

## Algebraic Topology Seminar

### *The algebraic K-theory of the sphere spectrum*

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**Abstract:** Waldhausen showed that the algebraic K-theory of the “spherical group ring” on the based loops of a manifold captures the stable concordance space of the manifold. In the simplest case, this result says that for high-dimensional disks, information about  $B\text{Diff}$  is encoded in  $K(S)$ , the algebraic K-theory of the sphere spectrum. This talk explains recent work with Mike Mandell that provides a complete calculation of the homotopy groups of  $K(S)$  in terms of the homotopy groups of  $K(Z)$ , the sphere spectrum, and a certain Thom spectrum. I will also explain what we know about the homotopy type of  $K(S)$  in terms of a kind of K-theoretic Tate-Poitou duality.

Monday, March 30 at 3:00 PM in SEO 1227