Recommendation

That the KCTCS Board of Regents approve an Associate in Applied Science (AAS) in Biotechnology for Owensboro Community and Technical College to be implemented in fall 2004.

Rationale

- The proposed Biotechnology degree is consistent with the mission of KCTCS and Owensboro Community and Technical College. The proposed degree program provides the additional preparation and skill needed to meet the current and future demands of this economically vital, growing industry.

- This proposal is in direct response to the request of a local biotechnology company and community leaders. Daviess County is the home of the Large Scale Biology, Inc. (LSBC), a biotechnology processing firm that has become an integral part of the local economy. As the company transitions from research to production, the need for a better-trained and educated workforce is becoming increasingly acute.

- The Owensboro area is one of the largest tobacco producing areas in the state; but due to changing economic conditions, tobacco production is becoming less lucrative for area farmers. Because of the expertise of the Owensboro area in raising tobacco, the community has become a center for biotechnology companies desiring to utilize the plant in the bio-manufacturing process.

- The proposed 62-66 credit hour degree program is based on approved KCTCS curricula.

- Through collaboration with local biotechnology firms in resource sharing of equipment, instruction, and grant monies, no additional funding will be required for implementation.

According to the 1997-2002 Kentucky Plan for Equal Opportunities in Postsecondary Education, Owensboro Community and Technical College has automatic eligibility.

See the attached executive summary of the proposal for additional information. A copy of the full proposal has been forwarded to each member of the Board’s Academic Affairs and Curriculum Committee.
EXECUTIVE SUMMARY

Associate in Applied Science in Biotechnology

Owensboro Community and Technical College

A Proposal for Initiation of a New Degree Program

Mission, Influence, Organization

The proposed Associate in Applied Science degree in Biotechnology is fully consistent with the mission of the Kentucky Community and Technical College System and its member colleges. That mission is “to improve the quality of life and employability of the citizens of the Commonwealth” by providing a broad array of educational programs, training, and services. Among those services are the following:

- Certificate, diploma, technical degree, associate degree, and transfer programs
- Workforce training to meet the needs of existing and new businesses and industries

The proposed program addresses both of the above components of the mission statement, and it responds directly to a growing local need for individuals who are qualified for employment in the biotechnology field.

Program Description

The AAS in Biotechnology provides students with the necessary skills and knowledge for entry into a biotechnology career. The biotechnology curriculum will cover topics such as biology, chemistry, crop production, molecular genetics, biotechnology trends, and quality management, as well as courses in communication, computers, and mathematics. Graduates will be well versed in the theories and principles of biological systems, field and laboratory techniques, and good manufacturing principles of the biotechnology industry.

This 62-66 credit hour program prepares the student with a range of skills and knowledge useful for a range of jobs in bio-manufacturing (including production, and quality control, and compliance). The biotechnology industry provides a wide array of job opportunities, including bio-manufacturing and laboratory technicians, quality assurance technicians, and regulatory personnel.
**Supportive Data**

The request of local industry leaders for trained biotechnology workers has been the driving force for this proposal. The two organizations leading this effort are Large Scale Biology, Inc. and the Owensboro Biotechnology Alliance.

The Owensboro area is one of the largest tobacco producing areas in the second largest tobacco producing state in the United States. Due to changing economic conditions, tobacco production is becoming less lucrative for area farmers. In response, Kentucky has instituted various programs to transition tobacco producers to other crops. The development of bio-techniques aimed at using the tobacco plant as a factory for manufacturing pharmaceuticals has offered a new incentive for producing the crop. Due to the expertise of the Owensboro area in raising tobacco, the community has become a center for biotechnology companies desiring to utilize the plant in the bio-manufacturing process.

The Owensboro area has made a concerted effort to become the biotechnology center of Kentucky. An Owensboro Biotechnology Alliance (OBA) was formed to build the infrastructure necessary to grow the current industry and attract new biotechnology companies. Through New Economy grants, the OBA has initiated projects that will validate the region’s expertise in the field of biotechnology. The Owensboro Biotechnology Alliance has as one of its primary objectives the development of an educated biotechnology workforce. The OBA has already provided Owensboro Community and Technical College with grant monies to initiate programs to educate and train biotechnology workers.

Finally, Owensboro Community and Technical College has secured funding from the Kentucky Agriculture Development Board and the Owensboro Biotechnology Alliance to build a campus greenhouse that will serve as an educational facility for educating students and local agriculture producers about alternative agricultural cropping systems. This facility will be used to train biotechnology technicians and to validate procedures for the handling and processing of transgenic plants for the biotechnology industry. The two priorities of both the local biotechnology industry and Owensboro Biotechnology Alliance are to demonstrate the region’s ability to manage biotechnology cropping systems and to train a highly motivated and skilled workforce. The establishment of the AAS in Biotechnology at Owensboro Community and Technical College will directly meet the demands of the later objective.

**Resources**

Through collaboration with local industry, Owensboro Community and Technical College has adequate classroom, library, equipment resources, and qualified personnel to meet the needs of the program. No additional funding is required to implement this program.

**Conclusion**

The proposed degree program is consistent with the mission of KCTCS and Owensboro Community and Technical College. The proposed AAS in Biotechnology degree program will be the first of its kind in the Commonwealth and is designed to address the specific workforce need of the biotechnology industry in and around the Owensboro area.