Lecture #1

Title: "Thinking about Extremes" Abstract: This talk will be a cocktail mainly flavored by extremal or rare events. The ingredients will include: some history, some theory, some examples, and a taste of the future. A key question I want to address is to what extent can mathematics be used to tame the often considerable consequences of extremal events, be it in finance, insurance or the environment?

Date: Monday, April 22
Time: Talk at 3:30 pm
Location: 101 BCSB

Lecture #2

Title: "Model Uncertainty and Risk Aggregation"
Abstract: The quantitative regulation of banking and insurance is very much based on specific risk measures. Examples include value at risk (a quantile based measure), and expected shortfall (a conditional excess measure). Besides their statistical estimation, recent applications very much use the axiomatic theory of risk measures to investigate allocation and aggregation properties. In this talk I will present the necessary theory (going back to a question of Kolmogorov) on quantile-based risk aggregation when only partial information on the underlying stochastic structure is known. Besides discussing some analytic results for sums of risk positions, I will also present a versatile "Rearrangement Algorithm" for the numerical calculation of best and worst bounds in a model-uncertainty context. As an example, we discuss the calculation of risk capital for operational risk within the Basel 3 framework of banking regulation.

Date: Tuesday, April 23
Time: Talk at 3:30 pm
Location: 101 BCSB