COLLOQUIUM

UNIVERSITY OF PITTSBURGH

FRIDAY, MARCH 23, 2018

704 THACKERAY HALL

3:30 P.M.

JIAN-GUO LIU

DEPARTMENT OF MATHEMATICS
DUKE UNIVERSITY

DYNAMICS OF A DEGENERATE PDE MODEL OF EPITAXIAL CRYSTAL GROWTH

ABSTRACT: Epitaxial growth is an important physical process for forming solid films or other nano-structures. It occurs as atoms, deposited from above, adsorb and diffuse on a crystal surface. Modeling the rates that atoms hop and break bonds leads in the continuum limit to degenerate 4th-order PDE that involve exponential nonlinearity and the p-Laplacian with $p = 1$, for example. We discuss a number of analytical results for such models, some of which involve subgradient dynamics for Radon measure solutions.

Refreshments served at 3:00 p.m.
in the Math Dept. COMMON ROOM, Thackeray 705