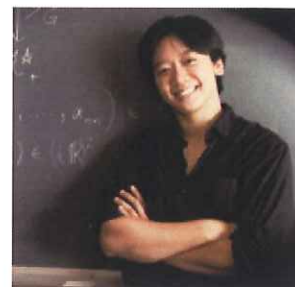


Pathways Lecture Series in Mathematics, KEIO

Speaker : **Prof. Megumi Harada**
(McMaster University)



Place : 12-209, 2nd Floor, Bldg. 12
Faculty of Science and Technology
Yagami Campus, Keio University

Lecture 1 16:30 – 18:00 July 9, 2007 (Monday)

Lecture 2 16:30 – 18:00 July 10, 2007 (Tuesday)

Symplectic techniques in the topology of quotients

Symplectic geometry lies at the crossroads of many exciting areas of research due to their relations to geometric representation theory, combinatorics, and certain areas of physics such as string theory. As often happens in mathematics, the presence of symmetry in these geometric structures –in this context, a Hamiltonian G -action for G a Lie group –turns out to be crucial in the computation of topological invariants, such as the Betti numbers or the cohomology ring, of symplectic manifolds.

In the first lecture, I will give a bird's-eye, motivating overview of this subject and its connections with other fields, with many illustrating examples.

In the second lecture, I will explore some of the technical issues in some more depth, and also indicate how some of these ideas have been applied in other contexts, such as hyperkähler geometry.