Department of Mathematics, BGU

AGNT

On *Tuesday, January ,10 2023*

At *15:00 − 16:00*

In *101-*

Adam Logan (McGill)

will talk about

A conjectural unfiorm construction of many rigid Calabi-Yau threefolds

Abstract: Given a rational Hecke eigenform f of weight ,2 Eichler-Shimura theory gives a construction of an elliptic curve over ${\mathbb Q}$ whose associated modular form is f. Mazur, van Straten, and others have asked whether there is an analogous construction for Hecke eigenforms f of weight $k>2$ that produces a variety for which the Galois representation on its etale ${\mathrm H}^{k-1}$ (modulo classes of cycles fi k is odd) is that of f. In weight 3 this is understood by work of Elkies and Sch"utt, but in higher weight it remains mysterious, despite many examples in weight .4 In this talk I will present a new construction based on families of K3 surfaces of Picard number 19 that recovers many existing examples in weight 4 and produces almost 20 new ones.

Please Note the Unusual Time!