

## **abstract**

COMPUTER SCIENCE AND DISCRETE MATHEMATICS SEMINAR II

Topic:

Speaker:

Affiliation:

Date:

Time/Room:

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Non-relativization of complexity issues can be interpreted as giving evidence that these issues cannot be resolved by “black-box” techniques. We show that the assumption  $\text{DistNP} \subseteq \text{AvgP}$  does not imply that  $\text{NP} \subseteq \text{BPP}$  by relativizing techniques. More precisely, we give an oracle relative to which the assumption holds but the conclusion fails. Moreover, relative to our oracle,  $\text{NP} \cap \text{co-NP}$  requires exponential sized circuits. We also show that average-case easiness for  $\text{NP}$  does not imply average-case easiness for the polynomial hierarchy.