



OMAHA  
**STEM**  
ECOSYSTEM  
Strategic Plan  
April 2017 – December 2019

### **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.

### **Mission**

The Omaha STEM Ecosystem encompasses a rich array of STEM learning opportunities that ensure our community is meeting the need for future skills, processes, and thinking necessary to be successful in STEM professions.

### **Problem Statement**

The Omaha community and the state of Nebraska face an overwhelming shortfall of current and future STEM professionals, similar to the deficit in the entirety of the United States.

### **Rationale**

From its inception in 1854, the City of Omaha has been a hub for STEM-related careers. Whether agriculture, transportation, research, or technology, Omaha is a city of transformation and advancement in STEM fields. Omaha is home to several Fortune 500 companies and STEM industries, such as Union Pacific Railroad, Kiewit Corporation, and Werner Enterprises. Several local institutions have stepped up to lead STEM initiatives and involve others across Omaha, including University of Nebraska Medical Center'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.

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

**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.**

# Omaha STEM Ecosystem Guiding Design Principles

- 1** Fosters a culture where the values, beliefs, interests, and strengths of the diverse cultures we serve are reflected. The cornerstone of the Omaha STEM Ecosystem is to ensure youth and adult learners, of all socio-economic backgrounds, have access and opportunities for STEM related programs.
- 2** Sustain an overarching structure to bring community partners together to advance STEM learning as a priority in Omaha. We welcome diverse partners and experiment with innovative ways for engagement. By creating a network of community organizations, we provide a venue for collaboration around solutions to STEM issues and leveraging of resources.
- 3** Create pathways through experiential learning, high quality STEM programs, and job-connected mentoring/internships, that create lasting career opportunities. Formulate workforce development opportunities for individuals of all ages.
- 4** Support a research-informed culture of reflection and improvement. The measurable impact data include increased opportunities in high quality STEM program, student participation in STEM courses, and a decrease in STEM career vacancies in the Omaha community.
- 5** Foster a STEM culture where awareness of community needs is identified, a common language around STEM is clearly defined for all stakeholders, and will be guided by best practices for youth. With increased collaborative STEM efforts, we will celebrate success and apply lessons learned and provide an increase in STEM achievement celebrations in the Omaha area.
- 6** Create and maintain a system that informs and educates community members about STEM related issues, events, and resources as well as highlighting activities and celebrating STEM achievements.
- 7** Develop a system that provides continual professional development opportunities for educators, parents and business partners in STEM. Cultivate STEM professional development for educators with opportunities for mentoring, internships and externships.

# STEM Ecosystem Goals

## **Goal 1: Build capacity of collaborations through consistent, engaged, and diverse stakeholders.**

### **Measurable goals:**

- a. Determine a baseline for current stakeholder engagement
- b. Assure leadership and membership is diverse and reflective of community we serve
- c. Create platform for engagement
- d. Develop a funding and sustainability strategy

### **Priorities:**

- a. Create an Engaged and Diverse Stakeholder Committee to move the work forward
- b. Define meaning of engagement in STEM Ecosystem
- c. Develop a stakeholder database which identifies priorities, needs, expertise and facilities
- d. Develop a student leadership group to capture their voice
- e. Conduct the social network analysis survey to measure density of connections
- f. Increase diversity of stakeholders that represent an array of educational and socioeconomic backgrounds
- g. Increase diversity in leadership and committee work to provide a venue of collaboration around STEM issues and resources
- h. Create sustainability through shared resources and funding opportunities
  1. Develop a "Watch Dog" team for possible collective grants
  2. Develop awareness of current funders & look for new funding opportunities
- i. Develop strategies to keep stakeholders engaged at all levels with regular scheduled events, speakers, meetings, lecture series, etc.

## **Goal 2: Identify a shared framework that evaluates measurable effects of high quality STEM programs and their impact on STEM workforce.**

### **Measurable goals:**

- a. Generate consensus of clear definition of high quality STEM programs
- b. Develop a database resource of tools for assessing outcomes and programs
- c. Strategically select programs for evaluation pilot and to refine the evaluation process

### **Priorities:**

- a. Create Research and Evaluation Committee to move action steps forward
- b. Gain consensus on common language around high quality STEM programs
- c. Create a database of tools that currently being used to assess outcomes of high quality STEM programs
- d. Identify the perimeters that are measured, i.e. PK-16
- e. Identify ways to track key indicators for longitudinal studies
- f. Shared Framework Development with NGSS
- g. Select evaluation pilot programs to refine and update evaluation process
- h. Select an evaluator
- i. Identify measurable links of high quality STEM programs to workforce needs – how do we measure?
- j. Review and compare data from Omaha, regional and national data

**Goal 3: Develop a system that engages students in high quality STEM programs that builds complex career ready skills.**

**Measurable goals:**

- a. Develop an asset map of STEM programs that currently exists from pre-school through career which identifies the gaps in STEM opportunities
- b. Develop a linkage between STEM-related industry/businesses and STEM programs
- c. Leverage existing resources, collaborations, partnerships in high quality STEM programs

**Priorities:**

- a. Create High Quality STEM Pathway Committee to move action steps forward
- b. Develop the asset map of programs to include:
  1. Resources/funding
  2. Programs/activities
  3. Targeted age/audience
  4. Access to program, costs, locations, transportation
  5. Click to map locator
- c. Identify gaps and coordinate efforts
- d. Connect experts in internships, mentoring, etc. (business link)
- e. Develop consistent program access in sectors for multi-year tracking
- f. Bring together workforce/business leaders and educators together on a regular basis to facilitate dialogue about emerging workforce needs

**Goal 4: Promote and provide professional development and training for educators with STEM knowledge, competencies and pedagogy.**

**Measurable goals:**

- a. Identify specific STEM skills needed by industry/business to utilize in professional development and training opportunities
- b. Involve a number of diverse career connections (stakeholders) from all sectors in planning professional development and training opportunities

**Priorities:**

- a. Create Professional Development Committee to move action steps forward
- b. Define and align professional development efforts to the needs of STEM industries in our community
- c. Identify resources to provide professional development opportunities
  1. Internships with business/industry
  2. Externships with business/industry
  3. Speakers events on trends in workforce now and in future
  4. Training and support on pedagogy
- d. Develop an electronic resource bank of opportunities
- e. Connect content standards to skills in business/industry
- f. Increase number of professional development opportunities with shared resources

**Goal 5: Develop a communication system with increased awareness of STEM priority and access to resources and STEM programs.**

**Measurable goals:**

- a. Create a broader communication strategy
- b. Develop a comprehensive communication tool to increase access to resources
- c. Prioritize Communication needs

**Priorities:**

- a. Create Communication Committee to move action steps forward
- b. Develop a Communication/Marketing/PR plan
- c. Create an awareness strategy for importance of STEM learning/brand
- d. Develop a campaign that highlights STEM professionals, students, educators, careers in Omaha
- e. Develop a plan to report on a quarterly/yearly basis to all stakeholders
- f. Create a comprehensive web-based system for communication
  - 1. Highlight professionals, schools and students involved in STEM within Omaha
  - 2. Access to resources/programs
  - 3. Awareness campaign
  - 4. Matrix for success

