DEPARTMENT OF BIOLOGICAL SCIENCES STRATEGIC PLAN
(UPDATED May 2012)

MISSION STATEMENT

The Department of Biological Sciences embraces and integrates all aspects of the life sciences and related teaching, research, and educational outreach, develops and delivers an effective, modern curriculum for graduate and undergraduate majors in Biological Sciences and non-majors, contributes to knowledge and technology development through faculty and student research, and establishes a departmental environment grounded in open and honest communication, mutual support, recognition of diverse individual contributions, and trust.

VISION STATEMENT

From a platform of innovative and effective approaches that integrate undergraduate and graduate education with multi-disciplinary research, the Department of Biological Sciences strives to achieve national and international leadership in research, scholarship, and education in all academic levels and provide campus-wide leadership in the integration of life sciences.

STRATEGIC PLANNING GOALS AND OBJECTIVES

Goal 1.Increase Enrollment and Promote Student Success in Biological Sciences

- Increase the number of undergraduate majors in the Department.
- Continue to mentor and teach undergraduates who become very competitive for university and national scholarships.
- Maintain and promote well-rounded graduate and undergraduate programs focusing efforts in Animal Physiology/Biomedical Sciences, Ecology, Evolutionary Biology, Microbiology, Quantitative Biology/Comparative Genomics, and Plant Biology and Biotechnology.
- Increase the number of graduate students, especially at the Ph.D. level.
- Develop and maintain programs and resources that promote quality graduate education at a national level.

Goal 2.Strengthen academic quality and reputation of the Department

- Increase support for graduate student participation at meetings with travel support.
- Increase the number of graduate students who receive competitive scholarships and awards.
- Develop ability to provide a one semester departmental RA for all PhD students admitted to candidacy. The RA will help increase PhD recruitment and increase manuscript and proposal development.
- Encourage collaborations among faculty in the Department, across campus, with other universities in state, region and globally.

- Make additional senior hires that will enhance our national reputation, and provide leadership in applying for and being awarded grants
- Continue to support all faculty in their teaching, research, and service.
- Continue and enhance a newly developed program that will help Teaching Assistants learn to "teach" more effectively

Goal 3.Expand and enhance Research and Creative Scholarship in Biological Sciences

- Continue to foster a Departmental ethic that encourages collaborations among faculty in the Department, across campus and globally.
- Use RCM-generated funds to support the development of "Bridging Grant" competition on campus to help maintain and enhance faculty productivity.
- Develop state of the art laboratory facilities for each core research area
- Make additional senior hires that will enhance our national reputation, and provide leadership in applying for and being awarded grants

.

Goal 4.Further Outreach and Engagement

- Continue to actively participate in programs that send the message about 'what we do' in Biological Sciences to students in the K-12 community, taking advantage of events such as Science Days and as judges in Science Fairs
- Interact with the public and government on those issues where our scientific expertise can address key local, regional and national issues.
- Continue to support an alumni affairs person within the Department to better maintain contact with our alumni.

Goal 5. Increase and maximize resources

- Encourage faculty to consider developing Infrastructure Improvement Grants
- Continue to develop funds to support new staff positions that help with teaching lab prep and coordination to better accommodate enrollments in laboratory classes.
- Continue to develop our Teaching Post-Doc Fellows Programs to help met teaching needs while increasing research opportunities.
- Continue to develop our assessment mechanisms for our undergraduate and graduate programs.
- Continue to contact and develop relationships with donors, including alumni with the ability enhance our scholarship and endowed chair funding base

Strategic Plan Update Commentary (June 2012)

We continue to foster the development of effective learning skills in our undergraduates making them competitive in obtaining scholarships, awards, and acceptance into professional schools. This success can be attributed to the dedication of our faculty in promoting a culture of teaching excellence in our department that is coupled with nationally and internationally recognized research efforts. Our undergraduates have excellent opportunities to learn from our faculty in the classroom and in the laboratory. The "Department Excellence in Teaching Award" attests to the

efforts of our faculty in providing a solid curriculum. The number of Biology majors has increased over 20% during the past five years, our number of graduating seniors continues to increase while maintaining a good average GPA (3.33) as well as being able to complete their degree is 4 to 4.6 years.

