



## Special Colloquium



**Dr. Emily Heath**

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## Generalized Ramsey Theory

**Abstract:** How many guests must be at a party to ensure that there are either  $p$  mutual friends or  $p$  strangers in attendance? This easily-stated question is, in fact, a famously challenging classical question in the area of Ramsey theory. In this talk, I will introduce the Ramsey problem and a generalization of the problem due to Erdős and Shelah which asks, given integers  $p$  and  $q$ , for the minimum number of colors needed to color the edges of the complete graph on  $n$  vertices so that every complete subgraph on  $p$  vertices has at least  $q$  distinct colors. I will discuss some of my recent work on this generalized Ramsey problem and describe some of the exciting open questions in the area.

**Keywords:** Graph theory, Ramsey theory, graph coloring.

Thursday, Feb. 15, 12:05 – 12:50 pm in 1-309