



# STEM TRAIL Center Newsletter

Summer 2019

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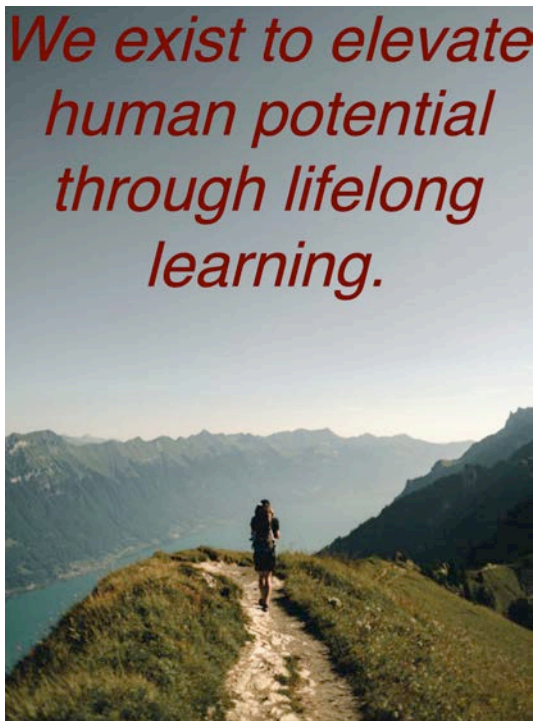
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*We exist to elevate human potential through lifelong learning.*

## Approval of the Center & Thank You

On May 30, 2019 the UNO STEM Teaching, Research, and Inquiry-based Learning (TRAIL) Center was formally approved. This Center has a mantra of “*Research as a Pedagogy*,” meaning research is synonymous with inquiry and serves as an exciting way to engage learners of all ages and abilities in deep STEM learning. We see research as a way to engage all in STEM literacy by creating, innovating, and striving to meet the demands of the workforce long into the future.

The generation of this Center is thanks to the hard work of so many stakeholders: Dr. Deb Smith-Howell and Keristiena Dodge, Vice Provost David Jackson, the UNO STEM Leadership Team with STEM Community Chairs, Faculty Senate, Campus committees, the Omaha STEM Ecosystem constituents and partners, Nebraskans and NU alum, the Nebraska University Foundation staff, and leaders across our campuses. Also, most importantly, a very special thanks to the key STEM Deans that continue to serve as our guides: Dean Nancy Edick (1<sup>st</sup> lead Dean for STEM Center implementation), Dean Hesham Ali, and Dean David Booker. Thank you all so very much for your contributions and guidance.



Whenever a new entity is formed, it is critical to understand what it is and perhaps even more importantly what it is NOT. Herein we aim to clarify, at least primarily, some of these critical differences. Additional detail will be shared on the STEM TRAIL Center website, in subsequent newsletters, and at upcoming retreats and events.

### What the Center is:

**-An administrative unit:** Often in STEM there will be new projects initiated that require specialized staff (temporary and long-term) and administrative resources requiring specialized expertise such as youth safety practices, personnel paperwork management, RCR requirements, extensive paperwork, and highly specialized expertise to complete. The Center aims to support research faculty and their units by providing very directed assistance on STEM-based projects. It is also a place where faculty, staff and stakeholders work together for STEM innovation.

**-Structure for External Funding and Sustainability:** Often funding agencies have components of grants asking about “institutional commitment”. The UNO STEM TRAIL Center signifies significant institutional commitment to the STEM Strategic Priority. Similarly, the STEM Strategic Plan can be used and cited by all parties, further strengthening the opportunities for comprehensive, sustainable applications of STEM efforts on and off campus.

**-Focused Expertise in Discipline-based Education Research (DBER) & Inquiry-based Learning (IBL):** STEM TRAIL Center faculty have expertise in multiple disciplines of DBER and inquiry-based learning. This allows for faculty (and graduate students, post-docs, or other research personnel) to access support in these areas by either attending the seminars offered in these areas (Fridays at noon!) or by scheduling small group or one-on-one consulting with the team.

**-Focused Expertise in Grantsmanship:** The dynamic team of researchers affiliated with the Center have a strong history of funding success. The Center aims to share lessons learned and information with others to help provide a more personalized way for faculty to meet their grant writing goals.

### What the Center is not:

**-An academic unit:** We will not offer courses as part of the Center for UNO student credit. Rather, we are a catalyst to faculty and units striving for STEM learning innovation. Educational opportunities provided via the Center will be via retreats, shorter and longer-term workshops, and/or seminars featuring experts from around the world. Faculty interested in using more inquiry-based practices in their classrooms can participate in IBL and similar workshops.

**-A silo:** in STEM we work to breakdown silos, so our goal is not to establish a larger silo but rather to offer additional support to faculty, students, and lifelong learners from the community to achieve their goals. This is reflective in our administrative structure crossing multiple Departments, Colleges, and disciplines. Everyone is fully welcome to collaborate with the STEM TRAIL Center.

### “If you want to go quickly, go alone. If you want to go far, go together.”

This African proverb guides the operation of the STEM TRAIL Center. Partnerships with entities in the state, in the region, and around the world are critical to STEM initiatives on the UNO campus. Working with dynamic, innovative, and diverse teams allows us to critically address the challenges in STEM of today and into the future.

