

1145-VM-1417 **Jakob Hofstad** and **David Walmsley*** (walms11@stolaf.edu). *Iteration of Differentiation.*

Take your favorite infinitely differentiable function and repeatedly differentiate it. The successive derivatives of this function form a sequence. What kinds of sequences can you see? Sometimes, the sequence of successive derivatives is periodic, and other times, it is eventually zero. It is a surprising fact that in most cases, the sequence is actually dense! In this talk, we'll discuss how to construct such a *hypercyclic function* for the derivative operator on the Fréchet space of entire functions $H(\mathbb{C})$. We will also discuss our recent work on constructing such a hypercyclic function for a given differential operator as an infinite product. (Received September 21, 2018)