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Strengthening the Physics Program at Brigham Young University – What Have We Learned?

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During the decade of the 1990s, the Department of Physics and Astronomy at Brigham Young University (BYU) experienced remarkable growth, growing from approximately 200 majors in the first half of the decade to over 300 majors by the end of the decade. Since that time, the number of majors has held fairly steady, fluctuating between 300-350 majors. One can naturally ask, what led to this significant growth? This is a difficult question to answer, as a number of variables are potentially involved, all of which may have had some impact on the outcome. This paper will explore a number of items that have been implemented in the program over this time that may have contributed to establishing a strong physics program that provides an excellent education for our undergraduate majors. Many of these possible contributors can be viewed as an outgrowth of perhaps one major characteristic of the department – a strong and unified commitment to providing excellent undergraduate training in physics. This commitment to undergraduate education has informed many of the decisions that have been made over the past several decades. Several examples that will be discussed include the implementation of the requirement that each student complete a mentored learning experience before graduation, the introduction of several different degrees to better accommodate the range of student interests, and moving the experimental and computational lab courses to earlier in the student's program to allow later courses and research to build upon these skills. As a result of the greatly enhanced process of program assessment that has been put in place at BYU, these various elements are reviewed regularly, which provides feedback and allows us to make modifications as warranted to try and further strengthen the program.