



OMAHA

STEM

ECOSYSTEM

2019
ANNUAL REPORT

*Transforming Omaha
into a Robust STEM Community*



MESSAGE FROM THE DIRECTOR

As we close out another year of the Omaha STEM Ecosystem, I want to take a few moments to thank our wide range of stakeholders including business, educators, non-profit organizations, science centers, museums and private donors that have supported the OSE over the past three years. In 2016, we started with a vision of what Omaha could look like, and the impact we could have developing a strong workforce and vibrant STEM-focused community. Through the power of connections, collaboration and communication, we have begun to develop a shared understanding of the core talent needs and actionable frameworks that inform our collective efforts to build the community's STEM workforce.

We realize that there is no single initiative that can close the STEM talent gap problem, as the issues we face are complex. Proposed solution elements must consider factors at all levels, from how existing education and employment systems function to what individuals need to move into the STEM workforce and to be successful in it. Our challenges span from identifying critical workforce skills, aligning curriculum content with careers of the future and providing access for all community members to high quality STEM education programs. The OSE collective effort which has steadily built toward meeting these challenges by seeking collective impact,

takes a tremendous amount of work. However, we are excited with the level of commitment from the Omaha community to develop the necessary strategic partnerships to help make Omaha one of the best cities in the nation for STEM education and workforce development. The growing connections and shared initiatives between our educational institutions, employers and community partners will help to ensure dynamic, diverse and inclusive in STEM-centered workforce, cradle to career.

This report offers a glance back at some of the accomplishments in 2019. It also sets the stage for a year of incredible possibilities in 2020, including leveraging best practices, increasing the number of cross-sector partnerships and most importantly, building further shared initiatives.

We invite you to join us – and to bring others along – on this continuing journey to a vibrant STEM focused community.

Thank you,

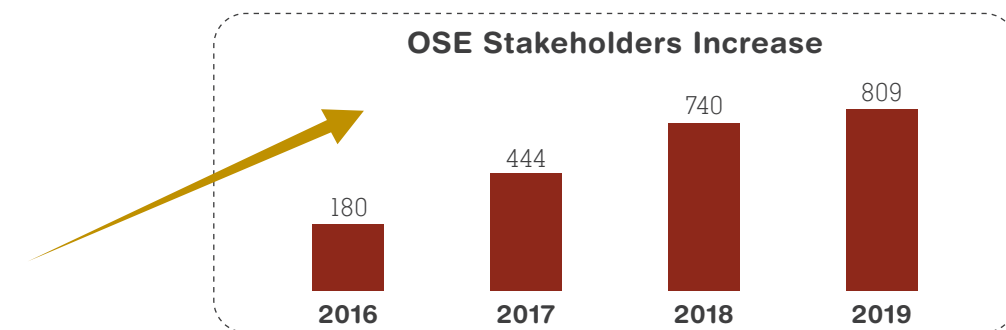
Julie Sigmon / Director

YEAR 3 HIGHLIGHTS

THE POWER OF COLLECTIVE ACTION is derived from use of focused communication, connections and collaboration. What follows are some of our most important accomplishments.

CONNECTIONS

- Stakeholders engaged in the OSE has increased by 349% since 2016!



The connections within the Omaha STEM Ecosystem is demonstrated by the generosity with which stakeholders donate their time, talent and treasure to move our work forward.



