1060-60-207 **Michael Coulon*** (mcoulon@princeton.edu), Princeton University - ORFE Department, 117 Sherrerd Hall, Princeton, NJ 08544. *Energy price correlations: Understanding the links between coal, gas, electricity and carbon prices.*

Energy price modeling is a growing area of financial mathematics in which many interesting problems exist and many different approaches are used. In this talk, I shall focus on the question of how to capture the complex dependence structure between different energy spot prices which is of key importance to energy companies, as well as many financial institutions. In particular, the structure of the electricity market is a natural starting point for this task, as it brings together generators of different types with production costs tied to different fuels and emissions costs. Evidence from the PJM and New England electricity markets illustrates the benefit of using observed auction data to better understand the strong relationships between fundamental supply and demand factors and power prices. We exploit these observations to create a structural model for both electricity and (if necessary) CO2 emissions prices, which embeds the correlation with fuel prices through important features such as merit order changes and fuel switching by generators, helping us to better understand the complicated behavior of energy prices. (Received March 30, 2010)