

# Topology Seminar

**J.D. Quigley**

of The University of Virginia will be speaking on

## Some applications of the topological modular forms of projective spaces

on April 21 at 4:30 in

MIT Room 2-131

Hurewicz homomorphisms allow one to detect nontrivial elements in the stable homotopy groups of spheres by mapping them to the (often simpler) generalized homology groups of spheres. In previous work with Behrens and Mahowald, we computed the image of the 2-local Hurewicz homomorphism for topological modular forms, which allowed us to detect many new infinite families in the stable stems. In this talk, I will explain some recent work with Bhattacharya and Bobkova leveraging these computations, together with computations of the  $\mathrm{tmf}$ -homology of small projective spaces, to produce additional infinite families. Time permitting, I will also describe work in progress, building on Bauer's computation of the  $\mathrm{tmf}$ -cohomology of the infinite complex projective space, to detect smooth free circle actions on exotic spheres in arbitrarily high dimensions.

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