do now? And “STEM Educated pros can do anything! Allow me to tell you how awesome you are” by Alaina G. Levine.

For faculty and educators that participated in the event, Nobel Prize winner Dr. Carl Wieman shared data regarding science education across the post-secondary level, and the partnership potential with K-12. Dr. Wieman’s presentation titled, “A scientific approach to science education” reminded us all to use evidence-based practices, collect data on research-aligned approaches, and make informed decisions to best meet the needs of our audience (be that undergraduates or K-12 youth).

Alaina G. Levine closed out the evening with her keynote, “Become a challenge agent: Innovation, growth, and advancement through the diversity of ideas”. She highlighted the need to work collectively to identify pain points, provide creative resolutions, and to confidently work to move the needle forward on innovation.

In case you missed these or any part of the day, we will have the keynote and fireside chat recording available on our website in the months to come.

We’ve heard from many of you your takeaways from the event, but we would love to hear from more! Please share @UNOSTEMTRAIL or unostemtrailcenter@unomaha.edu

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





Award Notices and Exciting Highlights

Congratulations to Dr. Bill Tapprich for leading the 5th year of the UNO Teacher-Researcher Partnership Program (TRPP). This program has hosted between 11 and 17 teachers per year for genuine research experiences in science disciplines. Are you a UNO researcher in a science area interested in hosting a science teacher in your lab in summer 2020? The RFPs will be opening soon.

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

To apply for the next TRPP cohort, visit: <https://www.unomaha.edu/college-of-arts-and-sciences/teacher-researcher-partnership-program/research-pubs/index.php>

We do not have any new grant notifications to share for the month of October (yet!), but we wish continued success to you all in your pursuits of extramural funding.

A great way to find partners for such projects is by attending conferences, here are some upcoming opportunities through Project Kaleidoscope and AAC&U on STEM: <https://www.aacu.org/registration-transforming-stem-higher-education>

This year's conference is titled, "Transforming STEM Higher Education" and includes a presentation by Dr. Sandra McGuire on the cognitive science research-based learning strategies that help the learning of all students. There are also workshops on leadership development and institutional transformation.



Student Corner: Opportunities

Student programs in STEM at UNO are highly interdisciplinary in content nature, but also prepare students for the ever changing workforce. The Omaha STEM Ecosystem is a critical part of the STEM TRAIL Center to aid in career advising, skill set additions, and expansion of opportunities for students.

There are opportunities for student professional development 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!

Follow Omaha STEM Ecosystem events here: <https://stemecosystems.org/ecosystem/omaha-stem-ecosystem/>

Students: The newly awarded NSF Noyce 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>

S-STEM: <https://www.unomaha.edu/academic-affairs/stem-trail-center/research/sstem.php>

We are continuously looking for student volunteers for events during the workday and on evenings and weekends. If you are interested in helping on an ongoing basis, or a few times a year, please contact us with the subject line: Student Volunteer and include your resume unostemtrailcenter@unomaha.edu

Opportunities to volunteer include at our annual LightsOn Afterschool celebration, for the UNO Planetarium events, for the Robotics Expo, and numerous other events! These are great opportunities to expand your networks.

Upcoming Opportunities & Events

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.



Did you know that the American Association for the Advancement of Science (AAAS) hosts blogs focused on timely issues in STEM? One such blog is the ARISE. This week's topic is "*How should math teachers structure opportunities to learn to determine the relationship between classroom experiences and student learning?*" by Dr. Richard Q. Berry III, NCTM President. Dr. Berry describes examples from his own work, that of *The New Teacher Project*, and the Opportunity Institute and Education Trust. Read it here: <https://aaas-arise.org/2019/10/09/opportunity-to-learn-mathematics-time-task-talk/>

Our very own Neal Grandgenett, Christine Cutucache, Brian Dorn, and William Tapprich have also been featured for their work on "breaking down the STEM Silos": <https://aaas-arise.org/2019/03/25/bulldozing-the-stem-silos/>

Consider submitting your work!

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.

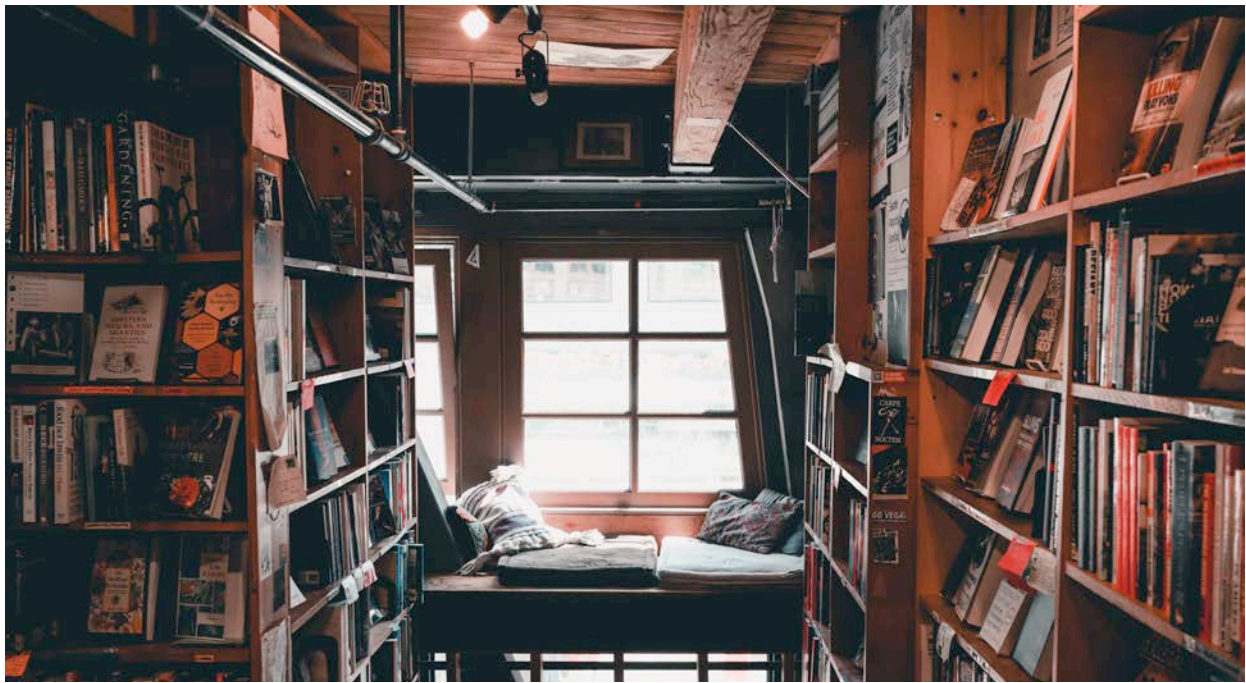
Funding Model for the Center—Update:

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:

- *The Effective Executive* by Peter Drucker
- *The Impact of Confidence: 7 Secrets of Success for the Human Side of Leadership* by Timothy Ressmeyer
- *Improving How Universities Teach Science* by Carl Wieman
- *Networking for Nerds* by Alaina G. Levine
- *Make It Stick* by Brown, Roediger III, & McDaniel
- *Turning the Flywheel: A Monograph to Accompany Good to Great* by Jim Collins
- *The 5 Languages of Appreciation in the Workplace: Empowering Organizations by Encouraging People* by Gary Chapman and Paul White

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

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