**Background**

Internet traffic varies, as does the performance of routers that manage it. Routers are essentially “traffic cop” computers on Internet backbones responsible for redirecting data from sender to receiver. Slowdowns (lengthened response times) in major routers have adverse effects on Internet data flow in the regions those routers serve. That in turn can have negative implications for commerce as well as social communication. In this sense, while traffic can effect router response times, those times can also impact future traffic.

Being able to anticipate router slowdowns can therefore be critical to a firm’s strategy for an effective web-presence. It can help the firm understand when on-line marketing tactics may be most effective. It may suggest alternative regions for targeting commercial efforts.

That being said, neither traffic nor other issues impacting router response times are easily predicted... *but that doesn’t mean we can’t try.* Fortunately some of the data we might use to predict future response times is freely available. For example: [http://www.internettrafficreport.com/namerica.htm](http://www.internettrafficreport.com/namerica.htm)

On this traffic report page, average response times for various major routers in North America are updated every 5 minutes.

*We’ve been monitoring “some” of these response times for the last month and a half. That data is available at: [http://www.fc.bus.emory.edu/~elliot_bendoly/ISOM/ResponseTimes.xlsx](http://www.fc.bus.emory.edu/~elliot_bendoly/ISOM/ResponseTimes.xlsx)*

The routers that have shown the most variance over that time are located in Massachusetts (Boston), Nevada (Las Vegas) and New Jersey.

**Your Task**

Use the data available (on the sheet provided as well as any you collect), and over the next two weeks develop 3 models for predicting the 9amEST Weekday response times for these 3 routers. Your models must make these predictions one day in advance (i.e. the forecast for 9amEST Thursday but be generated by 9amEST the day before (Wed)).

Submit your models by Feb 19th in spreadsheet form to Dr. Elliot Bendoly (elliot_bendoly@bus.emory.edu). Either individuals or teams may register on submission; team members will split any associated prize.

Starting on Feb 20th and through March 2nd, your models will compete against others submitted for “best predictive capability” (average % variance in log(time) accounted for across the 3 models). If you have additional sources of data necessary for your models to base predictions on (e.g. from other sites), you must submit that information on a daily basis over this 2 week evaluation period. The entrant with the best performing set of models will be awarded $500. Second place will received $250. Third place will receive $100. Both the top 3 MBA and top 3 BBA performers will also be separately recognized.