

A background network diagram consisting of grey circles of varying sizes connected by thin grey lines, forming a complex web-like structure.

OMAHA

S **T** **E** **M**

ECOSYSTEM

2020
ANNUAL REPORT

*Transforming Omaha into a Robust Center of
STEM Excellence and Innovation*



MESSAGE FROM THE DIRECTOR

As we step forward from 2020, I have been reflecting upon our excellent shared progress, as well as the lessons learned with the sudden change from our communal workplaces and meetings, to the general isolation of a virtual world. I am awed by the power of science, technology, engineering, and mathematics. Science powered on to develop a vaccine, technology filled the distance between us, engineering repurposed factories for life-saving equipment and mathematics is helping us forecast how to approach this situation and when to expect this will all be over. Through these challenging times, we realized the ever-changing landscape of education and business and the critical role of partnerships. The Omaha STEM Ecosystem (OSE) itself has continued to fulfill the roles of connector, collaborator and communicator to help support virtual programs and resources to educators, students and families. Through these efforts, the stage has been set to build an even stronger infrastructure and engage more community partners, and to advocate for innovative programs that assure equity and access for all students and families.

This year also provided an opportunity for the OSE Executive Leadership team to look towards the future and strategize about how to continue to transform Omaha into a robust center of STEM excellence and innovation. We developed

our 2020 – 2023 strategic plan, positioning the OSE to establish sustainability in its increasing impact on growing community development, recruitment, and retention.

In closing, I am reminded of a quote from Barack Obama, 44th President of the United States, "In a global economy where the most valuable skill you can sell is your knowledge, a good education is no longer a pathway to opportunity – it is an essential prerequisite." This remains with me, as a compass that guides our continued and collective work.

Thank you,

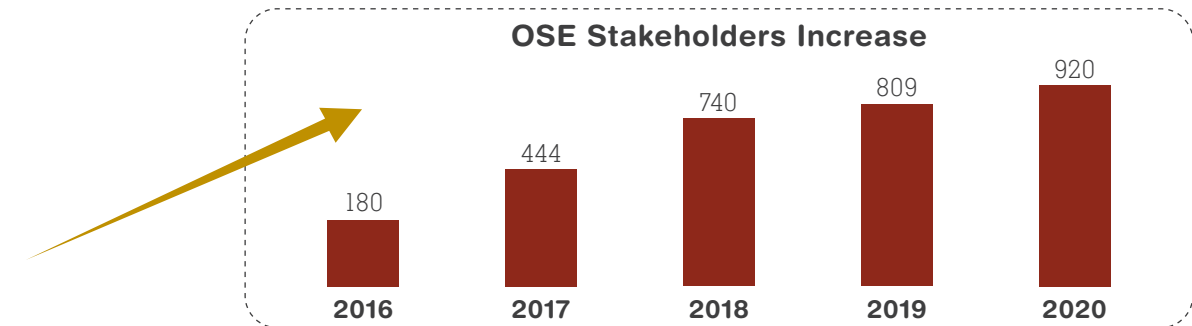
Julie Sigmon / Director

YEAR 4 HIGHLIGHTS

THE POWER OF STRATEGIC PARTNERSHIPS comes from the coordination of their differentiated activities through a mutually reinforcing plan.

CONNECTIONS

Stakeholders engaged in the OSE has year- to- year growth of 14%, with total growth since inception of 411%!



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

Received on-going guidance and support from our Founding organizations: University of Nebraska at Omaha, Omaha's Henry Doorly Zoo and Aquarium, DLR Group, Omaha Public Power District, University of Nebraska Medical Center, Metropolitan Community College, Peter Kiewit Foundation, University of Nebraska Lincoln/College of Engineering, Parker Family Foundation, Pacific Life, Omaha Zoo Foundation, Nebel Family, Clarkson College, Union Pacific Railroad, Applied Information Management Institute, NE Healthcare Collaborative with Cynchealth, and Claire M. Hubbard Foundation.

- Hosted mutually reinforcing activities:

- › **Celebrating Creativity in a Covid-19 Culture Roundtable Series**

As we navigated the challenges and opportunities this new culture 2020 presented us with, we also drew on the knowledge and experience of our diverse stakeholders. This series of three virtual Roundtable Discussions was an opportunity to share our experiences and lessons learned now, near and far. Rachel Jacobson, President of Heritage Services, opened the last of the three discussion, October 20th roundtable with a presentation on the new Kiewit Luminarium Center and inspired us with framing the value of our work – developing innovative thinkers. Each roundtable discussion identified key themes such; building equity, creative engagement in a virtual world, and building support with efficiencies leveraged by technology. There were 252 registrations involving over 75 different community organizations.



