Chains, consisting of jointed rigid segments, can exhibit unexpected and fascinating dynamical phenomena; one example is the chain fountain. Whips, typically formed from continuously deformable soft materials, also show interesting dynamical phenomena, such as supersonic tip velocity. In this talk, I will discuss the processes responsible for the intriguing responses of these two mechanical systems and demonstrate astonishing dynamical behavior when they are combined to form a chain whip.

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2. A. Goriely and T. McMillen, Shape of a Cracking Whip, Phys. Rev. Lett. 88, 224301 (2002)