



Integrating Software and Machine-Lab Instruction
 (ISMI):
Partnership Between Pittsburgh Technical College
(PTC) and Montour High School (MHS)
Award No. 1902551



In Pennsylvania...



93.75 billion total
output from
manufacturing

565,000
total
manufacturing
employees

\$ 75,947.97
average annual
compensation

<https://www.nam.org/state-manufacturing-data/2020-pennsylvania-manufacturing-facts/>

We need to be training the next generation of workers.

ISMI is addressing the gap between design and manufacturing...

MHS Students take Mechanical Application Software class for college credit

High School Teacher Training to Ensure Sustainability Beyond Grant Period

Training on CNC Milling Machine

Expanded PTC CAD Advisory Board and Mentoring Program

At PTC we saw 100 CAD-related jobs that weren't fulfilled last year because there were not enough qualified candidates.

BUT...

MET140: Mechanical Application Software 1

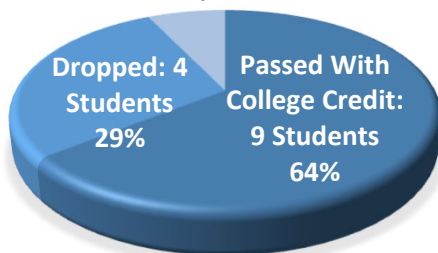
- Introduced students to CREO software
- Students used advanced techniques to create 3-D parametric models, assemblies, and construction documents as they relate to industry standards



ISMI HIGH SCHOOL STUDENT PARTICIPANTS 2019-2020



Did Not Pass:
1 Student
7%



COVID-19 Challenges Opportunities

- No hands-on lab work after mid-March; instead pivoted to mastering the software
- Extended the class into June
- Used the NSF grant to purchase Dell computers to give students without technology the ability to take the class virtually

New class offered to high school students in 2020/2021:

- MET130: Energy Technology: Introduces students to renewable energy, fossil fuels, and new energy trends

- Adding a new partnership with **Ambridge Area High School** in January
- Continuing partnership with Montour
- Creating articulation agreements with these schools
- Building new curriculum for courses
- Purchasing 3-D scanner and training faculty and students on its use
- Holding another teacher-training workshop

*Principal Investigators:
Brian Maitland and
Mark Malecki*