1126-76-15 **Nick Moore*** (mnmoore2@fsu.edu), 208 Love Building, Tallahassee, FL 32303. *How Focused Flexibility Maximizes the Thrust Production of Flapping Wings.*

Birds, insects, and fish all exploit the fact that flexible wings or fins generally perform better. It is not clear, though, how to best distribute flexibility: Should a wing be uniformly flexible, or should certain sections be more rigid than others? I will discuss this question by using a 2D small-amplitude model combined with an efficient Chebyshev PDE solver. Numerical optimization shows that concentrating flexibility near the leading edge of the wing maximizes thrust production. (Received October 26, 2016)