1023-Q1-758   **Robert Rogers*** (`robert.rogers@fredonia.edu`), Department of Mathematical Sciences, SUNY Fredonia, Fredonia, NY 14063. *Introductory Real Analysis - Let Series be Your Guide.*

Arguably one of the most perplexing issues for students in introductory real analysis courses is why anyone would come up with the non-intuitive definitions for topics such as convergence and continuity which are studied intuitively in calculus. It is the author's contention that students will better understand the definitions and theorems when they are motivated by their historical context. For example, power series became a powerful tool throughout the eighteenth century. After students learn to use and appreciate power series, they can be shown the pitfalls to such an intuitive approach culminating with Fourier series. This leads to the following natural question, "Why do power series seem to be well behaved whereas Fourier series are not?" To answer this question, analytic definitions of convergence and continuity which do not rely on intuition and pictures must be developed. There is a natural progression of results: Lagrange's remainder for Taylor series, the IVT and EVT to prove this, the completeness of the real number system to prove these, uniform convergence to deal with continuity. The author will present problem sets and classroom strategies designed to help lead students from their intuition to rigorous analysis. (Received September 21, 2006)