Algebra Seminar
and
Undergraduate Colloquium in Mathematics

Date: Thursday, October 11, 2018
Time: 1:00 PM-1:50 PM
Location: STV 131

Speaker: Tathagata Basak
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Talk title: **A complex ball quotient and the monster**

Abstract: Let U(n,1) be the set of isometries of a complex vector space with a non-degenerate hermitian form of signature (n,1). We shall talk about an discrete arithmetic subgroup M of U(13,1). The group M acts on the the unit ball B in thirteen dimensional complex vector space. Let X be the space obtained by removing the hypersurfaces in B that have nontrivial stabilizer in M and then quotienting the rest by M. The fundamental group G of the ball quotient X is an analog of the braid group. We shall state a conjecture that relates this fundamental group G and the monster simple group and describe our results (joint with D. Allcock) towards this conjecture. The discrete group M is related to the Leech lattice and has generators and relations analogous to Weyl groups.