With the sequencing of the genome and subsequent identification of the genes and their protein products, there is renewed emphasis on understanding the many roles of the proteome using automated high-throughput approaches. Recent years have seen tremendous improvement in the quality and quantity of available mass spectrometry data, as well as the realization that advanced computational approaches are critical to the success of this technology. Computational proteomics is the field of research concerned with the development of algorithmic and computational statistics approaches to the interpretation of proteomics and mass spectrometry data. This meeting will bring together computational and experimental scientists to discuss current research directions, latest findings, and establish new collaborations towards meeting the algorithmic and statistical challenges in high-throughput proteomics.