Creating a Regional Workforce for Rural Manufacturing: Linking Technical Education systems and Students to Local Business.
A Project funded by National Science Foundation
DUE-1104078

Deliverables

The Problem

The problem at its most basic level is a lack of an adequate workforce in the Region for small manufacturers. The Region is defined for the purpose of this grant as Nez Perce, Latah, Lewis, Clearwater, and Idaho counties.

How the Grant Proposed to Address the Problem

The grant proposed activities to create an educational and career pathway for regional high school students leading to living wage positions in the regional manufacturing industry. The diagram on the following page depicts the pathway with proposed exit points and potential job positions at each point.
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Educational-Career Pathway

Introduction to Educational and Career opportunities in High School-H.S. Diploma with articulated credits

Move into the workforce

- Entry Level Production
- Entry Level Marketing
- Entry Level Parts

Use articulated credits toward Associate’s degree at Lewis-Clark State College Automated Manufacturing

- Program Manager
- Machine Operator
- Engineering Technician

Continue Education at University of Idaho; Mechanical–Electrical–Architectural–Chemical Engineer or Web Design

- Mechanical Engineer
- Electrical Engineer
- Chemical Engineer
- Architectural Engineer
- Web Design

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.
1. High school students who gain knowledge using STEM integration training on Solid Modeling will be better prepared to gain entry into an Associate’s degree program at Lewis-Clark State College in Engineering Technology or Automated Manufacturing Technology. This background will assist students who wish to further their education at the University of Idaho’s College of Engineering with particular focus on the Mechanical Engineering program. With each successive increase in educational attainment opportunities for employment increase as does the associated wage.

2. The availability of positions will depend upon the exit point chosen by a student:
   a. High school graduates who choose to move into the workforce
      i. Production positions—students will gain knowledge on how to read and understand production orders.
      ii. Marketing positions—student will gain knowledge on understanding production to be able to better design marketing materials.
      iii. Parts ordering—students will gain knowledge in understanding the realm of parts, enabling them to read catalogs and order materials.
   b. Associate’s degree graduates
      i. Automated Manufacturing—students gain the knowledge and ability to convert drawings and concepts into the necessary format for manufacturing.
      ii. Program managers
      iii. Machine operators

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iv. Engineering technician

c. University level graduates
   i. Mechanical Engineers
   ii. Electrical Engineers
   iii. Chemical Engineers
   iv. Architectural Engineers
   v. Web Design

Specific Activities:

The activities for this grant evolved as participants in the collaborative effort changed. However, the overall goal of the National Science Foundation funded project has not changed.

1. Train regional Science and Math High School Teachers in how to use Solid Works (computer 3-D modeling software used by several regional manufacturers), at a basic level to incorporate concepts into their current curriculum.
   a. Two week long workshops for Science and Math teachers.
   b. Development of Reflective Guide tools for teachers to use as adjunct teaching aids.
   c. Development of online learning modules.

2. Conduct a workshop to reinforce instruction the Professional Technical High school teachers received on the Solid Works software in the Solid Works in the High School project.
3. Development of articulation agreements between Lewis-Clark State College and High Schools for information taught in the High Schools that will serve students who choose to continue education at Lewis-Clark State College.

4. Develop a sustainable, Regional Workforce Development Council through the Clearwater Economic Development Association.

5. Develop a DACUM (Developing a Curriculum) Research Chart for Entry Level Mechanical CADD Technicians.

6. Develop a Mentoring program between Regional High Schools and Regional Manufacturers.
   a. Provide coordination to link one manufacture to local area high school to act as a mentor.
   b. Create Mentor Handbook to provide guidelines for the mentorship program.
   c. Assist with development of a student competition designed to encourage regional participation.

7. Evaluation efforts as described in the grant application.