Welcome to the Landers Lab!

The use of microcolumn technology for executing rapid analytical separations has set the stage for creating a new paradigm in clinical diagnostics and biomedical research. Capillaries or microchannels with microscalar dimensions allow for applied fields as high as 30,000 volts to drive separations. As a result, high resolution analytic separations can be achieved with analysis times on the minute and even second time-scale of low volume (2 μL) samples using only microliters of reagents.

The capillary-based format provides flexibility for automation, critical to the clinical lab, while the microchip provides the possibility for integrating other chemistries (sample preparation, enzymatic modification, etc.) into the sample platform as that used for separation. This concept, embodied in the form of an Integrated Diagnostic (ID) Chip, presents the possibility for revolutionizing clinical diagnostics as we presently know.