

OMAHA

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ECOSYSTEM

2018

ANNUAL REPORT

*Transforming Omaha
into a Robust Stem Community*



MESSAGE FROM THE DIRECTOR

It is hard to believe that our second year as an organization is in the books and what an amazing journey we've had! The Omaha STEM Ecosystem (OSE) has made considerable strides in building a network to create the STEM innovators, educators, researchers and leaders of tomorrow.

The *Charting A Course for Success: America's Strategy for STEM Education 2018* report from the US Committee on STEM Education and National Science & Technology Council mentions, "Over the past 25 years, STEM education has been evolving from a convenient clustering of four overlapping disciplines towards a more cohesive knowledge base and skill set critical for the economy of the 21st century." In response to the trends in workforce shortage across the US and in the Greater Omaha area, the OSE has embraced the challenge to develop a holistic STEM network that brings together community partners to share resources and advance industry opportunities in STEM. This comprises of looking at STEM education and training that occurs from pre-kindergarten to high school; both in and out of school programs including science centers and museums; post-secondary to post-doctoral studies; and through community colleges technical education, internships, apprenticeships and retraining programs.

The Omaha STEM Ecosystem serves as the backbone organization that supports collective impact initiatives around developing STEM pathways to careers in Omaha. The OSE has developed a structured process that leads to effective data-informed decisions. Through the dedication of our committee members, partners and supporters, we have made significant progress in moving this important work forward.

This report highlights the collective accomplishments of our organization and tells the evolving story of leveraging our community's strengths – nationally recognized centers of excellence and industry leaders – to help to enhance STEM education and career readiness for current and future economic growth.

We look forward to continuing this journey and we invite you to join us, if you're not already involved.

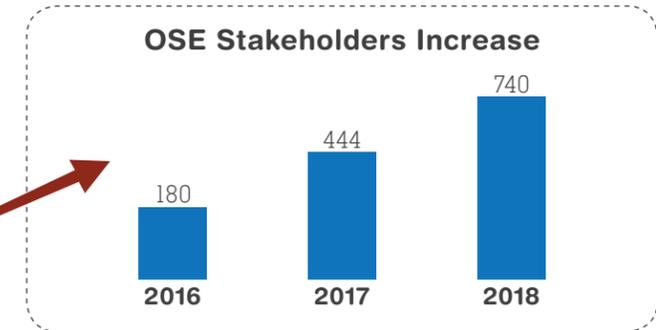
Thank you,

Julie Sigmon / Director

THE POWER OF COLLECTIVE ACTION comes from the coordination of differentiated activities through a mutually reinforcing plan of action! What follows are some of our most important accomplishments.

YEAR 2 HIGHLIGHTS

- Stakeholders engaged in the OSE has increased by 321% since 2016!



- On-going refinements of our strategic plan, goals committees and other collaborative structures.
- The addition of Founding organizations, which this last year included: UNO, Omaha's Henry Doorly Zoo and Aquarium, DLR, UNMC, NU Foundation, UNL/College of Engineering, OPPD, MCC, Omaha ZOO Foundation, Parker Family Foundation, Peter Kiewit Foundation, Pacific Life Foundation, the Nebel Family, the AIM Institute and Anne Hubbard.
- Worked across committees with UNO's Information Science and Technology college to prepare detailed committee support structures for inclusion of youth opportunities, in an OSE online portal.
- Expanded coordination with the Metropolitan Omaha Education Consortium (MOEC) and the Omaha Chamber of Commerce.
- Expanded the dissemination process for hosted events by partner organizations.
- 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 to prepare detailed online portal plans, structures, and protocols for ramp up into OSE collective piloting.
- OSE hosted mutually reinforcing activities:
 - Pathways to Emerging Technology: VR Technology in the Workplace Today and Tomorrow – panel discussion
 - The Next Generation Classroom presentation with Sheppard's Business Interiors



- › Hosted Chamber’s Young Professionals event
- › Co-lead the Topics in Education Symposium with UNO/Phi Delta Kappa that focused on K-12 STEM education
- › Facilitated Math Teaching Circle events in partnership with UNO Mathematics Department- Math with an Architect; Math with a Computer Scientist; Math with a Musician; Math with a Chef
- › PD Workshop in Active Learning with Sheppard’s Business Interiors
- › 2019 events:
 - Hosted a community event with over 60 participants representing over 40 organizations in April – “Bridging the Gap in the STEM Workforce: Business + Industry + Education
 - Fall Summit – October 3rd – Charting a Course for Success: Omaha’s Strategy for STEM Pathways. Key note speakers: Dr. Jeff Weld – Exec. Director for the Iowa Governor’s STEM Advisory Council; and Cathy Lang – State Director of the NE Business Development Center
- Continuous Communication
 - › Presented at three national conferences including STEM Funders Network/US News and World Report, Wash. DC National Modeling & Simulation Coalition Conference, Omaha; and STEM Funders Network/STEM Learning Ecosystem Initiative Conference, Newport Beach, CA
 - › Monthly OSE Newsletters featuring a STEM Professional You Should Know!
 - › Facilitated monthly STEM Articles in the Omaha Public School newsletter
 - › Updated OSE website to include details on our work moving forward and resources



GOALS

1	2	3	4	5
Promote collaboration through engaged and diverse stakeholders	Identify a framework to measure effects of STEM programs on the workforce	Create a system that engages students in high quality STEM programs	Provide and promote professional development and training	Develop a communication system to increase awareness of STEM resources

