Mathematics, Statistics, and Computer Science   **@ UIC**

Special Colloquium

Surface bundles, monodromy, and arithmetic groups

Bena Tshishiku (Harvard)

Abstract: Fiber bundles with fiber a surface arise in many areas including hyperbolic geometry, symplectic geometry, and algebraic geometry. Up to isomorphism, a surface bundle is completely determined by its monodromy representation, which is a homomorphism to a mapping class group. This allows one to use algebra to study the topology of surface bundles. Unfortunately, the monodromy representation is typically difficult to "compute" (e.g. determine its image). In this talk, I will discuss some recent work toward computing monodromy groups for holomorphic surface bundles, including certain examples of Atiyah and Kodaira. This can be applied to the problem of counting the number of ways that certain 4-manifolds fiber over a surface. This is joint work with Nick Salter.

There will be tea in SEO 300 starting at 4:00.

Friday, November 30 at 3:00 PM in 636 SEO