1145-VJ-2977 Douglas B Meade* (meade@math.sc.edu) and Philip B Yasskin. MYMA Calculus: An Active and Interactive Approach to Learning and Doing Calculus.

While many calculus textbooks are now available in an electronic form, most are glorified PDF files. MYMA Calculus is a complete three-semester calculus book whose native format is purely electronic. The only pages are webpages; one dynamically-generated webpage for each theme. While definitions and statements of general rules and theorems are static, many of the accompanying figures involve a combination of active elements, including user control (via sliders) and animation.

The MYMA Calculus project replaces a sequence of figures showing secant lines through two points on the graph of a function approaching the tangent line through a single point on the graph of a single function with an interactive animation of this convergence. Users can control the animation, changing points and specific functions involved. Examples used to demonstrate an idea are not static either - different students see different examples of the same principle. To encourage students to work through the examples, and to develop a sound approach to applying the concepts, the steps in the solution process are presented one at a time.

This presentation showcases the current state of MYMA Calculus, discusses various technologies used, and outlines the remaining tasks to complete the project. (Received September 26, 2018)