1128-60-289   **Gabrielle I. Warren***, Department of Mathematics, 204 S College Ave, College Place, WA 99324, and **Benjamin D. Jackson**. *Finding Order in Chaos: Modeling Hidden Markov States.* Preliminary report.

A hidden Markov model (HMM) is a stochastic process in which the relationship between the number of states and the observations is not one-to-one. HMMs are often used in speech recognition programs, bioinformatics, and scoring protein-ligand interactions in structure-based drug design. Detecting hidden states from noisy data is generally difficult. We illustrate a possible retrieval algorithm using synthetic data which was created in R by implementing a low dimensional HMM. (Received February 28, 2017)