

JOINT
☀ STABLE HOMOTOPY LEARNING SEMINAR ☀
&
🌀 ALGEBRA SEMINAR TALK 🌀

FRIDAY, APRIL 3, 2009

RICHARD KANE

**Department of Mathematics
The University of Western Ontario**

3:30 P.M. – Middlesex College Room 106

“Cobordism and BP theory plus K-theory continued”

Generalized cohomology theories have been studied continuously since the late 1950's. My lecture of several weeks ago was devoted to a brief survey of topological K-theory, the first generalized cohomology theory to be developed and utilized. The present lecture will begin by discussing another family of generalized cohomology theories which have also been extensively studied – cobordism theory and its associated theories, notably Brown-Peterson theory and Morava K-theory. This work includes major contributions by Thom, Novikov and Quillen. A major theme of this discussion will be the algebra of cohomology operations associated with each of these theories.

As we will see, topological K-theory can also be fitted into the framework of this family of cohomology theories. In addition we will return to K-theory and discuss both λ operations and Adams operations. However these operations will turn out to be rather distinct from the ones considered for cobordism and **BP** theory.



D. Quillen



R. Kane



S. P. Novikov



J. F. Adams

“The work of S. P. Novikov which is in question was presented at the International Congress of Mathematicians, Moscow, 1966, in a half-hour lecture, in a seminar, and in private conversations....”

-J. F. Adams 1974

A mesmerizing picture of the Brown-Peterson spectrum, haunting music foretelling beauty and excitement – that is the opening of volume II of Richard Kane's amazing story of the romantic search for operations in generalized cohomology theory. A story of puzzlement, courage, and triumph – wonderfully presented by one of the originators himself.