1139-81-628 **John B. DeBrota*** (john.debrota001@umb.edu), **Christopher A. Fuchs** and **Blake C. Stacey**. *Symmetric Informationally Complete Measurements Identify the Essential Difference between Classical and Quantum.*

In this talk we describe a general procedure for associating a minimal informationally-complete quantum measurement (or MIC) and a set of post-measurement states with a probabilistic representation of quantum theory. Towards this, we make use of the idea that the Born Rule is a consistency criterion among subjectively assigned probabilities rather than a tool to *set* purely physically mandated probabilities. In our setting, the difference between quantum theory and classical statistical physics is the way their physical assumptions augment bare probability theory: Classical statistical physics corresponds to a trivial augmentation, while quantum theory makes crucial use of the Born Rule. We prove that the representation of the Born Rule obtained from a *symmetric* informationally-complete measurement (or SIC) minimizes the distinction between the two theories in at least two senses, one functional, the other geometric. Our results suggest that this representation supplies a natural vantage point from which to identify their essential differences, and, perhaps thereby, a set of physical postulates reflecting the quantum nature of the world. (Received February 20, 2018)