

# Life Science Technical Training in Southern Indiana

## Project Summary

Ivy Tech Community College-Bloomington is the primary provider of technical training in Monroe County and the surrounding region in southern Indiana. This region is experiencing a significant influx of biomanufacturing industries, broadly grouped into pharmaceutical producers and medical device manufacturers. The region is also experiencing rapid, and nearly complete loss of traditional manufacturing plants. There is, therefore, a great need for skilled technicians for the Life Sciences industry, but a mis-matched pool of potential employees. This pool is comprised of displaced workers with inappropriate skill sets for biomanufacturing jobs, and recent high school graduates, for both of whom appropriate training must be developed at Ivy Tech.

This program is primarily a collaboration between Ivy Tech Bloomington and regional Life Sciences employers, aimed at developing and providing this training. The program consists of creating clusters of courses that provide Certificates, that can be taken prior to, or concurrently with employment. The collaboration ensures that these courses are ideally designed to meet the specific needs of industry. In an expanded collaboration with the Northeastern Biomanufacturing Collaborative Center at New Hampshire Community Technical College, we will develop a capstone educational experience in the form of a Pilot Plant that will give trainees experience in real-time production, and simultaneously provide industrial partners with modest-scale quantities of materials for development and testing.

The collaboration will also be expanded to include Indiana University and Owen Valley High School in order to increase the flow of Life Science employees into regional industry. This is essential to the viability of the industry, which is becoming the economic base in southern Indiana. Work with IU will include the use of industrial examples and problems in introductory courses, and the lowering of barriers to enrollment of IU students in technical courses at Ivy Tech. Work with Owen Valley High School will involve professional development with teachers to infuse classrooms with biotechnology, industrial examples, and problem-based learning, in an effort to fill gaps in student learning that have been identified by Life Sciences employers.

## Intellectual Merit

This proposal combines strategies from a number of different venues to create a unique technical training pathway that is accessible to employees at many levels. At one extreme, baccalaureate-level graduates can obtain additional technical skills to augment their more-theoretical college programs. At the opposite extreme, displaced employees of mature age can obtain entry-level skills that can get them back into the workforce. The program also creates an entry to this training pathway from high school. The training program culminates in production-line experience that closely reflects industry standards, reducing employers' expenses for on-the-job training. Together, these aspects of the program reflect a striking intellectual vision.

## Broader Impacts

Each aspect of this program will be broadly replicable. Assessments will be thorough and frequent, enabling dissemination of detailed descriptions of "what works" and what is necessary to ensure that it works. As Advanced Technology industries expand, nearly every

region nationwide faces the need to "grow your own" employees; hence, replicability of successful strategies is essential. The fruits of industrial collaboration and the Pilot Plant promise to have the greatest impact on technical training at other institutions. There is also considerable potential in the project with Owen Valley High School; it can provide a paradigm that can impact high school teaching, particularly in biotechnology, as well as general school reform, nationwide.



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