Providing the Workforce for the Bio-Industries

**The Need:** Bio-industries are booming in North Carolina, and along with that explosive growth comes a need for skilled workers. The statistics add up: There are 20,000 North Carolinians working as biotechnologists in the pharmaceutical and biopharmaceutical industries, and more than 2,500 new employees may be required annually, according to the North Carolina Biotechnology Center. According to Ernst & Young, the state has the third largest biotechnology industry in the U.S.

**Serving the Need:** The College of Agriculture and Life Sciences continues to develop innovative courses and degree programs that are producing the next generation of scientists for emerging bio-industries.

For example, the new Bachelor of Science degree in Bioprocessing Science offered by the Department of Food Science prepares students for careers in bio-industries through formal training in the fundamental sciences as well as hands-on lab experience. The first class of students enrolled in spring 2007.

The new degree program will produce graduates trained in basic sciences such as chemistry, engineering, microbiology and biotechnology. They’ll also learn good manufacturing practices and standard operating procedures through lab experience at the Golden LEAF North Carolina Biomanufacturing Training and Education Center (BTEC) on N.C. State’s Centennial Campus. These state-of-the-art labs simulate those in biomanufacturing companies, giving students real-world work experiences.

On the docket at BTEC is a full slate of courses proposed to launch in 2008, after construction of the facility is complete. These offerings include microbiology courses to be taught by College of Agriculture and Life Sciences faculty.

Also, in an effort to reshape freshman biology education, the College recently launched a hybrid Introductory Biology course that divides instruction between at-home Web learning and classroom time. Breaking the mold of the standard freshman “intro” course, hybrid BIO 181 is taught in small, 30-student sections in which hands-on group activity replaces traditional classroom lecture. Students receive lessons through an interactive Web site and apply that knowledge in guided classroom exercises.

**Impact beyond North Carolina:** By creating innovative courses and degree programs that are relevant and responsive to a changing global economy, the College is generating a highly skilled workforce ready to contribute to new and developing industries.

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