2018 COMMITTEE ACCOMPLISHMENTS

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

- Refined and used data driven surveys to measure stakeholder engagement:
 - › Conducted a Social Network Analysis – that identifies the connectivity of stakeholders (yearly)
 - › Inventoried stakeholder resources/assets (TTT) (Bi-yearly)
 - › Researched and secured permission for a National Science Foundation survey – “Middle/High School Student Attitudes Towards STEM”, which will be conducted with Omaha area youth in 2019
 - › Increased number of active stakeholders involved to 740 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 2019
- Collecting existing data from Omaha, state and national databases to identify strengths and weaknesses in the Omaha area and to establish joint metrics for measurement of success of the OSE

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
- Contributed to Phase I online portal piloting partnership with UNO/IS&T – The portal will allow access to opportunities and resources to STEM programs, internships, etc. (2019 beta test)

Professional Development and Training Committee – Chair – Amma Sumner/Prairie STEM

- Developing a shared vision of cohesive knowledge base and skill set critical for the economy of 21st Century workforce
- Assisted with shared ecosystem events, such as the TIES Conference, Nebraska Robotics Expo, NE City Nature Challenge, and the NE Science Festival; Metro Science and Engineering Fair
- Worked closely with area school STEM nights as led by Prairie STEM

Communication Committee – Chair – Monique Farmer/Omaha Public Schools

- Completed message mapping strategic planning for OSE
- Secured a grant from NE Public Relations Society of America (NEPRSA) – to review OSE communication plan and to promote recommendations moving forward
- Facilitated monthly OSE article in OPS Newsletter that reaches 50,000 area families

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
Paige Dempsey, Learning & Performance	Dempsey Strategies
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



“OPPDP’s commitment to customers extends beyond providing affordable rates, reliable power and environmentally sensitive energy services. That commitment also includes building relationships that help strengthen the communities we serve. Key components of those relationships are developing the area workforce and helping to attract, retain and expand businesses in the area. The Omaha STEM Ecosystem is a perfect example of these relationships. By bringing together businesses, schools and area organizations we can show how STEM skills translate into jobs across Nebraska.”

Tim Burke / President and CEO



“Metropolitan Community College’s involvement with the STEM Ecosystem has shown immediate returns with lasting potential. By connecting our MCC STEM professionals with the STEM Ecosystem network, we have enhanced our curriculum, improved transfer pathways with our K-12 and four-year educational partners and offered hands-on training opportunities for teachers. The result is a rich array of student learning opportunities that bring STEM concepts to life – from kindergarten on up.”

Randy Schmailzl / President



“Clarkson College is rooted in its mission to provide high quality, ethical, and compassionate health care education, and the STEM Ecosystem partnership plays a critical role in this mission. The Omaha STEM Ecosystem is committed to improving the access of services to faculty and staff to better educate students across curriculums. This partnership is invaluable, as we work together with the STEM Ecosystem to assist in local science fairs and committee initiatives. The opportunities in healthcare fields are abundant, and Clarkson College is proud to be a part of the development efforts for all students to have an opportunity to pursue a career in health care.”

Andreia Nebel / Vice President of Academic Affairs



“Omaha’s Henry Doorly Zoo & Aquarium’s partnership with UNO and area businesses in support of the STEM ecosystem help extend our reach, efficiency and advocacy when students are considering a STEM career. Opportunities are made much easier for students and parents to find STEM classes and internships. Companies are willing to do more than run their businesses today. They can help foster a workforce for tomorrow through the STEM ecosystem.”

Dennis E Pate / President and CEO

GALLUP "Gallup is committed to the overall success of the Omaha STEM Ecosystem by supporting it with people resources, facility resources and community outreach. Since its inception, we have seen great improvement overall in the amount of visibility and success of local programs at all levels. I have no doubt the Ecosystem is making a huge difference in the Omaha Metro for both the K12 and University systems and continues to be a leader in STEM education and learning in the Silicon Prairie."

Jim Collison / *Technology Manager*



"The **Metropolitan Omaha Education Consortium** (MOEC), a collaboration of 12 school districts, 2 community colleges and UNO, seeks partnerships to help strengthen our vision that all students in the metro area will receive an exceptional education that provides multiple pathways into meaningful careers and a high quality of life. The Omaha STEM Ecosystem is a very willing partner in that work. The Ecosystem has helped MOEC by sharing ideas, connecting community collaborators, planning joint initiatives and encouraging exciting dreams. MOEC looks forward to continuing involvement with the STEM Ecosystem."

Martha Bruckner / *Executive Director*



"**UNO and UNMC** are deeply committed to helping to support the critically important STEM workforce development in our city, state and nation, and we are pleased to see that the Omaha STEM Ecosystem continues to evolve into a transformative city forum for collaboration, innovation and shared action. UNO and UNMC are increasingly collaborating with each other and with the developing STEM Ecosystem on various key initiatives, such as the UNO/UNMC facilitated uBEATS program (developing online health science modules for grade 6-12 students), the new UNO STEM TRAIL Center (facilitating Teaching, Research, and Inquiry-Based Learning initiatives), and UNMC's iEXCEL program, that is bringing high technology new frontiers in visualization, simulation and virtual reality to applications in the health sciences, as well as other STEM learning contexts. The Omaha STEM Ecosystem is helping to showcase and to continue to build upon these important initiatives. We are proud to participate in, and to help to lead this organization, as we collectively strive to make Omaha a true national model for excellence in STEM and in STEM workforce development."

Jeffrey P. Gold, MD / *Chancellor of UNO and UNMC*

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®



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OMAHA STEM ECOSYSTEM

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:

Julie Sigmon

Omaha STEM Ecosystem

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