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**Thomas C. DeFranco, Hariharan Swaminathan, Nicholas Gorgievski and Charles
Vinsonhaler.** *A Study of Calculus Instructors' Perceptions of Approximation as a Unifying
Thread of the First-Year Calculus.*

This paper discusses findings from a research study designed to investigate calculus instructors' perceptions of approximation as a central concept and possible unifying thread of the first-year calculus. The study also examines the role approximation plays in participants' self-reported instructional practices. A survey was developed and then administered to a stratified random sample of 3,930 mathematicians at higher education institutions throughout the United States. Quantitative and qualitative methods were used to analyze the data gathered. While 89% of participants reported that they do view approximation as important to student understanding of the first-year calculus, significantly fewer are translating that view into an instructional approach that presents approximation as a central concept (51%) or unifying thread (40%). Four primary reasons for this incongruity are discussed. The findings from this research provide a baseline for what is known about the perceptions and teaching practices of calculus instructors regarding the role of approximation in first-year calculus courses. Research-based findings related to the role of approximation ideas in the first-year calculus could have implications for first-year calculus curricula. (Received August 24, 2014)