

Hobart High School Pilots Cutting Edge Biomedical Science Program for Project Lead the Way



Biomedical Sciences Boom

PLTW makes first-ever foray into hot career field



Course Description for Principles of the Biomedical Sciences

This course provides an introduction to the biomedical sciences through exciting "hands-on" projects and problems. Student work involves the study of human medicine, research processes and an introduction to bio-informatics. Students investigate the human body systems and various health conditions including heart disease, diabetes, sickle-cell disease, hypercholesterolemia, and infectious diseases. A theme through the course is to determine the factors that led to the death of a fictional person. After determining the factors responsible for the death, the students investigate lifestyle choices and medical treatments that might have prolonged the person's life. Key biological concepts including: homeostasis, metabolism, inheritance of traits, feedback systems, and defense against disease are embedded in the curriculum.

Engineering principles including: the design process, feedback loops, fluid dynamics, and the relationship of structure to function are incorporated in the curriculum.

In response to a growing need, Project Lead The Way is expanding beyond engineering into a new field for the program: Biomedical Sciences. "This is the start of a new era for PLTW," says Richard Blais, PLTW Vice-President. "We will bring the same excellent curriculum and professional development to Biomedical Sciences as we have to pre-engineering." The program will initially consist of four courses: Introduction to Biomedical Sciences, Human Body Systems, Medical Interventions, and Scientific Research. PLTW is piloting the new program in schools during the 2007–2008 school year.

Hobart High School was chosen as one of only sixteen schools in the state of Indiana to pilot the PLTW BioMed. The school district received a \$25,000 grant awarded by the Indiana Department of Workforce Development to begin offering Biomedical Sciences programs to better prepare students for careers in the Life Sciences field. The principal goal of the grant is to help students become interested and engaged in biomedicine in high school while fully preparing them for entry into postsecondary education. Hobart High School teacher, Heidi Krouse, trained all summer to begin the first sequence course Introduction to Biomedical Sciences. She has 53 students in two different sections of the course who anxiously signed up to begin exploring the latest in biomedicine. Students will investigate the human body systems and various health conditions including heart disease, diabetes, sickle-cell disease, hypercholesterolemia, and infectious diseases. Students will be eligible for college credit on successful completion of the final exam at the end of the course.

The Biomedical Sciences program is PLTW's response to an impending shortage of science and health professionals in the United States and the lack of high school programs that prepare students for the rigors of biomedical studies in college. Biomedical Sciences is a booming field, employing more than 12 million people in a wide range of occupations in the United States. Preparing for these careers requires a broad foundation in science, mathematics, language arts, and social studies. In addition, increasingly more specialized knowledge is essential in such areas as microbiology, physiology, public health, and a variety of legal and ethical subjects. PLTW's rigorous, hands-on, activity/project/problem-based learning provides the kind of experiences students need to succeed in the Biomedical Sciences field.



*HHS PLTW BioMed students research the brain.
Tim O'Brien, Christie Bigbie, and Shelby Rearick*



*HHS PLTW BioMed students document findings.
Amanda Gregoria, Kyle Reid, and Tiffanie Anderson*

Mary Jo Fisher from St. Mary Medical Center in Hobart serves on the Partnership Team of PLTW BioMed to provide additional resources to the students and teacher. The hospital will provide an opportunity for exploration and real life application of the sciences.