WENDY MYRVOLD, Dept. of Computer Science, University of Victoria
Finding Independent Sets of a Graph

An *independent set* of a graph G is a set of vertices of G which are pairwise non-adjacent. There are many applications for which the input is a graph G with a large symmetry group and the goal is to generate either all of the independent sets or all of the maximum independent sets up to isomorphism. We present a very fast practical algorithm for this problem. The tactic can also be applied to many other problems: some examples are generation of all colourings or matchings of a graph up to isomorphism.

This is joint work with Patrick Fowler.