DATE: Tuesday, 28 April 2015  
TIME: 11 a.m.  
LOCATION: Mesa Lab, Main Seminar Room  
NCAR, 1850 Table Mesa Drive  
SPEAKER: Ben Sanderson, NCAR/CGD  
TITLE: Tales from the future: scenarios and uncertainty  

ABSTRACT:  
When will efforts to mitigate climate change pay off? We consider the role of the scenario in the context of a range of uncertainties in future climate, from natural variability to choices in model design. Using two large ensembles of CESM following different greenhouse gas concentration pathways, we evaluate the question of when the benefits of climate mitigation become evident in regional climate projection. We also consider the issue of ensemble size and how to best spend our computing hours - how many ensemble members are required to have confidence in the mean forced pathway, in long term trends and in extreme events? Do we need to repeat such ensembles for multiple scenarios, or can the results be predicted? We also consider the output of a CESM perturbed physics ensemble to assess the role of scenarios and internal variability in the context of parameter uncertainty in the model. Finally, looking ahead to CMIP6 scenario design process, we use the results of a simple climate model to assess the implications of mitigation (or lack thereof) on a multi-century timescale and the costs of delayed action.

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