Section 1. Goals and Accomplishments

**Goal 1:** Access and Diversity: The Center will assist faculty to recruit, retain, and graduate a larger, more academically prepared, and diverse graduate and undergraduate student body for training in Biotechnology and Genomics-related fields.

- The technical training mission of the Center continues to be a major benefit to Texas Tech University. The technical staff members are directly involved in training both undergraduate and graduate students in areas related to protein chemistry and molecular genetics. As a result, students, both from Texas Tech University and the T.T.U. Health Sciences Center, are better prepared for graduate training and professional schools and for responsible scientific positions in academia and the private sector.
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- The Center continues to be a major asset for recruitment of prospective faculty members in the biological sciences (both at Texas Tech University and the T.T.U. Health Sciences Center). Prospective hires are sent descriptions of the Center’s activities and of services available through the Core Facility. Prof. David B. Knaff, the Center’s Director, and senior members of the Center’s technical staff visit with these candidates and provide tours of the Core Facilities. These activities have contributed significantly to making Texas Tech an attractive job option for prospective faculty members. Particular attention has been focused on making Texas Tech more competitive as a place for as a place for women and minority. Tours have been provided for prospective faculty candidates from nine different departments and for invited guest speakers including those asked to speak the Phi Beta Kappa and Harrigan Distinguished Lecture Series.
- Prof. Knaff continues to visit schools in the region to recruit students and has stressed our interest in attracting women applicants and applicants from historically under-represented groups. The Center Director and technical staff members have given numerous presentations for local high school and junior high school groups, with an emphasis on making education and careers in science attractive options for female students and students from historically underrepresented groups. The summer introductory lab workshops run by the Center’s staff for Howard Hughes Medical Institute undergraduate research students also provides an opportunity for recruiting students to TTU graduate programs.
- The Center's Biotechnology M.S. program continues to be an excellent source for in technical training. All members of the class that entered in the fall of 2007 have successfully completed their degrees or will do so this August or have transferred into other TTU or TTUHSC programs. A student who graduated in May, 2009 has accepted a permanent staff position at Receptor Logic, Inc. in Abilene, TX. A second graduate had been offered a permanent position with Bayer Crop Sciences in Lubbock, pending the revocation of a company-wide hiring freeze. Two graduates have been accepted into Ph.D. programs, one in Pharmacology at the University of Southern Illinois and one in Physiology and Cellular Biophysics at TTUHSC. Success in placing second-year students in internships or research assistantships and the success of our graduates in gaining admission to Ph.D. programs or securing private-sector positions indicate that the program has developed a national reputation for excellence.
- The enrollment in the Biotech MS program increased dramatically from 6 in 2006 to 15 in 2007 and then to 18 in 2008. This increase occurred despite the fact that the program does not provide financial support for students during their first year and is an indication of the growing international reputation of the program.
- Two students graduated from the MS/JD program, jointly administered by the Center and the School of Law, one in December, 2008 and one in May, 2009. One of these students is currently interviewing for a position as a university technology transfer officer and the other has had two job offers from law firms in Houston that are heavily involved in intellectual property law. This MS/JD program is one of the very few of its type in the nation and it has helped Texas Tech establish a regional reputation for innovation in biotechnology education.
- One Ph.D. level scientists in the Center for Biotechnology and Genomics Core Facility were granted Adjunct Faculty status in the Department of Biological Sciences, bringing the total to three staff members who have received such appointments. All three have also been granted Graduate Faculty status. This honor underscores the important role that these personnel play in enhancing the research capabilities and productivity of the faculty. Our staff members collaborate directly with students and faculty from more than10 research programs at Texas Tech University (TTU) and the Texas Tech University Health Sciences Center (TTUHSC). In several cases, research carried out in collaboration with Core Facility personnel has been critical for the development of publications and grant proposals and our personnel have been PI’s or co-PIs on several grant proposals during 2008/09.
Goal 3: Engagement: The Center for Biotechnology and Genomics will provide technical resources to the West Texas community to build community and regional connections that enhance the quality of education and life.

