Sam Hughes, University of Oxford

<u>Title</u>: On finite quotients of discrete groups

<u>Abstract</u>: In this talk I will survey a number of recent results regarding (relative) profinite rigidity of certain groups (3-manifold groups, Coxeter groups, free-by-cyclic groups, Kaehler groups). Here profinite rigidity asks how much of information about a finitely generated residually finite group can be recovered from its finite quotients. From an algebraic geometry viewpoint this is essentially asking when the algebraic fundamental group determines an aspherical projective variety up to biholomorphism (assuming residual finiteness of the topological fundamental group). Much of the input will come from developments around the world of 3-manifold topology, building on the Virtual Fibring Theorem of Agol and Wise. With this in hand (and time permitting) I will discuss work of Wilton—Zalesskii, Wilkes, and Liu on rigidity amongst 3-manifold groups, work of myself and Kudlinska on rigidity amongst free-by-cyclic groups, and work of myself, Llosa Isenrich, Py, Spitler, Stover, and Vidussi on rigidity amongst Kaehler groups.