

# Group theory, arithmetic geometry and representation theory

Supervisor: Wushi Goldring

## **Project**

I have broad interests in arithmetic geometry, algebraic geometry, group theory and representation theory. In particular I am interested in applications of group theory – especially algebraic groups – to other areas. My broad interests are illustrated by the diversity of my current and past PhD students and postdocs' research interests, including one PhD student working on the Langlands Program, two PhD students working on the geometry of Shimura varieties mod  $p$  and recent postdocs working on arithmetic topology, Moonshine and vertex algebras for finite simple groups, complex geometry and higher category theory and algebraic groups in positive characteristic.

My preference is that a PhD topic is chosen together by the PhD student and the advisor, with the student taking as much initiative as possible.