

Abstract Prof. Steven Sherwood

Title of talk: **A connection between tropical lapse rates, severe hurricanes, and peak heat stress**

I will begin with a recent study arguing that achievable levels of global warming may bring many regions of the Earth close to the limit of habitability due to summertime heat stress. The thermodynamics of heat transfer from mammals are closely linked to the thermodynamics of thunderstorms, such that summer storm activity arguably acts as a thermostat limiting the worst heat stress to levels that are tolerable today, but may not be in centuries to come. Some issues arising in connection to this affect a second climate impact, tropical cyclones, as both are connected to the tropical lapse rate which some studies suggest is changing in unexpected ways that could be boosting the power of hurricanes. I will review the evidence on this point, which unfortunately remains inconclusive.