Exotic number fields via Hilbert modular forms
Matthew Greenberg

In this talk, I will describe joint work with Lassina Dembele and John Voight in which we identify some exotic number fields by considering mod p Galois representations associated to Hilbert modular forms.

Computing Isogeny Volcanoes of Composite Degree
Dustin Moody

Isogeny volcanoes are an interesting structure that have had several recent applications. An isogeny volcano is a connected component of a larger graph. We further explore properties of and how to compute volcanoes given that we have already computed one of a different degree. This allows us to compute volcanoes of composite degree more efficiently than a direct construction using modular polynomials.

Average rank of Jacobians of modular curves
Kaneenika Sinha

The analytic rank of the Jacobian of the modular curve $X_0(N)$ is closely connected with the behaviour of the traces of Hecke operators acting on spaces of cusp forms of weight 2 and level N. We utilize this connection in order to find upper bounds on the analytic rank of $J_0(N)$.

Organizers
Paul Buckingham, University of Alberta, and Matthew Greenberg, University of Calgary