1099-35-74 **Matthew Pennybacker*** (`pennybacker@math.unm.edu`). *Fronts in Fibonacci Phyllotaxis.*

Some of the most spectacular patterns in the natural world can be found on members of the plant kingdom. Furthermore, the regular configurations of organs on plants, collectively called phyllotaxis, exhibit a remarkable predisposition for Fibonacci and Fibonacci-like progressions. Starting from a biochemical and mechanical growth model based on the pioneering work of Meyerowitz and Traas, we derive a PDE similar to the classic Swift-Hohenberg equation. Amazingly, we find that nearly every property of Fibonacci phyllotaxis can be explained as the propagation of a pushed pattern-forming front. (Received January 27, 2014)