- › **Math Teaching Circles**

Math Teaching Circle is a series that connects educator and business partners highlighting the mathematics utilized in careers.

- Math and Medicine in partnership with Clarkson College
- Math and Biomechanics in partnership with UNO Biomechanics Research Building
- Math at Union Pacific (delayed until after the pandemic)



- › **WOZ Ed**

- An engaging, and hands-on event devoted to K-12 education, project based learning and career pathways. This session focused on amazing opportunities that districts can provide for their students in Coding, Engineering Design Process, Drones, Cybersecurity, Mobile Development, Data Science, Animation, and Artificial Intelligence Careers.



- › **Hybrid or Blended Environment: Engaging and Motivating Learners Wherever Learning is Happening!**

- The Omaha STEM Ecosystem, in partnership with Project Lead the Way, hosted a virtual presentation. Engaging and motivating learners is a challenge many educators face regardless of where the learning takes place. This collaborative session provided tips and tools, on how to build excitement for content delivery and discover meaningful ways to motivate learners to tackle real-world problems.



- Assisted in the planning and ramp up for the new Kiewit Illuminarium Center, scheduled to open 2023.
- The Midwest STEM Forum - OSE leadership team members participated in a regional virtual meeting with over 70 members from Midwest STEM Ecosystems. It was a great opportunity to learn what was going on in other communities and sharing our best practices around, high quality elementary STEM, recruiting and supporting diverse STEM leaders, equity – connecting to diverse communities and students, effective grade-level mathematics integration, and evidence to support OSE's Return on Investment.
- Work with the University of Nebraska at Omaha's STEM Teaching, Research, and Inquiry-Based Learning Center (STEM TRAIL) to help faculty use the OSE as a "broader impacts" mechanism within grant proposals.
- Participate with University of Nebraska-Lincoln marketing students for their class projects in developing marketing projects on behalf of the OSE.
- Partner and co-sponsoring partner, AIM Institute's educational and networking events: Heartland Developers Conference (KDC) and Infotec. Both events create tremendous opportunities to make powerful connections, as we work together to build a stronger STEM community.
- Presentation at the Millard Rotary meeting on the role the OSE plays in building an innovative STEM workforce.
- Participate in Millard Public School STEM Academy Advisory Group.
- Expand the dissemination process for hosted events by numerous OSE partner organizations.

- Assisted in a \$4.2 million-dollar EPSCoR grant proposal by UNO related STEM<Pathways as submitted to the National Science Foundation. (UNO), a \$1.5 ITEST proposal on e-learning (UNO and UNMC) and an \$1.5 AISL proposal for the STEM Community Platform (AIM, OHDZA, UNO) and numerous other smaller grant proposals.
- Contributed to efforts, including judge recruitment for the Metro Science and Engineering Fair that facilitates events for middle and high school students at OHDZA.
- Assisted with the statewide Nebraska Robotics Expo in 20210 and in the virtual Robotics Expo for 2021.

“The Omaha STEM Ecosystem’s reach has made itself to young women pursuing STEM careers. When Intern Omaha, an internship program designed for high school seniors, asked for mentors in the STEM community, the Omaha STEM Ecosystem answered the call. Intern Omaha appreciates this partnership as it continues to grow to ensure young STEM professionals have quality relationships to help them navigate STEM Careers. The OSE is “dedicated to growing the STEM workforce in the Omaha metropolitan area through ongoing partnerships with community organizations.” The partnerships made through connections with the STEM Ecosystem and community organizations have benefited and will continue to benefit young STEM professionals in the Omaha area.”

–Allie Thompson, Intern Omaha (powered by Avenue Scholars)



COMMUNICATION

- **Building for the Future – STEM Community Platform –** The STEM Community Platform, in partnership with AIM Institute, is an on-line clearinghouse or “yellow pages” of information about program offerings, career information, and resources. It will offer a wide variety of science, technology, engineering and mathematics, cataloged in one convenient location. Launch date March 2021. Five different OSE –led committees have contributed to various elements.
- Nebraska’s Governor Pete Ricketts proclaimed November 8th, as Omaha STEM Ecosystem Celebrates National STEM day in recognition of the efforts of the Omaha STEM Ecosystem and its partners in filling the state’s tech talent pipeline. The Governor Rickett proclamation recognizes the efforts by OSE and its community partners to build a stronger STEM community by connecting education, and business development for tomorrow’s workforce.



