

## **ROUND ROBIN for PHARMACEUTICAL COMPOUNDS**

Fangling Needham, Cyrus Crowder  
International Centre for Diffraction Data

The purpose of this round robin was to evaluate the consistency of quantitative X-ray powder diffraction (XRPD) analyses of common pharmaceutical materials across various laboratories. Specimens of three mixtures were prepared at ICDD and distributed at PPXRD-7 to participants from different laboratories. The three mixtures contained 1) acetaminophen and silicon, 2)  $\beta$ -D-mannitol and silicon, and 3) acetaminophen,  $\beta$ -D-mannitol, and silicon. Participants were asked obtain XRPD data on the specimens and verify the identity of the phases present in each mixture from their XRPD data. Secondly, participants were asked to determine the relative quantities of each component in the mixture from the XRPD data they had obtained.

This presentation will assess the results of these analyses, comparing each to the whole body of results and to the actual compositional values derived from the weights of each mixture's individual components. Origins for deviations in both individual and overall results from actual compositional values will be discussed. Information regarding instrument type, configuration, detector type, specimen preparation method, and analysis software will be considered in this discussion.