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Bruce Atwood* (atwoodb@beloit.edu), 700 College St., Box 224, Beloit College, Beloit, WI 53511, and **Kevin Braun** and **Tess Jacquez**. *Denoising Capillary Electrophoresis Signals with Wavelets*. Preliminary report.

Denoising experimental data provides a unique platform to develop collaborative undergraduate research projects between math departments and other disciplines. We describe one such collaboration between the Chemistry and Math departments at Beloit College in the application of wavelets to denoise analytical signals.

Capillary electrophoresis is one of the most widely utilized separation techniques for low-volume, high-speed, and high-sensitivity separation and real-time analysis of biologically active compounds. Methods to improve the sensitivity of capillary electrophoresis such as linear array signal averaging and Hadamard transform are often associated with a temporal resolution reduction, thus of limited use for the real-time analysis of fast biological processes. Wavelets provide an efficient post-collection denoising strategy that yields improved sensitivity while not affecting the temporal resolution. To optimize the application of wavelets in denoising electropherograms, the effect of wavelet type and threshold functions on peak shape and area has been explored. (Received September 21, 2010)