THE UNIVERSITY
of NORTH CAROLINA
at CHAPEL HILL

Mathematics Colloquium

Thursday, October 27, 2022
3:30 - 4:30 p.m.
PH 332

Geometric variational problems: regularity vs singularity formation

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Abstract. I will describe in a very informal way some techniques to deal with the existence (and more qualitatively regularity vs singularity formation) in different geometric problems and their heat flows motivated by (variations of) the harmonic map problem, the construction of Yang-Mills connections or nematic liquid crystals. I will emphasize in particular on recent results on the construction of very fine asymptotics of blow-up solutions via a new gluing method designed for parabolic flows. Ill describe several open problems and many possible generalizations, since the techniques are rather flexible.