

## Analysis and Applied Mathematics Seminar

*Two examples of variational methods applied to pattern formation in active materials*

Paul Plucinsky (Univ. of Southern California)

**Abstract:** Pattern formation at microscopic scales is an ubiquitous property of active materials undergoing phase transformation or mechanical loading. In shape memory alloys, for instance, a temperature change beyond a critical temperature can result in the branching of fine-scale twins of the low temperature phase (martensite) at an interface with the high temperature phase (austenite). Additionally, in nematic elastomer sheets, loading transverse to the sheet's natural orientational order induces fine-scale oscillations in this order and a soft elastic response. In this talk, I will discuss how the aforementioned features can be modeled by variational methods, and how this modeling can be used to make predictions of the material behavior at the engineering scale.

*Note the unusual time.*

Monday, December 2 at 4:15 PM in 636 SEO
------------------------------------------