COLLABORATION

- Refined our strategic plan, committee goals and other collaborative structures to prepare for updated strategic planning process in 2020.
- Received on-going guidance and support from our Founding organizations: University of Nebraska at Omaha, Omaha's Henry Doorly Zoo and Aquarium, DLR, University of Nebraska Medical Center, Nebraska University Foundation, University of Nebraska Lincoln/ College of Engineering, Omaha Public Power District, Metropolitan Community College, Omaha Zoo Foundation, Parker Family Foundation, Peter Kiewit Foundation, Pacific Life Foundation, Clarkson College, the Nebel Family, the Applied Information Management Institute, Anne Hubbard, Union Pacific Railroad.
- Expanded coordination with the Metropolitan Omaha Education Consortium (MOEC) and the Omaha Chamber of Commerce.
- Hosted mutually reinforcing activities:
 - › Math Circle events in partnership with UNO Mathematics Department – Math with an Engineer (Olsson); Math and Gerrymandering; Math and Art (Why Arts).
 - › Two community conversations, held on the Omaha Gallup campus, with over 140 participants representing over 60 organizations – “Bridging the Gap in the STEM Workforce: Business + Industry + Education”, April and August.
 - › Fall Summit, held on the UNO campus, titled “Charting a Course for Success: Omaha's Strategy for STEM Pathways”. Keynote speakers: Dr. Jeff Weld – [Lead Author of Charting a Course for Success: America's Strategy for STEM Education](#); and Cathy Lang –State Director of the NE Business Development Center, October.



- Expanded the dissemination process for hosted events by partner organizations.
- Initiated a new on-line registration, billing and youth protection component for selected OSE events using the CircuiTree Solution Software.
- Assisted in a \$4.2 million-dollar EPSCoR grant proposal by UNO related to STEM Pathways as submitted to the National Science Foundation.
- Worked closely with UNO's IS&T college and Applied Information Management (AIM) Institute to prepare detailed online portal plans, structures, and protocol for ramp up into OSE collective piloting.
- Participated in the launch of the UNO's new STEM TRAIL Center – September 20th.
- Partnered with Dr. Tracie Reding's Social Network Analysis (SNA) study as a way to identify OSE hubs for collaboration: [Determining the University's Position in a Multi-stakeholder Collaborative Network](#)



- Partnered with UNO/Phi Delta Kappa on facilitating a “Careers for the Future”, Superintendents Dinner, January.
- Contributed to efforts of the Metro Science and Engineering Fair that facilitates event for middle and high school students, at OHDZA, March.
- Participated in the National Science Foundation sponsored forum in Virginia, with the goal to develop national strategies to successfully engage business and industry in mathematics readiness for college focused initiatives, April.
- Provided University partners with the “OSE Broader Impact Statement” for National Science Foundation proposals.
- Assisted with recruiting participants for the UNMC/UNO uBEATS e-learning initiative.
- Partnered with Omaha's Henry Doorly Zoo and Aquarium, and NETV in the Adventure of Science Initiative, and Spring LIVE City Nature Challenge, April.
- Collaborated with Omaha Public Schools to offer student focused events:
 - › Hosted an event with King Science and Technology Magnet to identify key content connections between educators and business partners, that would allow students an opportunity to learn of possible career options. Partners included UNMC/IXCEL, UNO Biomechanics Research Building, Clarkson College, Omaha's Henry Doorly Zoo and Aquarium, Fontenelle Forest, Keep Omaha Beautiful, Verdis Group, MCC North, Science on a Sphere/Drones, and Duncan Aviation, August.
 - › Bryan High School Career Fair, August.