### Here are some recent examples of such successes:

**New NSF Award! Dr. Michael Matthews** (UNO, Mathematics) recently lead an interdisciplinary team of faculty from both UNO (to include Drs. Gomez Johnson, Rault, Rech, and Jakopovik) and Metropolitan Community College (Drs. Van Hook and Flesch) to successfully obtain a Noyce Track II award. This award allows for the continuation and expansion of work from the collaborative Noyce Track I award, and to maintain the reputation and prestige of these opportunities to train teachers at UNO.

**New Funded Initiative!** The first STEM TRAIL Center initiative has been funded— *STEM TRAIL Center: STEM Education Professional Development for Rural Programs Across Nebraska* is a terrific partnership with the University of Nebraska at Kearney and Nebraska Children and Families Foundation to expand the NE STEM 4U program to rural sites, as well as to provide on-site, specific STEM professional development for out-of-school time staff across Nebraska.

**Story to share?** Do you have a STEM-related story to share? Perhaps it is of a colleague who mentored you, or a team that worked hard together to submit a grant proposal? Or, a team that has undertaken an initiative to enhance STEM learning in a course or program? Do you have exciting news about a recent invention, innovation, or other contribution? The UNO STEM TRAIL Center will serve as a primary writer of STEM stories on campus. If you have something to share, please let us know—we would love to help promote your work!



# Upcoming Opportunities, STEM Center Launch Event, & Other Updates

\*\*\*\*\*STEM Center LAUNCH!\*\*\*\*\*

**When:** Fri, Sept 20, 2019, all day; keynote at noon  
**Where:** UNO's Milo Bail Student Center, 2<sup>nd</sup> floor  
**Speakers:** **Nobel Laureate Dr. Carl Wieman and STEM entrepreneur Alaina G. Levine.** Students will have the opportunity to learn how to navigate the job market, create new opportunities, and adapt to the changing landscape. Faculty will be able to learn from one of the greatest thought leaders in higher education about STEM pedagogical practices for student recruitment, retention, and long-term learning gains. Stop by to learn about the many exciting STEM initiatives taking place on campus. **ALL ARE INVITED;** please RSVP on the website's calendar!

## MavGrants Routing Implementation:

Upon entering a new grant or contract in MavGrants, you can now select "UNO STEM TRAIL Center". For collaborative projects, we encourage you to check this box to help us in annual reporting. This also allows all of us to continue to build the opportunities, events, and offerings of the Center. Please remember to include cognizant supervisors as additional routes to ensure all stakeholders are apprised of exciting new submissions!

## Join us on Fridays at noon through the academic year!

STEM Center programming will most frequently take place on Fridays at noon. Seminars will be Fridays 12-1 and workshops may begin at 12, but depending on the content may extend to as late as 3pm. Key programming this year will be a 1) DBER seminar series; 2) an Inquiry-based learning/Pedagogy seminar series; 3) a DBER Workshop series; and 4) a STEM Grant Writing Workshop Series.

## Media/Marketing/Communications:

If you'd like an event added to the calendar, or would like us to cross-promote your event, please share those details with us at [unostemtrailcenter@unomaha.edu](mailto:unostemtrailcenter@unomaha.edu)



## How will we succeed as a Center?



**Strategic anchors** of the Center include

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

In order to contribute to UNO's Completion Imperative and to meet STEM 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 within a decade students will be entering jobs that don't even exist today. Moreover, new technologies and innovations will require an ongoing application of research as a pedagogy to ensure adaptability and timeliness and to engage students in deep learning. Through these anchors of the Center, we hope to contribute to resolving the workforce challenges of today and well into the future. A critical mechanism 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](mailto:unostemtrailcenter@unomaha.edu).



*Above: Heather Leas (left) and Nik Stevenson (right).*

Team members are a critical component of our successes. We'd like to highlight two critical, externally funded, highly skilled team members in the Center. Heather Leas serves as the STEM Education grant coordinator and Nik Stevenson serves as the STEM Education Research Technologist/STEM Professional Development Educator. We welcome them both to the Center and thank them for their tireless work.

*A very special thanks to Keristiena Dodge, Amanda Shultz, Jason Buzzell, and Heather Leas for making our website live!*



Looking for some STEM related resources? Here are some great recommendations, 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 21<sup>st</sup> 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:**

*Multipliers* By: Liz Wiseman

*The Team Advantage* By: Patrick Lencioni

*Death by Meeting* By: Patrick Lencioni

*High Performing Habits: How extraordinary people become that way.* By Brendon Burchard

*Overcoming the Five Dysfunctions of a Team* By: Patrick Lencioni

*Scaling Up Excellence* By: Robert Sutton and Huggy Rao

*Start with Why* By: Simon Sinek

*Do you have a favorite book or article? Please share with us @UNOSTEMTRAILCenter to be featured here*

**STEM TRAIL Center [unostemtrailcenter@unomaha.edu](mailto:unostemtrailcenter@unomaha.edu)**

**6001 Dodge Street | Omaha, NE 68182**

**402.554.2917 | [unomaha.edu](http://unomaha.edu) <https://www.unomaha.edu/academic-affairs/stem-trail-center/index.php>**

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