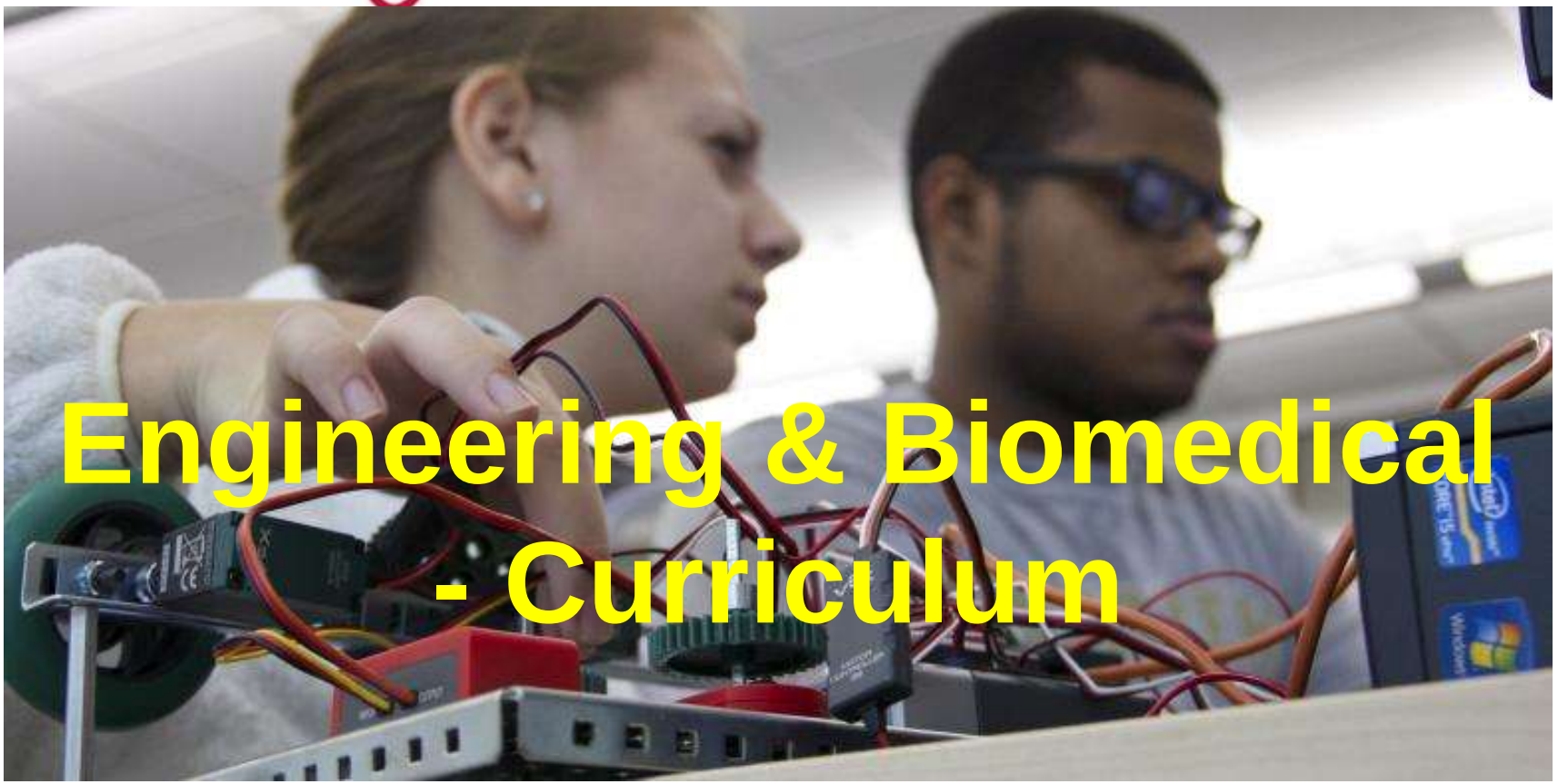
PROJECT LEAD THE WAY

PLTW



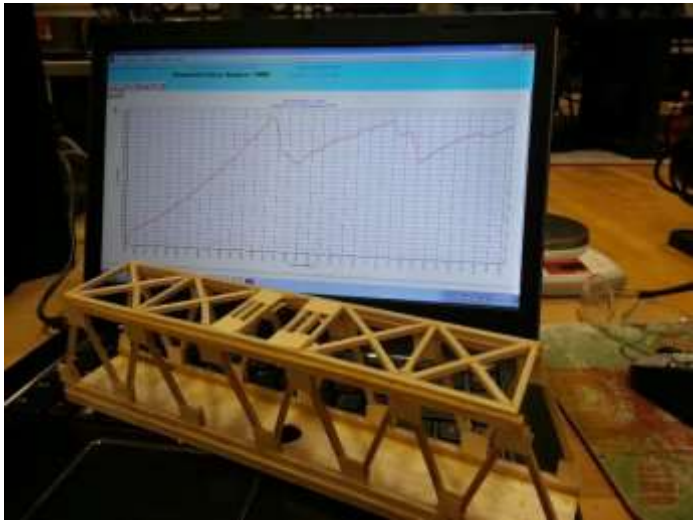
Engineering & Biomedical - Curriculum

Project-Lead-The-Way

PLTW Engineering Courses- S.T.E.M.

- **Students engage in open-ended problem solving**
- **Learn and apply the engineering design process**

(Use the same leading technology and software as used in Industry and Manufacturing)



Students Investigate –

- **Bio-Medical Engineering**
- **Intro to Engineering Design**
- **Digital Electronics**
- **Principles of Engineering**

Opportunity to learn different engineering disciplines prior to College

Foundational Courses

Introduction to Engineering Design

- Engineering Design Process
- Apply math, science, and engineering to hands-on projects.
- Work both individually and in teams to design solutions to a variety of problems using 3D modeling software, and use an engineering notebook to document their work.

Principles Of Engineering

- Engage and challenge
- Engineering- mechanisms, the strength of structures and materials
- Students develop skills in problem solving, research, and design Learn strategies for design process documentation
- Collaboration, and presentation

Special Courses

- **Civil Engineering and Architecture**
- **Computer Integrated Manufacturing**
- **Digital Electronics**

Biomedical Engineering

Principles of Biomedical Sciences

- Overview of the human body and engineering as it pertains
- Broad topics to provide students with an image of what is to come

Human Body Systems

- Anatomy & Physiology
