1154-60-1143   **Jacob Richey*** (`jfrichey@uw.edu`), C-138 Padelford, Box 354350, Seattle, WA 98195-4350.
Recent results on the phase transition for activated random walk.

In this talk we will discuss activated random walk, an interacting particle system that exhibits a phase transition on infinite domains and self-organized criticality on finite domains. In the infinite version, the system is initialized with density μ of particles which perform independent simple random walk, fall asleep at rate λ, and are woken up if another particle moves to the same site. There are two possible limiting behaviors: local fixation, where each site is visited finitely many times a.s., or non-fixation, where each site is visited infinitely many times a.s. Current research is focused on determining where the transition between these two phenomena occurs in terms of μ and λ, and many questions still remain – even on $\mathbb{Z}$. We will present a novel statistical idea to establish non-fixation, mention some recent results that follow from it, and point to open problems in this vein. (Received September 13, 2019)