

Title: Constructive recognition of semilinear and subfield groups

Abstract: This talk will start with a gentle introduction to computational group theory, concentrating on matrix groups over finite fields. We will look at some classical theorems on matrix groups, before characterising the groups with scalar derived group. The main result is a polynomial-time Las Vegas algorithm for finding a nontrivial reduction of irreducible m -generated subgroups of $\mathrm{GL}(d, q)$ or $\mathrm{PGL}(d, q)$ that either lie in the subfield class or are semilinear or have non-absolutely irreducible derived group.

This is joint work with Jon Carlson and Max Neunhöffer