1096-62-2357 **Eric Ruggieri*** (eruggier@holycross.edu), College of the Holy Cross, Dept. of Mathematics and Computer Science, Worcester, MA 01610. *A Sequential Approach to Detecting Change Points.* Preliminary report.

Imagine trying to model a data set where the model is suspected to change from one section of the data to the next. The difference could be as simple as a change in the mean, slope, or frequency of a signal. Each time the model is altered is called a 'change point', and identification of these change points is not always a trivial task. A time series containing N data points has approximately N^k distinct placements of k change points, rendering brute force enumeration futile as the length of the time series increases. Moreover, how certain are we that any one placement of change points is superior to the rest? In this talk, I'll introduce a sequential Bayesian change point algorithm which provides uncertainty estimates both in the number and location of change points through an efficient probabilistic solution to the multiple change point problem. The algorithm is able to quickly update itself with the arrival of each new observation and can accurately predict where in the data set a change point has occurred. (Received September 17, 2013)