1139-97-263   **Rebecca Kathryn Vinsonhaler*** (`vinsonhaler@utexas.edu`), 2303 E 17th St, Austin, TX 78702. *Teaching Calculus with Infinitesimals.*

I argue that first semester calculus courses for non-mathematics majors should be taught using infinitesimals. This applies to both high school and undergraduate calculus courses. The use of infinitesimals in calculus, though more intuitive than the approach developed in the 19th Century, has been controversial for over two millennia. However, in the 20th Century their use was shown to be equa-consistent with the approach developed in the 19th Century. I will provide a brief history of infinitesimals, why they were controversial, and how they were finally put on a firm footing. Then I will illustrate the intuitive nature of the use of infinitesimals. I will conclude that at least students not continuing on to more advanced analysis courses would be better served by learning calculus via infinitesimals. (Received February 13, 2018)