



# STEM

0 1 2 3 4 5 6 7 8

science

technology

engineering

mathematics

## Project SHINE

Cultivating the Next Generation  
of Innovators and Big Thinkers

## Science, Technology, Engineering, Mathematics (STEM)

### Why is it important?



#### ***Innovation depends on STEM***

An important aspect of U.S. efforts to maintain and improve economic competitiveness is the existence of a capable scientific and technological workforce.<sup>i</sup>

#### ***Jobs require STEM skills***

All jobs of the future will require a fundamental understanding of math and science, and 15 of the 20 fastest growing occupations for 2014 require significant mathematics or science preparation to successfully compete for a job.<sup>ii</sup>

#### ***U.S. students are falling behind***

There is a shrinking “innovation gap” between the U.S. and the rest of the civilized world. If we continue on our current course, and the number of nations outpacing us in the education race continues to grow at its current rate, the American standard of living will steadily fall relative to those nations, rich and poor, that are doing a better job.<sup>iii</sup>

#### ***STEM knowledge drives the Nebraska economy***

Technical careers are important because of the state’s ethanol and biodiesel production, food processing, manufacturing, and the importance of public power.

<sup>i</sup> CRS Report for Congress, Science, Engineering, and Mathematics Education: Status and Issues. Congressional Research Service Report prepared for Members and Committees of Congress. August 20, 2007, 1-4.

<sup>ii</sup> Bureau of Labor and Statistics, Fastest growing occupations, 2004-14, <http://www.bls.gov/emp/emptab21.htm>

<sup>iii</sup> Barrett, Craig. (2004). “The Next Economy”. Foreign Policy Magazine. September/October 2004 Ed.

## Project SHINE - Central Community College

### What is Project SHINE?

#### ***Education and business professionals working together to increase student interest and participation in high demand technical careers***

Project SHINE is key to increasing student success in science, technology, engineering and mathematics by building partnerships between education and business.

Nebraska businesses engage secondary and post-secondary STEM educators and their students. Project features include:

- Enriched professional development
- Individual business mentors
- Year-long school-business relationships
- Electronic library of resource materials

The intent of Project SHINE:

- Engaging education and business professionals in teaching and learning
- Exposing educators and their students to “real-world” business environments
- Building partnerships between education and business



**“I was exposed to both subject matter and terminology in my business tours that was either completely new to me or I knew just a little about. Now I’ll be able to use those in the lessons I’ve prepared for my classroom, using these terms in an educational setting.”**

# How We are Bridging the Gap Between Education and Business

## Education

**"My experience with Project SHINE has encouraged me, as an educator, to seek more information from business regarding what they expect us to do to help produce excellent future employees"**

***Providing professional development opportunities for secondary and post-secondary educators, resources for schools and summer camps for students***

### Features for Educators and Schools

- Partnerships with business including externships and year-long mentor relationships
- 19 grant-funded days of professional and curriculum development throughout the year
- Supplemental instruction materials for teachers
- Understanding real-world applications of STEM
- Create problem-based learning activities
- Summer workshops with hands-on activities and fun problems
- Resource sharing with other educators
- Available graduate credit

### Features for Students

- Exploration of career opportunities with Nebraska Career Connections
- Practical, hands-on lessons
- Week-long summer camps
  - Fun, interactive learning activities
  - Exploring science and math as it is used in business



## Business

### Features for Business:

- Growing a pipeline of skilled technicians for your business
- Incorporate business scenarios into school curriculum
- Promote the benefits of working at your company
- Build relationships with individual teachers and schools
- Discounts on customized training programs
- Recognition in marketing materials and on the program website
- Showcase your business to educators and students

**"I am better prepared to say, 'You need to learn this, and this is how or why you will use it'"**

**"Project SHINE has helped me see what skills students will need in the workplace"**



## Project Resources are Available for Everyone

Project SHINE educators develop problem-based learning exercises and activities that integrate the business world into the classroom. These lessons are written in a standardized, ready-to-use format. As a result, all educators can access hundreds of hands-on lessons inspired by business.

Project SHINE lessons integrate state and national academic standards and can be found on the Mechatronics Education Center website.

- [www.mechatronics-mec.org](http://www.mechatronics-mec.org)
- Resources
- Project SHINE
- Lesson plans for science, technology, engineering and mathematics can be found by clicking on each letter of STEM

**“Project Shine provides an opportunity for business leaders and educators to co-operate together with a common goal to provide the best possible information and tools for our students to obtain leading edge skills, as they prepare to enter the Global economy.”**

## *Lessons based in business*

MEC  
MECHATRONICS  
EDUCATION CENTER

Home » RESOURCES » Project SHINE

RESOURCES: Project SHINE

Project SHINE | Photos | Video | Webcams | Class Schedules | Curriculum | Learning Activities | Solar Workshop | Summer Robotics Inst. | Job Search | External Links | Documentation |

# Project SHINE

Shaping High-quality Integrated Nebraska Education

### Homepage

Project SHINE integrates Nebraska businesses representing energy, biofuels, food processing, and manufacturing with secondary and college science, technology, engineering, and mathematics (STEM) educators and their students. This project features educator professional development activities with business mentors, year-long school-business relationships, an electronic library of problem-based learning resource materials, and gender-specific student STEM camps. This project is funded by a grant from the National Science Foundation.

The ultimate goal of Project SHINE is to increase student participation and success entering high demand technical careers in Nebraska.

Science • Technology • Engineering • Mathematics

## Project SHINE Partners

# Thank You!

The Project SHINE team wishes to acknowledge the support of the many businesses, education and government organizations that have generously contributed their time and resources for the project.

- Automation Direct
- BD Medical - Medical Surgical Systems
- BD Medical - Pharmaceutical Systems
- Baldwin Filters
- Behlen Mfg. Co.
- Cargill Meat Solutions
- Conductix-Wampfler
- Duo-Lift Manufacturing Company Inc.
- Festo Corporation
- Fluke Corporation
- Gottberg Auto Company
- Green Plains Renewable Energy
- Katana Summit
- Kawasaki Motors Manufacturing Corp., U.S.A.
- Lincoln Machine
- Loup Power District
- Nebraska Public Power District
- NMC CAT
- Nucor Steel
- Parker Hannifin
- Rockwell Automation, Inc.
- Valero Renewable Resources
- Valmont Industries, Inc.
- Vishay Dale Electronics
- Mechatronics Education Center
- National Fluid Power Association
- Nebraska Department of Economic Development
- Nebraska Department of Education
- Nebraska Department of Labor
- Peter Kiewit Institute
- Dream It. Do It.
- University of Nebraska at Lincoln
- University of Nebraska at Omaha

**Educators, businesses, and students must work together to create a process that assures we provide students with the knowledge and skills necessary to allow the U.S. to compete in the global marketplace of the 21st century. Project SHINE is a vehicle that has begun this collaborative process, and should be replicated and expanded throughout our educational system.”**

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