- Focus is on specific systems; structures and functions

Medical Interventions

- Topics cover interventions that may occur when body systems are out of homeostasis

Biomedical Innovations* Capstone

- Students apply knowledge from prior three courses to various real live issues

Capstone Courses

Engineering Design and Development

- The knowledge and skills students acquire throughout PLTW Engineering come together in EDD as they identify an issue and then research, design, and test a solution, ultimately presenting their solution to a panel of engineers
- Completing EDD, students are empowered to take on any post-secondary program or career

Capstone Courses

Biomedical Sciences

- Students apply their knowledge and skills acquire throughout the first three courses of Biomedical Sciences in **Biomedical Innovations**
- Students will complete an individual project utilizing the skills learned, ultimately presenting their project to a panel of medical professionals.

Course Assessment

- **Decision Making using Valid and Reliable Scores**
- **End of Course assessments are available for all of the PLTW Engineering courses except the capstone courses, Engineering Design and Development (EDD.) and Biomedical Innovations (BI)**
- **EDD, uses a portfolio assessment hosted through the Innovation Portal.**

College Credit

- Maintain a 85% GPA throughout the semester in the course
- Maintain a Portfolio Binder and/or Engineering Notebook
- Successfully Pass the PLTW Final Exam Assessment
- Apply* for credit with affiliate partners
  - Application fee and other criteria TBD by individual partners.

