**Brandeis – Harvard – MIT – Northeastern**

**Mathematics Colloquium**

**“Induced subgraphs and coloring”**

**Maria Chudnovsky**

**(Princeton)**

Abstract: What causes a graph to have high chromatic number? One reason is that the graph may contain a large set of pairwise adjacent vertices (called a "clique"), but what can be said if that is not the case? Around 1985 Andras Gayfas made three conjectures about structures that must be present in a graph with large chromatic number all of whose cliques have bounded size. Recently, in joint work with Alex Scott, Paul Seymour and Sophie Spirkl, we proved the strongest of these conjectures, that implies the other two. In this talk we will discuss some of the proof ideas, and related problems and theorems.

**Thursday November 30th, 2017**

**4:15PM-5:15PM**

**MIT, Room 2-190**

**Reception in 2-290 at 3:45PM**