Geometry, Groups and Dynamics/GEAR Seminar
(held at the Illinois hub of GEAR)

12:00 pm, 243 Altgeld Hall,Tuesday, September 25, 2018

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Normal generators for mapping class groups are abundant

Abstract: For mapping class groups of surfaces, we provide a number of simple criteria that ensure that a mapping class is a normal generator, with normal closure equal to the whole group. We then apply these criteria to show that every nontrivial periodic mapping class that is not a hyperelliptic involution is a normal generator whenever genus is at least 3. We also show that every pseudo-Anosov mapping class with stretch factor less than √2 is a normal generator. Showing that pseudo-Anosov normal generators exist at all answers a question of Darren Long from 1986. In addition to discussing these results on normal generators, we will describe several ways in which they can be leveraged to answer other questions about mapping class groups. This is joint work with Dan Margalit.