



“Advances in Advancing Interfaces: The Mathematics of Manufacturing of Industrial Foams, Fluidic Devices, and Automobile Painting”

Professor James Sethian
University of California, Berkeley, CA

Complex dynamics underlying industrial manufacturing depend in part on multiphase multiphysics, in which fluids and materials interact across orders of magnitude variations in time and space. In this talk, we will discuss the development and application of a host of numerical methods for these problems, including Level Set Methods, Voronoi Implicit Interface Methods, implicit adaptive representations, and multiphase discontinuous Galerkin Methods.

Applications for industrial problems will include modeling how foams evolve, how electro-fluid jetting devices work, and the physics and dynamics of rotary bell spray painting across the automotive industry.