SAMSON ABRAMSKY. *Relating Structure and Power: a junction between categorical semantics, model theory and descriptive complexity.*

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There is a remarkable divide in the field of logic in Computer Science, between two distinct strands: one focussing on semantics and compositionality (“Structure”), the other on expressiveness and complexity (“Power”). It is remarkable because these two fundamental aspects are studied using almost disjoint technical languages and methods, by almost disjoint research communities. We believe that bridging this divide is a major issue in Computer Science, and may hold the key to fundamental advances in the field.

In this talk, we describe a novel approach to relating categorical semantics, which exemplifies the first strand, to finite model theory, which exemplifies the second. It is based on [1, 2], and ongoing joint work with Nihil Shah, Tom Paine and Anuj Dawar.
