

Life Sciences Pipeline Initiative
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Pittsburg Technology Council
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State-funded Workforce Leadership grants have supported the efforts of Catalyst Connection, the Pittsburgh Technology Council and partners to create and further expand the Southwestern Pennsylvania Life Sciences Workforce Pipeline 2+2+2 program since the program's inception in January 2003. Through the Pennsylvania Department of Community and Economic Development (DCED) Workforce Leadership funding, Catalyst Connection and the Pittsburgh Technology Council have been able to form and lead a regional coalition of biotechnology industry stakeholders and educational institutions to develop a workforce pipeline in the life sciences.

The Southwestern Pennsylvania Life Sciences Pipeline Partnership has grown to include the Community College of Allegheny County (CCAC), Duquesne University, McKeesport Area School District, Pittsburgh Life Sciences Greenhouse (PLSG), Pittsburgh Public Schools and the Pittsburgh Tissue Engineering Initiative (PTEI). California University of Pennsylvania (CUP), Clarion University of Pennsylvania and various life sciences industry representatives also participate in guiding the program

The goal of the 2+2+2 program is to provide students in the region with applied biotechnology skills through streamlined curriculum that spans high school, two-year community college and four-year degree programs. Junior and senior students at Perry Traditional Academy and McKeesport Area School District have the opportunity to enter the first segment of the program in high school followed by two years of study at CCAC and subsequently complete their final two years of training at Duquesne University. Successful implementation of the pipeline and student completion of the program results in well-trained and developed employee candidates to feed into the region's growing life sciences workforce. Now in its third year, the Southwestern Pennsylvania program has expanded to include additional secondary biotechnology classes and experiential learning opportunities for secondary students in the region. The program now boasts 54 high school students participating from the two high schools and the program has provided a larger group of other students with project-based learning experiences. Numerous students at CCAC and Duquesne University are also enrolled in existing biotechnology educational programs. In addition to classroom learning, students enrolled at the high school level are gaining experience with biology-based laboratory skills in micro and molecular biology, forensics, genomics, proteomics and cell biology. Expanded laboratory programs provide students with knowledge of methodologies from PCR (polymerase chain reaction) and electrophoresis to microscopy and numerous other essential biotechnology techniques. Through company tours, industry-led lectures and programs such as Adventures in Biotechnology, students also receive access to local life sciences companies.

Program goals for 2007 include an increase in recruiting and participation rates at partner high schools, broadening available learning experiences to reach seventh and eighth graders and exposing them to the field of biotechnology, execution of two additional post-secondary articulation agreements, successful completion of the Adventures in Biotechnology programs at the partner high schools, six summer internships and multiple industry based learning experiences.

A Biotechnician Career Ladder

High-School Graduate: Program focus/occupational title: Laboratory Assistant

Support Lab Operations

Maintain stocks of supplies and reagents.

Highly structured, routine laboratory tasks in support of lab activities.

Educational Goals: Career awareness and interest, Motivate ongoing education, Hand-on lab experience,

Develop math and communications skills, and Develop core science literacy.

Associate Degree: Program focus/ occupational title: Laboratory Technician

Perform Standardized Lab Tasks & Assays

Preparing, processing, and analyzing samples.

Using, maintaining and calibrating laboratory instrumentation.
Education Goals: Enable entry-level employment,
Develop strong, industry-focused work habits, and Develop technical skills.

Baccalaureate Degree: Program focus/occupational title: Research Scientist

Plan and Conduct Experiments

Design, conduct, and troubleshoot experiments.

Interpret data, draw conclusions.

Prepare reports for internal dissemination.

Education Goals: Enable entry-level employment, Prepare students for graduate education, Develop independent scientific analysis skills and Involve each student in an internship experience.

For more information on the 2+2+2 program, contact Life Sciences Network Director Jennifer Rick at (412) 918-4206 or jrick@pghtech.org.