

1145-VJ-2852      **Jan Cannizzo\*** (jcannizz@stevens.edu). *Reimagining the Curriculum: Making Radical Changes to Improve Learning in First-Year College Calculus.*

Acting in response to unacceptably high DFW rates in its first-year calculus courses, math faculty at Stevens Institute of Technology embarked upon a multiyear effort to radically change the way they teach calculus. Changes made to the curriculum include:

- Incorporating active learning methods into lectures
- Encouraging team-based problem solving
- Redesigning all course components, including exams, so that they place a focus on conceptual understanding
- Using free educational resources in place of a textbook
- Developing a novel educational software, which has replaced written homework, that allows students to solve calculus problems in a fully free-form manner and receive immediate feedback

In this talk, I will describe this system, which has seen the DFW rate in Stevens calculus courses drop from 35% to 10%, in detail and give practical advice for improving the teaching of calculus. I will also talk about challenges that remain, and offer a vision for the future of calculus education that includes the elimination of high-stakes exams. (Received September 25, 2018)