

Meeting: 1003, Atlanta, Georgia, MAA CP O1, MAA Session on Teaching and Assessing Problem Solving

1003-O1-249 **William P Fox*** (wfox@fmarion.edu), Department of Mathematics, Francis Marion University, Florence, SC 29501, and **Richard D West** (rwest@fmarion.edu), Department of Mathematics, Francis Marion University, Florence, SC 29501. *Beginning with a 21st Century View: Mathematical Modeling and Problem Solving with Interdisciplinary Applications in College Algebra.* Preliminary report.

Traditional, skills-based college algebra has been taught at Francis Marion University since before the school's establishment as a four-year institution in 1970. The majority of students performed poorly in these skills only based courses. To our more senior faculty in the department and in the university, high failure rates are not alarming. Through an analysis of data, we attempt to shed light on the fact that these high failure rates make these entry-level courses unsuccessful. To lessen the impact on our student retention, we established a two-course alternative sequence that uses problem solving, real applications and interdisciplinary projects to motivate the college algebra. We integrated real-world problems in the form of projects, applications, and activities to motivate students to better understand the basic principles of algebra. Performance improved and feedback from most of the students was positive. Based on the overall positive experience, these two new freshmen algebra courses have become prerequisites to other mathematics courses instead of just terminal courses. In this talk, we will discuss these problem solving courses, our interdisciplinary projects, our integration of technology, and our assessment strategies. (Received September 03, 2004)