



FINALIST
Dr. Jared Anderson

In May 2005, Dr. Jared Anderson received his Ph.D. in Analytical Chemistry from Iowa State University, Ames, Iowa.

Dr. Anderson is in his fifth year in the chemistry department at The University of Toledo (UT) having earned early tenure and promotion to Associate Professor during the 2008-2009 academic year. Contributions include, but are not limited to, the development of new separation methodologies and column technology, and the characterization of the fundamental theoretical basis for conducting separations with the new technology.

As a graduate student at Iowa State, Dr. Anderson's research impacted numerous aspects of separation science and is described in 15 publications. Of particular importance were his ground breaking studies focusing on the synthesis, characterization and development of novel high stability ionic liquids for use in analytical separations. This research led to the application of ionic liquids as a new class of gas-liquid chromatography stationary phases for which he is a co-inventor on a patent issued in 2006. The column technology was licensed by Sigma-Aldrich and is now commercially available to the separations community. Complementary to these technological advances, Dr. Anderson's research provided careful and in-depth evaluation of the mechanistic parameters that govern separation processes in ionic liquids. He developed important theoretical models to explain the separation properties of ionic liquids on the basis of a multiple solvation interaction model. He also developed a thermodynamic model to explain the solvation of alkanes in ionic liquids.

Dr. Anderson has focused his independent research efforts at UT on the design and use of ionic liquids for applications in chemical separations, conversion of biomass to fuels, and the development of new membrane technology for the separation of hydrogen from gasified coal. He has steadily developed his unique research program and at the same time worked with colleagues on campus, as well as at other universities, to create exciting new collaborative projects. He has furthered his efforts to design and synthesize novel ionic liquids for task specific applications for chemical separations. His work is cutting edge and is impacting several important scientific problems. This has quickly placed him as one of the leaders in the rapidly emerging field of ionic liquid technology and positioned him for the continued development of high impact innovations in separation methodology.