STRATEGIC PLAN 2020 – 2023

The Executive Leadership team and OSE Committee Chairs met in five virtual session as a team to co-create and build an innovative strategic plan. Working with Parlay Consulting on the process, the OSE team updated the vision and mission for the organization, set a practical vision for the future and strategic goals for three years.

Our Mission

The Omaha STEM Ecosystem is building a stronger STEM community by connecting education and business development for tomorrow's workforce.

Our Vision

Our vision is transforming Omaha into a robust center of STEM excellence and innovation.

Practical Vision. OSE will...

- Building Strong Infrastructure & Capacity to Support Mission Impact
- Advocate for Programs and Innovative Models
- Expand Evidence-Driven Research, Assessments & Outcomes
- Engage Community through Communication, Collaboration & Connection
- Diversify Funding to Assure Financial Sustainability
- Grow Community Development, Recruitment & Retention

Strategic Directions & 2023 Goals

OSE will accomplish this vision by...

1. Building Sustainability to Increase Impact

OSE will use their business to plan that includes development of a robust staffing infrastructure, committee support, and succession planning.

OSE will have an operational and diverse business plan that includes leveraging community partnerships that diversify funding sources and processes for contractual obligations.

2. Expanding Communication to Elevate Collaboration

OSE will implement a concise brand that includes common vocabulary.

OSE will implement a Communication Plan.

OSE will engage all Stakeholders.

3. Measuring Impact to Ensure Progress

OSE will use a focus group comprised of equal representation from each sector to test and iterate the data depository.

OSE will finalize the metric list and publish/distribute.

OSE will have common, data collection metrics specific for each sector will be publish and distributed.

OSE will have identified research questions for each sector that lead to one common research outcome to measure the impact of OSE on the Omaha area.

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, President | Cozart Consulting, LLC |
| Joy Doll, Vice President | NE Healthcare Collaborative |
| 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 |
| John Fonda, Chairman /CEO | John Day Company |
| Julie Sigmon, Director | Omaha STEM Ecosystem |
| Levi Thiele, Vice President - Program & Resource Dev. | Applied Information Management Institute |
| Tracie Reding, Office of STEM | University of Nebraska at Omaha |
| Laurie Zagurski, Manager - Stakeholder/Community Outreach | Omaha Public Power District |
| Jeff Sebree, General Director - Talent Acquisition | Union Pacific |



“Health care changes rapidly and has increasingly become a data-driven business. We need experts and diverse perspectives in many areas to address challenges in health care to improve population health. At the Nebraska Healthcare Collaborative, we are focused on workforce and talent development related to health information technology. Through our partnership with the Omaha STEM Ecosystem, we are able to bridge education and industry to engage in robust discussions about the utility of health data to serve and improve the life of Nebraskans.”

Joy Doll, OTD, OTR/L, FNAP / Vice President



“iEXCEL has benefited greatly from our ongoing partnership with Omaha STEM Ecosystem to connect with students, educators, corporations and nonprofits. Countless collaborations centered on youth programming, community projects and workforce development have grown out of relationships established through the Omaha STEM Ecosystem. We are fortunate to have such a relevant, responsive and comprehensive platform for making these connections in our community.”

Michael Hollins / Director, Community & Business Engagement



“The Omaha STEM Ecosystem (OSE) provided the connection that landed me one of the best jobs I have ever had, which provided opportunities to build the tech talent ecosystem.

As the Chair of the Diverse & Engaged Stakeholders Committee, I had many conversations and opportunities on how to connect and collaborate. As a result, I learned of a position at **Metropolitan Community College** in the Center for Advanced & Emerging Technology. In this position, I was able to connect and collaborate with many organizations across the greater Omaha community.

When you take a moment to step back and look at the meaning behind these connections, anyone can see that none of this would have occurred without the direct impact of Omaha STEM Ecosystem. OSE connected me to a new job in higher education, which allowed me to take a vision to serve our corporate partners to grow their staffs’ tech talent as well as creating retention within their organization. Cross sector collaboration at its best. My life and many others were improved by this OSE connection!”

Victoria Novak, M.P.A. / Chair of the Diverse & Engaged Stakeholders Committee

VISION

Our Vision is transforming Omaha into a robust center of STEM excellence and innovation.

We Could Not Do this Without YOU!

FOUNDERS



Anne Hubbard

Parker Family Foundation

Nebel Family




CHAMPIONS



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:

Julie Sigmon

Omaha STEM Ecosystem

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