Submittee: Alejandro Adem
Date Submitted: 2009-04-30 09:53
Title: Cascade Topology Seminar
Event Type: Conference-Workshop

Location:
PIMS-UBC (Vancouver)

Dates:
April 25-26, 2009

Topic:
topology lectures

Methodology:
There were five plenary lectures and three short lectures by advanced graduate students.

Objectives Achieved:
There was substantial networking among topologists from the Pacific Northwest and the prominent speakers from outside the region attracted a lot of interest.

Scientific Highlights:
Excellent lectures and collaborations.

Organizers:
Adem, Alejandro, Mathematics, UBC Rolfsen, Dale, Mathematics, UBC

Speakers:
Speaker: Daniel Dugger (U.Oregon) Title: Motivic stable homotopy groups Speaker: Chad Giusti (U.Oregon) Title: Unstable Vassiliev theory Speaker: Veronique Godin (U.Calgary) Title: Relative invariant of string topology Speaker: Jose Maria Cantarero (UBC) Title: Twisted K-theory and Groupoids Speaker: Laurent Meersseman (PIMS/U.Bourgogne) Title : Complex Manifolds, Real Quadrics and Convex Polytopes Abstract : This is a joint work with Frederic Bosio (Poitiers, France). We investigate the topology of a large class of non-Kaehler compact complex manifolds called LV-M manifolds. These manifolds are diffeomorphic to real quadrics in the complex space C^n of a special form, so we forget about the complex structures and work with this model. On the other hand, LV-M manifolds admit a smooth torus action whose quotient is a simple convex polytope and can be seen as a smooth realization of moment-angle manifolds. In this talk, I will explain

how complicated is the topology of LV-M manifolds by making a reduction to combinatorics of convex polytopes. In particular, I will give a combinatorial formula for the homology with coefficients in Z of LV-M manifolds. This uses cohomological results of Buchstaber and Panov. I will also resolve an associated wall-crossing problem by studying a set of surgeries defined on simple convex polytopes. Finally, I will discuss some consequences for compact complex manifolds. In particular, I will prove that there exist affine compact complex manifolds (that is manifolds with an atlas whose changes of charts are affine biholomorphisms of C^n) with arbitrary complicated homology groups. This contrasts with the Kaehler case : affine Kaehler compact complex manifolds are covered by a complex torus. Speaker: Ronald J. Stern (UC Irvine) Title: Finite group actions on smooth 4-manifolds Abstract: We will outline the construction of infinite families of smooth actions of finite cyclic groups on simply connected smooth 4-manifolds with nontrivial Seiberg-Witten invariants with the property that the actions are equivariantly homeomorphic but not equivariantly diffeomorphic. This is joint work with Ron Fintushel and Nathan Sunukjian. Speaker: Troy Winfree (U. Washington) Title: Continuous homotopy fixed point spectra: finiteness properties and computations Speaker: Gang Tian (Princeton University) Title: Spaces with bounded Ricci curvature in dimension 4

Links:
