1116-VM-739 **Julia Walk***, 14 MacLean Hall, Iowa City, IA 52242. *Modeling the Effects of Multiple Myeloma on Kidney Function.* Preliminary report.

Multiple myeloma, a type of plasma cell cancer, is associated with many health challenges, including kidney damage caused by tubulointerstitial fibrosis. The damages caused by tubulointerstitial fibrosis increase the chances of development of end-stage renal disease. Interactions between proximal tubule cells, free light chains, and monoclonal protein produced by the myeloma cells determine the amount of kidney damage present. Using power law approximations, we develop a mathematical model that captures the biology of the interactions between these cells. The goal of this work is to create a model with prognostic capabilities that could be calibrated with a specific patient's data to predict likelihood of renal function recovery following myeloma therapy. (Received September 11, 2015)