

1145-G5-2174      **Andrew M. Baxter** (amb69@psu.edu), **Eric Simring**, **Amine Benkiran** and **Andrew Belmonte\*** (Andrew.Belmonte@gmail.com). *Better Calculus through Biology: The Biocalculus Sequence at Penn State University*. Preliminary report.

The first-year biocalculus sequence at Penn State University (University Park) teaches over 600 life-science majors each semester, and is poised for a major expansion to smaller Penn State campuses in the next three years. We have witnessed dramatic improvements in student achievement without compromising mathematical rigor or scalability. Curriculum changes enable meaningful discussions of matrix algebra, Markov chains, and systems of linear differential equations in the first year. Student-centered pedagogical methods build quantitative literacy instead of mere procedure-execution. Through this first-year experience life-science majors, who were often written off as not mathematically-minded, now consider a minor in Mathematics. Furthermore, the success of this sequence has resulted in the development of a third-semester expansion of the sequence as well as a new Mathematical Biology option for math majors at Penn State.

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