



THE UNIVERSITY OF CHICAGO

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Walking the walk: From massive computations to mathematical
discoveries

FRIDAY, February 10, 2017, at 12:00 PM
Math-Stat 112 (Stevanovich Center), 5727 S. University Avenue

ABSTRACT

This talk will have two main parts. First, I discuss the changes in science that are forcing us inescapably to do massive amounts of computation, and share with you my perspective on how the scientific community can respond to this change. Secondly, I show how massive computational studies can be utilized to make fundamental contributions in mathematical sciences. Namely, I present new results in the area of Compressed Sensing that were discovered largely by the ability to conduct million-CPU-hour computational experiments. These results concern the precise predictions of compressed sensing phase transitions in anisotropic undersampling schemes arising from applications such as NMR spectroscopy and MRI.