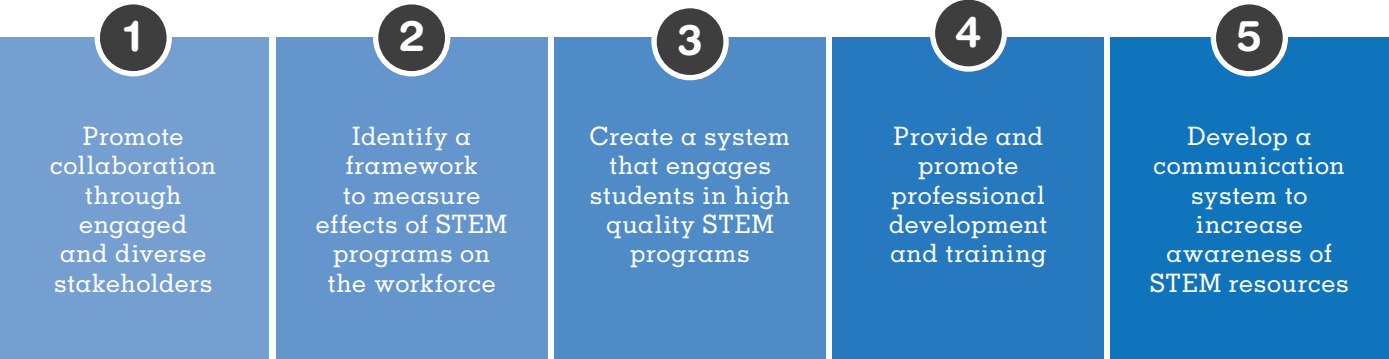


COMMUNICATION

- Delivered conference presentations:
 - Three national conferences including Association for Learning Environments Omaha, March; STEM Funders Network/STEM Learning Ecosystem Initiative Conference, Cleveland October; Nebraska Association of School Boards Conference, Omaha, November.
 - Informal Science Share-A-Thon, St. Louis, June.
- Produced monthly OSE Newsletters featuring a STEM Professional You Should Know!
- Facilitated monthly STEM Articles in the Omaha Public School newsletter.
- Facilitated monthly OSE update article in UNO STEM TRAIL Center newsletter.
- Featured in the UNO Magazine, Winter <https://www.unomaha.edu/news/2020/01/winter-2020-uno-magazine-now-availabile.php#.XihsK9Kb-GU.email>
- Launched OSE STEM Approved Program initiative with OHDZA youth camps and programs, UNO Aim for the Stars Summer Program and Clarkson College program. This is intended to assist parents and educator on identifying programs that are high quality and student centered in hands-on STEM learning.
- Updated OSE website to include details on OSE Committee’s work and resources such as internships calendar of STEM related events.
- Participated in local broadcast discussions:
 - Broadcast on MCC and More Program, February
 - Broadcast with Tech Talk, March.
 - Moms Everyday – WOWT, May

The STEM Approved Program is a tool provided by the Omaha STEM Ecosystem to assure best practices for youth programs are evident. This tool is used for informational and educational purposes only. For more details on STEM Approved Program criteria, please visit our website: OmahaSTEM.com

GOALS



2019 COMMITTEE ACCOMPLISHMENTS

Diverse and Engaged Stakeholders Committee – Chair – Victoria Novak/MCC

- Refined and used data driven surveys to document and measure stakeholder engagement:
 - Conducted an OSE Social Network Analysis – that identifies the connectivity of stakeholders. (yearly)
- Increased number of active stakeholders involved to 809 members.

Research and Advocacy Committee – Chair – Jenna Yentes, Ph.D./UNO

- Developed a Best Practice self-assessment tool for STEM programs to identify their program’s impact in STEM engagement (available on website) that will be used to help provide excellence to the Online Portal to be piloted in 2020.
- Developed an Institutional Review Board proposal for supporting the Online Portal.
- Developed a White Paper on the status of STEM in Omaha. (available on website)

Quality STEM Programs Committee – Chair – Jim Dennell/BCDM

- Completed a template document to capture STEM program mapping across the Ecosystem. This document will facilitate and curate the content for the Online Portal.
- Developed “STEM Approved Program” process for assuring quality STEM programs for youth.

Professional Development and Training Committee – Chair – Lori Bachle/Clarkson College

- Hosted two Community Conversation to gain consensus on critical skills needed for workforce, to include business, education, non-profit, science centers and museums stakeholders.
- Developed a shared vision of cohesive knowledge base and skill set critical for the economy of 21st Century workforce.

Communication Committee – Chair – Monique Farmer/Omaha Public Schools

- Completed message mapping strategic planning for OSE.
- Facilitated monthly OSE article in the OPS Newsletter that reaches 50,000 area families.
- Facilitating communication projects with UNL communication students for target audience campaign.



WHY WE ARE INVOLVED

The Steering Committee serves as the Omaha STEM Ecosystem’s governing board. The committee members are dedicated to moving our mission and goals forward and assure that Omaha remains a robust STEM community to grow our talent pipeline.