Our graduate program continues to grow (especially the number of Ph.D. students) and develop as our new faculty begin to recruit graduate students. The success of our PhD and MS students after graduation attests to the efforts made by our faculty to promote their academic development. All of our PhD students have been successful in obtaining post-doctoral positions, faculty appointments, and jobs in industry and government labs after graduation. Moreover, we continue to see an increase in the number of graduate students who have received ARCS scholarships, EPA Star grants, and awards for talks at meetings.

Our faculty are concerned with the continuing decline in the amount of extramural funding received by the Department. Even our senior hires are having difficulties leveraging funds, although several of our younger faculty are having some success. The loss of funding is attributable to the loss of ARP and ATP, the decline in funding rates at the federal level and the loss of senior faculty. Through our recent faculty hires, we have begin to see increased funding. Faculty continue to submit more proposals for scarce funding while developing collaborations nationally and internationally to increase success rates. The percentage of faculty that have submitted grant proposals over the past 3 years is at the top of the College.

Our teaching Post-Doctoral program continues to draw national interest. This program has the opportunity place our Department in the forefront of initiatives in this area. Moreover, the program provides increased opportunities for curriculum flexibility while encouraging research opportunities. The success of Teaching Post Docs in acquiring positions is extremely good.

In response to our undergraduate and graduate program assessments in subcommittee has developed plans for revising our degree programs in Zoology, renaming it Ecology, Evolutionary and Organismal Biology. The low producing Ph.D. in Zoology, will be closely examined, perhaps leading to an elimination of that degree with a concommitant restructuring of a Ph.D. degree in Biology with an emphasis in either Ecology, Evolutionary Biology, Microbiology, Molecular Biology, Plant Biology or Organismal Biology.

The opening of the Experimental Sciences Building in 2006 has provided unique opportunities for our faculty and graduate students to expand research opportunities. Even with the relocation of several faculty back to the Biology building, we still have six faculty in the building.

We continue to develop and refine our Graduating Senior Survey as one of our assessment tools for our undergraduates. Student performance on PhD candidacy exams and MS thesis defenses is also continuing to be assessed for our graduate efforts. Importantly, the number of graduate publications and attendance at meetings is an important metric of our graduate student success and is increasing due to support from the Department and Graduate School. We will continue to use this information in the coming years.

Implementation Plan (August 2012):

Encouraging faculty development, promoting undergraduate student learning and research efforts through mentoring, and mentoring for success at the graduate levels require a multifaceted approach that focuses on: 1) faculty engagement in teaching and research, 2) effective mentoring of graduate students in the class and laboratories, and 3) improvement of existing infrastructure in the classrooms, in graduate office space, and in the teaching and research laboratories. While senior surveys or standardized tests can provide some measure of a the success of our degree programs, the real measure of program effectiveness is the ability of our students to be competitive in securing scholarships, in publishing papers, presenting talks at meetings, receiving awards for their presentations, being accepted into graduate and professional school, and obtaining employment. For us, these metrics are the ultimate measure of our success and some of them take years to accurately assess. We will continue to design tools for collecting this information. Importantly, to ensure that our undergraduate and graduate programs continue to develop and improve we will: 1) continue to invest in faculty efforts that promote teaching and research opportunities, 2) invest in graduate (and where appropriate and possible undergraduate) student travel to present their findings at meetings, 3) invest in research collaboration development by bringing in seminar speakers, 4) foster the development of infrastructure improvement grants by faculty, 5) encourage undergraduate student research efforts within the department through the TTU-HHMI Program, the Center for Undergraduate Research and the Honors College, 6) foster participation of faculty and staff in outreach and engagement programs, and 7) provide opportunities for faculty to explore new approaches to teaching and research. All of the above are dependent upon an infrastructure that can support the continued growth of our teaching, research, and service missions.