APPLIED MATHEMATICS COLLOQUIUM

How to Fool People to Work on Circuit Lower Bounds

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Abstract:
I will present two families of mathematical problems that are very simple to describe, that seem very natural-to-study from geometric, algebraic or combinatorial points of view, and are seemingly unrelated to theoretical computer science, and whose solution would give exceptionally strong results in theoretical computer science; namely, super-polynomial lower bounds for the size of general arithmetic circuits and formulas.

More specifically, I will discuss 'elusive functions and lower bounds for arithmetic circuits' - an approach to prove exponential lower bounds for circuit size; and 'tensor-rank and lower bounds for arithmetic formulas' - an approach to prove super-polynomial lower bounds for formula size.

Monday December 7th 2009
4:30 PM
Building 4, Room 370
Refreshments are available in Building 2, Room 290
(Math Common Room) between 3:30 – 4:30 PM

Applied Math Colloquium: http://math.mit.edu/amc/fall09
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