College Credit

Visit the PLTW Website for specific listing of all participating College's and Universities

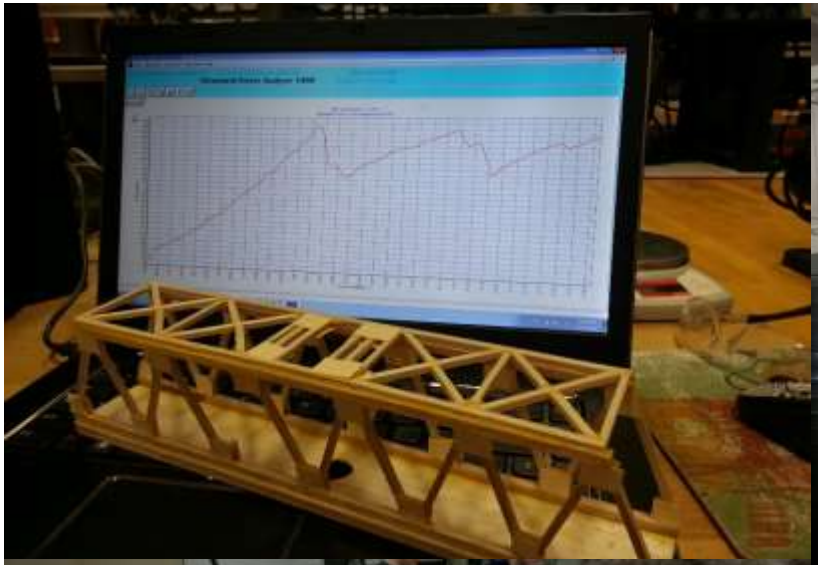
University Partners

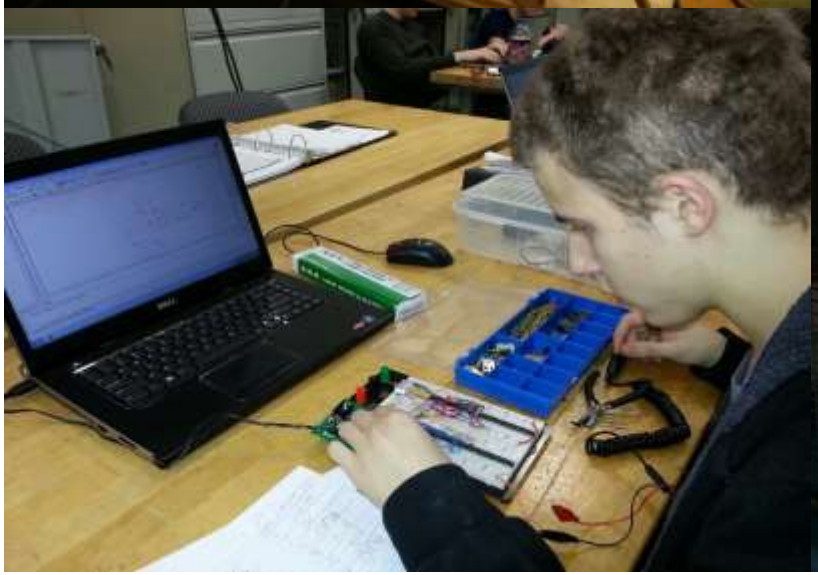
- https://www.pltw.org/university-partners
- http://lakeview.kusd.edu/