- The Core facilities operated by the Center continue to provide outstanding technical resources for approximately 50 research groups at academic institutions, government laboratories and private companies throughout the region. DNA sequencing projects from laboratories at TTU, TTUHSC, TTTUHSC-Amarillo, Texas Agricultural Experiment Station and the USDA-ARS laboratory are now underway. Affiliation with the Center continues to be cited by TTU and TTUHSC faculty in their publications in refereed journals, helping to enhance the reputation of the Center as an important contributor to research at TTU. Requests for Core Facility services are also routinely received from universities and private companies located throughout the U.S.
- The Center has added a second section, during the Spring Semester of its introductory lab course, BTEC 5338, to provide advanced classes for students in the Department of Biological Sciences, the Department of Chemistry and Biochemistry, the Department of Plant and Soil Science, the Department of Animal and Food Sciences, the Department of Natural Resources Management and the Institute for Environmental and Human Health and the School of Law (where we co-administer a joint degree program for students interested in intellectual property law). We have completed training the first cohort of M.S. students in the Forensic Sciences program and have taken over full responsibility for an advanced lab course from the Interdisciplinary Studies, as well as a course in transgenic technologies in plants from the Department of Plant & Soil Science. The Biotechnology M.S. program remains the only TTU/TTUHSC jointly-administered graduate degree program.
- The Center provides funds to send staff members to meetings and workshops and for advanced training in instrumental techniques so that they can upgrade their skills and be intellectually stimulated. Flexible scheduling has been devised so that the M.S.-level member of the staff can pursue her Ph.D. studies at Texas Tech while working on a full-time basis.
- The Center has increased its staffing level in order to meet its increasing responsibilities in the graduate teaching arena and in providing new types of research infrastructure support in the area of mass spectrometry. The Center now employs, on a full-time basis, three Ph.D.-level and one M.S.-level research scientists and a B.S.-level technician. In addition, a fourth Ph.D.-level scientist is employed on a one third time basis. However, this has only been possible, given an essentially constant salary budget, by eliminating a much-needed administrative assistant's position and eliminating the position of a faculty co-director.
- The teaching laboratory in the Center for Biotechnology and Genomics has been used extensively for laboratory courses in both the Departments of Biological Sciences and Plant & Soil Sciences and will be the site of a newly updated technical course called Techniques in Biotechnology (BTEC5338). An additional course in biotechnology instrumentation was developed and will be taught by Center personnel as a variable credit course during the Spring semester. This laboratory is also used for laboratory classes in Plant and Soil Sciences and the Imaging Center in the Department of Biological Sciences.
• The accomplishments of the Center, described under Goals 1 through 6, and 8, are communicated to Center members through regular e-mails from the Director and on the Center's website so that a sense of pride in accomplishments of faculty members affiliated with the Center is fostered.

Goal 8: Financial Stability: Center members will submit proposals each year for new funding and enhance chances for continued funding by achieving the research goals. The Center will enhance its graduate programs, providing a steady flow of formula funding and student fees and increase the efficiency of its core facilities so that user fees will cover an increased portion of operating costs.

• Tuition and fees from Biotechnology M.S. students have increased substantially with the increased in enrollment. In addition, the Center has begun offering graduate courses for M.S. students in Forensic Sciences and for Ph.D. students in a variety of graduate programs. The Center has also added a new advanced laboratory course (BTEC 5340) that generates tuition and student credit hour revenues.

• The Center Core Facility brought in approximately $45,000 in user fees. These revenues covered all of the costs of consumable supplies, a portion of the costs of service contracts for major equipment in the Core Facilities, and for software and other upgrades.

• Cooperative agreements with academic departments at both Texas Tech and at the T.T.U. Health Sciences Center) and with a U.S. government laboratory, continue to provide Center-affiliated research groups access to new technology without any capital investment costs to Texas Tech University. The Health Sciences center continues to pay a substantial portion of the salaries of one of the Center's technical staff and contributes $5,000 towards the cost of service contracts for instruments in the Core Facility.

Goal 9: Accountability: The Center will establish a series of benchmarks for its externally funded research programs, its graduate education programs, its community outreach programs and its Core facilities.

• The Center has established a benchmark of entering classes of at least 15 students per year in its M.S. program by the 2008/09 Academic Year. In fact, this benchmark was achieved in 2007/08 and exceeded in the current year. The focus will now shift to increasing the quality of the M.S. students accepted, to increase the Center’s ability to provide laboratory training to graduate students in other M.S. and Ph.D. programs and to constantly modernize and upgrade our advanced laboratory courses. The previous benchmark of 5 students in the joint M.S./J.D. program has proven to be unrealistic and has been revised to a level of 2 students.

• The Center had established a benchmark of $70,000 in annual Core Facility revenues by FY09. However, the great expansion of the Center staff members’ teaching and advising responsibilities has made this level of research infrastructure support unrealistic. A new benchmark of sustainable revenues of at least $45,000 has been set and has been achieved during each of the last two years. Any increase in this amount will require additional staffing and instrumentation.

• The Center has established a goal of participating, as a major sponsor, in at least one successful multi-disciplinary grant and at least four research grants each year, by FY09. During the current year the Center exceeded the first goal, having participated in three major instrumentation proposals but fell short of the second goal, having participated in only two. Efforts to involve more faculty members in Center-originated research proposals will be made in future years to address this shortfall.
Section 2. Universal Quantitative Data

There are no Universal Quantitative Data for this area/unit.
### Center for Biotechnology and Genomics

#### Area/Unit Specific Information

**Section 3a. Quantitative Information**

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Section 3b. Qualitative Information.

There is no qualitative information for the current year.
Commentary:

There is no commentary for the current year.

Implementation Plan:

There is no implementation plan for the current year.