

# Topology Seminar

## Michael Ching

of Amherst College will be speaking on

### Some examples of homotopic descent

on February 11 at 4:30 in  
MIT Room 2-131

I will describe a collection of theorems that exemplify homotopic descent. Each of these theorems says that a certain Quillen adjunction is ‘comonadic’ in a homotopical sense: that is, it identifies the homotopy theory on one side of the adjunction with the homotopy theory of coalgebras over a certain comonad that acts on the other side. I will say what I mean by the homotopy theory of such coalgebras and give a Barr-Beck comonadicity condition.

The examples concern operad theory and Goodwillie calculus. One result identifies the homotopy theory of 0-connected algebras over an operad of spectra with that of 0-connected divided power coalgebras over the Koszul dual operad. (This is joint work with John Harper.) Another describes the homotopy theory of  $n$ -excisive homotopy functors (between categories of spaces and/or spectra) in terms of appropriate comonads. (This is joint work with Greg Arone.) In the case of functors from spaces to spectra, and algebras over the commutative operad, there is a close connection between these two examples, which I shall describe.