“Fundamental Constraints for Fundamental Theories”

As our understanding of the universe and its fundamental building blocks extends to shorter and shorter distances, experiments capable of probing these scales are becoming increasingly difficult to construct. Fundamental particle physics faces a potential crisis: an absence of data at the shortest possible scales. Yet remarkably, even in the absence of experimental data, the requirement of theoretical consistency puts stringent constraints on viable models of fundamental particles and their interactions. In this talk I’ll discuss a variety of criteria that have the possibility to address questions such as: What low energy theories admit consistent UV completions? Which massive particles are allowed in an interacting theory? Is string theory the unique UV completion of General Relativity?

Rachel Rosen, Columbia University

**Pizza & beverages will be available for attendees at 12:00 PM. Sandwiches will also be available for purchase ($5).**