Induced cycles and coloring

The Strong Perfect Graph Theorem states that graphs with no induced odd cycle of length at least five, and no complements of one behave very well with respect to coloring. But what happens if only some induced cycles (and no complements) are excluded? Gyárfás made a number of conjectures on this topic, asserting that in many cases the chromatic number is bounded by a function of the clique number. In this talk we discuss recent progress on some of these conjectures. This is joint work with Alex Scott and Paul Seymour.