NAME, TITLE	ORGANIZATION
Megan Addison, Executive Director	Collective for Youth
Jim Collison, IT Manager	Gallup
Karlus Cozart, Project Director	Omaha Public Schools
Jeff Sebree, General Director - Talent Acquisition	Union Pacific Railroad
Michael Flesch, Dean, Math & Natural Science	Metropolitan Community College
Neal Grandgenett, Dr. George and Sally Haddix Community Chair of STEM Education	University of Nebraska at Omaha
Elizabeth Mulkerrin, Vice President of Education	Omaha’s Henry Doorly Zoo & Aquarium
Andreia Nebel, Vice President of Academic Affairs	Clarkson College
Chris Schaben, Science Supervisor K-12	Omaha Public Schools
Julie Sigmon, Director	Omaha STEM Ecosystem
Levi Thiele, Vice President	Applied Information Management Institute
Tracie Reding, STEM Outreach Director	University of Nebraska at Omaha
Laurie Zagurski, Manager – Stakeholder/Outreach	Omaha Public Power District



“The **AIM Institute** is proud of our partnership with the STEM ecosystem, UNO, and the business partners. The STEM Ecosystem team has a spirit of collaboration that is inspiring and a model for other community partnerships. The structured process for developing STEM pathways ensures that decisions are data informed and real solutions are developed. AIM’s focus is on tech talent pathways and our job is made easier by having the support and guidance of the OSE.”

Kandace Miller / President and CEO



“**Peter Kiewit Foundation’s** partnership with the Omaha STEM Ecosystem supports our goal to address the shortfall of STEM professionals in Omaha. Their work is strengthening educational pathways from cradle to career and creating a strong and engaged network of community organizations to grow and support effective STEM pathways. We are proud to support their work.”

Pat Thraen / Program Officer



“**BCDM Architects** has been committed to the Omaha STEM Ecosystem offering financial support and leadership to the mission of connecting education, agencies and industry who benefit from the STEM Career Pathway. As a business with STEM careers in the architecture and engineering industry, we are motivated by the social and economic return on investment that our STEM community receives. The Ecosystem has established a network that is allowing great minds to collaborate to create innovative career pathways that are purposeful, strategic and efficient for our youth to become career ready. ”

Jim Dennell / Principal



“As the only **College of Engineering in Nebraska**, we are deeply committed to meeting the state’s STEM workforce needs and in partnering with government and private sector organizations that are working towards greater engineering economic development in the state. The Omaha STEM Ecosystem has built a powerful coalition of organizations that are developing effective initiatives to address STEM needs in Omaha. These are strongly aligned with the College of Engineering’s ongoing initiatives to educate the next generation of the engineering, construction and computing workforce while ensuring that opportunities our programs provide are available to all students. We look forward to continuing to partner with the Omaha STEM Ecosystem to make Omaha a model of STEM education.”

Lance Perez, Ph.D. / Dean



“**Union Pacific Railroad** is proud to support the Omaha STEM Ecosystem, fostering innovation and putting youth on track to become our community’s future leaders and role models. We’ve called Omaha ‘home’ for nearly 160 years, and, during that time, we’ve provided job training and family-supporting careers for thousands, many of which are in STEM-related fields. We believe our partnership with STEM Ecosystem can inspire children, especially those in under-represented populations, to explore careers they may not otherwise be exposed to and build Omaha’s future workforce.”

Scott Moore / Senior VP & Chief Administrative Officer

VISION

The Omaha STEM Ecosystem envisions a community where all young people, especially those underrepresented in STEM Careers, will have the opportunities needed to be successful in learning, scientific thinking, examining potential career paths and exploring opportunities to extend their educational achievements.

We Could Not Do this Without YOU!

FOUNDERS



Anne Hubbard

Parker Family Foundation

Nebel Family

CHAMPIONS



GALLUP®



BVH ARCHITECTURE




valmont®



Turner



Gary & Kathy Gates



We look forward to continuing
to expand our partnerships
and collaborations of the
Omaha STEM Ecosystem, both
at the local and national level,
as we transform Omaha into
a robust STEM Community to
grow our talent pipeline.

To learn more about ways to being involved or support
the Omaha STEM Ecosystem, please contact:

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