

1135-97-2643 **Elizabeth Theta Brown*** (brownet@jmu.edu), Dept. of Mathematics and Statistics, MSC 1911,
800 South Main, Harrisonburg, VA 22807. *Calculus for the 21st century*. Preliminary report.

This talk will report on a redesign of the calculus sequence that seeks to erase the success, persistence, and achievement gaps between students from majority and underrepresented groups using methodologies whose effectiveness has been documented in, eg, the Proceedings of the National Academy of Sciences. The reforms implemented involve both pedagogy and content. Strategies were chosen for their robust vetting in the literature and potential for sustainability in a typical calculus sequence, in which the syllabus is already tight and the individual instructor has limited agency to affect course features, like text, topics, etc. Curricular adjustments include readings, applications, examples, and projects that illuminate calculus' relevance to wide variety of human and social concerns, and framing the subject in an accurate historical context, which helps students understand mathematics as a broadly human endeavor. Pedagogical efforts include value affirmation, problem framing as a way to evade stereotype or identity threat, and student-empowering course management software.

The talk will offer quantitative as well as qualitative measures of the project's efficacy. References and resources will be provided. (Received September 26, 2017)