The world of single crystals, pristine samples, and controlled conditions are exchanged for real world samples with unknown contaminants and answers required yesterday. The Honeywell facility at Kansas City has an Analytical Laboratory equipped to perform Mechanical, Chemical and Surface Analysis. The Surface Analysis group has three scanning electron microscopes and an x-ray photoelectron spectrometer used to examine the surfaces of metals, polymers, ceramics, and semiconductors and their respective interfaces. Since the problems are tied to production, time is a major constraint in performing the analysis and providing accurate information to resolve them. The broad perspective and practical skills developed as a graduate student, post-doctoral associate, and as a professor have been invaluable in this new career. This presentation will examine several major projects that have been encountered over the past three years.