STEM
science
technology
engineering
mathematics

Project SHINE
Cultivating the Next Generation of Innovators and Big Thinkers
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.1

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.2

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.3

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.3

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.


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."

Project SHINE - Central Community College
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-word 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

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

"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"

"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 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

Resources

Project SHINE

Lesson plans for science, technology, engineering and mathematics can be found by clicking on each letter of STEM.

Project Resources are Available for Everyone

Lessons based in business

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.

Project SHINE Partners

- 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 Omana

"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."
For more information about Project SHINE, please contact:

Dan Davidchik  
Central Community College  
4500 63rd Street  
Columbus NE 68602-1027  

Direct: 402.562.1408  
Toll-free in NE: 1.877.222.0780 ext. 1408  

Email: ddavidchik@ccneb.edu  
information@mechatronics-mec.org  

www.ccneb.edu  
www.mechatronics-mec.org  

This material is based upon work supported by the National Science Foundation under Grant No. 0903157. Any opinions, findings and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.