A Proposal to Support Leadership of the Newly Formed Omaha STEM Ecosystem
THE GROWING NEED FOR STEM

“In a world that’s becoming increasingly complex, where success is driven not only by what you know, but by what you can do with what you know, it’s more important than ever for our youth to be equipped with the knowledge and skills to solve tough problems, gather and evaluate evidence, and make sense of information. These are the types of skills that students learn by studying science, technology, engineering, and math—subjects collectively known as STEM.”

— U.S. Department of Education

While the need for STEM learning is well-recognized, the U.S. faces a looming shortfall of STEM professionals. The American College Test (ACT) now reports that 78 percent of high school graduates are not ready for entry-level college classes. At the same time, projections indicate a need for several million new college graduates with STEM degrees by 2018.
LEADING THE WAY

It is critical for communities across the nation to meet the growing need for bright, inquiring and knowledgeable minds. In Omaha, a collaborative partnership that spans sectors and communities has already developed to proactively address this challenge. Several stakeholders, including local school districts, businesses and science advocacy groups, have met regularly to discuss ways to enhance STEM educational pathways and pipelines across the city and region. That ongoing collaboration has culminated in a growing systematic effort led by two major institutions – the University of Nebraska at Omaha and Omaha’s Henry Doorly Zoo and Aquarium – to create the Omaha STEM Ecosystem and establish a director position to lead this citywide partnership.

As we build on this momentum, we need every stakeholder to step up and help develop the scientists, engineers and innovators of tomorrow by creating an Omaha STEM Ecosystem that challenges us to learn, grow and seek solutions for the future together. Join us.

More than 40 individuals across the Omaha metro representing 20 organizations have attended STEM Ecosystem brainstorming sessions. Organizations include: United Way of the Midlands, Omaha Children’s Museum, Girls Inc., OPPD, Northstar, the Omaha Chamber of Commerce, the Peter Kiewit Foundation, Completely Kids, the Urban League of Nebraska and the University of Nebraska Medical Center.
Building a vibrant STEM workforce that will lead and devise solutions to tomorrow’s challenges requires the collaboration and brainpower of institutions, community groups and businesses across the city.

The well-respected 2014 national report entitled *How Cross-Sector Collaborations are Advancing STEM Learning* (produced by the Noyce Foundation) suggested that cross-sector citywide efforts may become the most important driver for increased success in STEM educational pathways. The report also noted that establishing leadership is the critical first step to building a city’s STEM Ecosystem efforts.

We believe the successful development of a healthy STEM workforce depends on three principles:

- The STEM educational pathways from “cradle to career” need extra support.
- All students should have a chance to become interested, engaged, and successful in these pathways.
- STEM needs to be everyone’s shared concern and potential contribution.

**What is a STEM Ecosystem?**

A STEM Ecosystem encompasses schools, after-school and summer programs, science centers, museums and businesses that together constitute a rich array of learning opportunities for young people.

Designed pathways in the STEM Ecosystem harness the unique contributions of these settings to deliver STEM learning for all children and enable young people to become engaged, knowledgeable and skilled in STEM disciplines.
A WORLD-CLASS MODEL

Our Vision

The Omaha STEM Ecosystem envisions a community where all young people, especially those underrepresented in STEM industries, 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 believe our vision will be supported by Omaha’s robust academic and business community, which will join in providing hands-on learning and internship opportunities to enhance STEM educational experiences.

Why Omaha?

From its start in 1854, the city of Omaha has been a hub for STEM careers. Whether related to agriculture, transportation, research or, most recently, technology, Omaha is a city of constant transformation and advancement in STEM.

Omaha is also home to several Fortune 500 companies and STEM industries, such as Union Pacific Railroad, Kiewit Corporation, UNMC, Werner Enterprises, and numerous community organizations with deep roots in the city. Several institutions have stepped up to lead STEM initiatives and involve others across Omaha, such as UNMC’s leadership for the Nebraska Science Festival; the Collective for Youth’s Lights On Afterschool; Beyond the School Bell’s Expanded Learning Opportunity Summit and Kiewit’s Teacher Day.

Because of its unique positioning and the strength and collaborative efforts of its institutions and community groups, Omaha has the opportunity to build a national or even world-class STEM Ecosystem model.
MAKING IT HAPPEN

The Director’s Role

The new Omaha STEM Ecosystem Director, who will be based at Omaha’s Henry Doorly Zoo and Aquarium, will report to a team of stakeholders and spur collaboration across institutions. She or he will be critically important in maximizing collaborative access and supporting STEM education efforts that are truly innovative and supportive in serving all children. Duties may include:

• Provide ongoing leadership for the Omaha STEM Ecosystem
• Lead shared goal refinement and strategic planning efforts among stakeholders
• Formalize shared communications on STEM goals and workforce development efforts
• Lead shared planning for various citywide “STEM pathway” initiatives
• Help coordinate collaborative efforts for large citywide STEM Ecosystem events (i.e. Metropolitan Science and Engineering Fair, Nebraska Science Festival, etc.)
• Publish a citywide STEM Ecosystem calendar of events
• Be a spokesperson for the advantages of working together on STEM efforts
• Build community support for STEM workforce development and “citizen science” initiatives
• Increase STEM course offerings in new collaborative venues
• Share guest speakers periodically across the STEM Ecosystem
• Synergize partners for STEM grant proposals and external funding
The Omaha STEM Ecosystem

JOIN US

Schools across Omaha have already begun to implement strategies that enhance STEM learning and offer new career pathways for students in these important fields. At the same time, the Nebraska Department of Education has recognized the need to develop STEM professionals, and the state is also focused on building closer relationships between schools and the community through accountability initiatives already underway.

Building the Omaha STEM Ecosystem now aligns closely with the goals of local schools and state institutions and will capitalize on the momentum of STEM efforts across Nebraska.

With your support and the right leadership, the Omaha STEM Ecosystem will:

1. Build capacity of collaboration through consistent, engaged and diverse stakeholders
2. Implement a shared framework that evaluates measurable effects of high-quality STEM programs and other informal science programs
3. Implement a system that ensures students are engaged in high-quality STEM programs that build complex career-ready skills
4. Provide professional development for in-school and out-of-school educators to increase relevance through project-based learning and real-world connections

As we work together to tackle complex challenges and build a future of innovation and creative problem solving, we know our success depends on the abilities and hard work of future generations. We hope you will join us as we take this crucial first step. Let us ensure our children have the foundation they need to succeed.
Since 1936, the University of Nebraska Foundation has existed to accomplish one goal – to advance the University of Nebraska. While independent from the university, we are intrinsically linked to it, connecting the dreams and passions of donors to the mission of the university, and stewarding donor generosity across its four campuses.

We believe the value of a donation cannot be measured in mere dollars and cents; private gifts have the power to transform not only higher education, but lives and communities as well. We believe the relationship with the donor is as valuable as the gift, and philanthropy should be fulfilling, inspiring and fun. Most of all, we believe our integrity, not our endowment, is our greatest asset.

University of Nebraska Foundation

Omaha Zoo Foundation

The Omaha Zoo Foundation is a nonprofit organization that was founded in 1984 to support the mission of Omaha’s Henry Doorly Zoo and Aquarium, which is dedicated to the education of the public and the preservation of earth’s priceless biodiversity.

Our work includes raising the funds needed to ensure the zoo’s continued growth and vibrancy and supporting its education, conservation and research initiatives.