

1145-92-2445

**E E Goldwyn\***, goldwyn@up.edu. *Data Driven Models of Pathogen Competition in Gypsy Moth Populations*. Preliminary report.

The North American gypsy moth is a non-native pest which causes widespread economic damage and forest defoliation. Gypsy moth populations undergoes episodic outbreaks that are driven by interactions with a viral and a fungal pathogen. While viral transmission is strongly density dependent, fungal transmission is weather dependent. Using maximum likelihood techniques and an MCMC routine, we fit parameters from a predictive SIR-type disease transmission model of the within season dynamics of the gypsy moth to field data collected from natural populations. (Received September 25, 2018)