M.S.O.E. University Partner

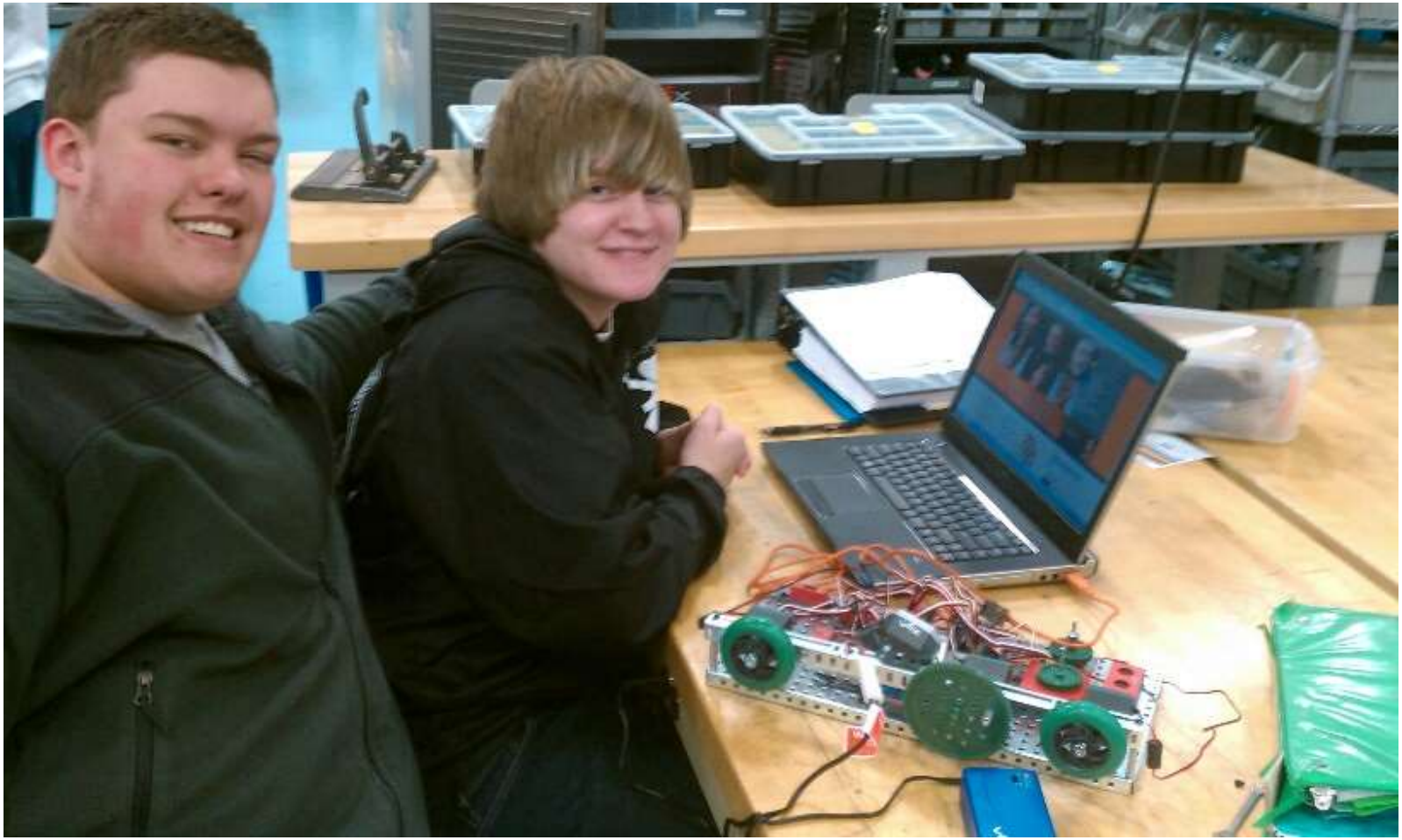
- Patricia J. Deibert | *Associate Director – Wisconsin* | *PLTW Biomedical Science and PLTW Launch* | www.pltwwi.org
- Milwaukee School of Engineering | 1025 North Broadway | Milwaukee, WI 53202
- 414-277-7214 – office | 414-581-4453 – mobile | deibertp@msoe.edu

PLTW Lab Activities





Principles of Engineering



Group Presentations

Some Activities

Urine analysis

Dissecting

- Heart Rate
- Blood Pressure
- EKG

Summary

The purpose of the presentation was to review and cover a basic overview of the PLTW courses:

- Foundational
- Special
- Capstone
- PLTW Assessment

College Credit https://www.pltw.org/university-partners

QUESTIONS concerning the PLTW Curriculum?

On the Web Visit: www.pltw.org