Among the issues that are emerging in developing methods for uncertainty quantification is systemic risk, which is the overall failure of large, interconnected systems each of whose components can fail separately without causing systemic, overall failure. I will formulate several mathematical problems in this area and focus on mean field models. Within this class of models one can answer questions such as: how does interconnectedness improve the survival of individual components while increasing the systemic risk? Examples from various scientific fields and from finance will be discussed.

RSVP for the reception and lecture.