# The SUMO Speaker Series for Undergraduates

*(food from Pizza Chicago)*
Wednesday, May 19
*4:40-5:30*, room 380C

# Coverage problems in sensor networks

Henry Adams

Abstract: Let D be a bounded region in the plane. You have scattered a bunch of sensors in D, and each sensor covers a small ball. Unfortunately, you don't know the locations of the sensors. Instead, you only know which sensors are near each other and which are near the boundary of D. Can you determine if the sensors cover D? If the sensors do cover D, which sensors can you turn off without losing coverage? Suppose now that the sensors are moving: is it possible for an evader moving in D to avoid the sensors? These are examples of coordinate-free coverage problems in sensor networks. I will introduce homology and explain why it is a useful tool for such problems.

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