



Professor Luis A. Caffarelli holds the Sid Richardson Chair in Mathematics at the University of Texas at Austin. The focus of his research has been elliptic nonlinear partial differential equations and their applications. Some of his most significant contributions are the regularity of free boundary problems and solutions to nonlinear elliptic equations, optimal transportation theory and, more recently, results in the theory of homogenization. Professor Caffarelli is a member of the National Academy of Sciences. He has been awarded Doctor Honoris Causa from l'Ecole Normale Supérieure in Paris, Universidad Autónoma de Madrid, and Universidad de la Plata in Argentina. He received the Bôcher Prize in 1984 and the prestigious Rolf Schock Prize in Mathematics of the Royal Swedish Academy of Sciences in 2005. He was recently awarded the Leroy P. Steele Prize for Lifetime Achievement in Mathematics.

3:30-4:30 P.M.
Friday,
March 26, 2010

Frick Fine Arts
Auditorium

Free and Open
to the Public

The University of Pittsburgh
Department of Mathematics

Presents

The Edmund R. Michalik
Distinguished Lecture in the
Mathematical Sciences

Luis Caffarelli

Sid Richardson Chair in Mathematics,
University of Texas at Austin

Non Linear,
Geometric Homogenization

ABSTRACT: Equations involving periodic or random media (i.e. equations where the dependence on spatial position changes in a periodic or random fashion) appear in areas of geometry (manifold foliations), material sciences, optimal control and game theory. The main mathematical issue is to decide how the local oscillation of the media determines the properties of solutions in the large. I will describe several nonlinear problems with a geometric flavor and try to give an idea of the common points in their treatment.

Reception Immediately
Following the Lecture

This public lecture is part of an annual series in honor of Professor Edmund R. Michalik, established through a gift from the Michalik family.

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