

# Topology Seminar

## Matthew Ando

of University of Illinois Urbana-Champaign will be speaking on

### Parametrized spectra, Thom spectra, and twisted Umkehr maps

on October 27 at 4:30 in  
MIT Room 2-131

Let  $R$  be an associative ring spectrum. I shall describe several new constructions of the  $R$ -module Thom spectrum associated to a map  $f : X \rightarrow \mathrm{BGL}_1 R$ . The space  $\mathrm{BGL}_1 R$  classifies the twists of  $R$ -theory, and to a fibration of manifolds  $g : Y \rightarrow X$  I shall associate an Umkehr map  $g_!$  from the  $f g$ -twisted  $R$ -theory of  $Y$  to the  $f$ -twisted  $R$ -theory of  $X$ . In the case of  $K$ -theory, this twisted Umkehr map appears in the study of  $D$ -brane charge. I shall review this story, and then discuss the analogous construction for  $\mathrm{TMF}$ .