



# UNIVERSITY OF CALIFORNIA RIVERSIDE

DEPARTMENT OF MATHEMATICS

## Colloquium

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**Dr. Inwon Kim**  
**UC Los Angeles**

“Quasi-static evolution and congested crowd motion”

**Abstract:**

In this talk we investigate the relationship between Hele-Shaw evolution with a drift and a transport equation with a drift potential, where the density is transported with a constraint on its maximum. The latter model, in a simplified setting, describes the congested crowd motion with a density constraint. When the drift potential is convex, the crowd density is likely to aggregate, and thus if the initial density starts as a patch (i.e. if it is a characteristic function of some set) then it is expected that the density evolves as a patch. We show that the evolving patch satisfies a Hele-Shaw type equation. This is joint work with Damon Alexander and Yao Yao.

**Wednesday, May 15<sup>th</sup>, 2013**

**Surge 284**

*Tea Time 3:40 p.m. – Talk Begins 4:10 p.m.*