**Andrew Dessler**

The magnitude of future climate change will be determined by several factors, one of which is the equilibrium climate sensitivity (ECS), defined to be the equilibrium global-average surface warming in response to a doubling of atmospheric carbon dioxide concentration. Estimating this quantity is an important goal of climate science and much effort has been expended over the past several decades working on this problem. Nevertheless, significant uncertainty remains, as evidenced by the large range of possible values in every assessment written since the 1970s. I am looking for students to work on targeted investigations to help us understand estimates of ECS from observations, leading to potential improvements in estimates of ECS. We will use CMIP5 and CMIP6 climate model output as test beds to investigate the various methodologies of extracting ECS from the 20th century record. The ultimate goal is to identify the best methodology and use in order to refine our estimates of ECS. We also hope to more fundamentally understand ECS and how a particular value is generated by the climate system.

**Don Collins**

A student joining my research group would study aerosol production and processing resulting from gas and/or aqueous phase chemistry. A student interested in field work would use our portable captive aerosol chambers to study processing rates and effects under ambient conditions. We have recently used the chambers at sites in New Mexico and Texas and anticipate using them at other locations in the next few years. A student interested in laboratory work would use our indoor multiphase chamber to study the rate of production and the properties of secondary aerosol formed in simulated clouds. We are currently most interested in aqueous phase production of organic aerosol. Of course, a combination of lab and field work is possible as well and other project opportunities may arise.

**Tony Knap**

Interested in students who may be interested in the connection between Ocean and Human Health issues. Being here in Qingdao at the moment and seeing the issues between the seafood industry, coastal development and human health issues - with be a priority for China so the students who had an interest in analytical environmental chemistry and toxicology would be welcome into the Superfund model.

**Tim Dellapenna**

 Castal/estuarine geology.

**Rob Hetland/Scott Socolofsky**

Castal ocean modeling.

 **Yige Zhang**

Pleoclimate and geochemistry.

**Katie Shamberger** (maybe)

Ocean acidification.

**Jessica Fitzsimmons**

Trace metals.

**Henry Potter**

Physical oceanographer with interest in ocean observing, air-sea interaction, waves, and tropical cyclones.

**Andy Dessler**

The magnitude of future climate change will be determined by several factors, one of which is the equilibrium climate sensitivity (ECS), defined to be the equilibrium global-average surface warming in response to a doubling of atmospheric carbon dioxide concentration. Estimating this quantity is an important goal of climate science and much effort has been expended over the past several decades working on this problem. Nevertheless, significant uncertainty remains, as evidenced by the large range of possible values in every assessment written since the 1970s. I am looking for students to work on targeted investigations to help us understand estimates of ECS from observations, leading to potential improvements in estimates of ECS. We will use CMIP5 and CMIP6 climate model output as test beds to investigate the various methodologies of extracting ECS from the 20th century record. The ultimate goal is to identify the best methodology and use in order to refine our estimates of ECS. We also hope to more fundamentally understand ECS and how a particular value is generated by the climate system.

**Yangyang Xu**

Looking for a student to work on problems related to decadal climate variability and prediction involving large-scale atmosphere-ocean interaction and heat exchange between surface and Deep Ocean.

**Robert Korty**

We study tropical cyclone-climate interactions using past climate data and models. We are presently investigating Atlantic hurricane variability during the last millennium by conducting experiments with a regional model (WRF). These efforts include running tracking algorithms, analyzing large-scale environmental factors related to tropical cyclone genesis and intensification, and analysis of the tracks, intensity, lifespan, and size of tropical cyclones simulated and downscaled using a variety of methods.

**Sarah D. Brooks**

Marine Aerosols and Cloud Formation. Recent evidence suggests that a large fraction of the total aerosol above the ocean is comprised of marine organic matter which may act as seeds in natural cloud formation. The ability of aerosols to act as cloud condensation nucleation (CCN) and ice nucleating particles (INPs) must be quantified to understand the potentially large role of microorganisms in cloud formation, radiative properties, and impacts on climate. Here we propose to couple atmospheric aerosol, CCN, and INP measurement techniques with a well-controlled simulation of ocean biology in a laboratory macrocosm. Understanding of marine aerosols in cloud formation and properties will be improved by testing whether marine ecology-cloud formation connections observed in laboratory also occur in the complex environment. The Brooks research group has just completed 3 major research cruises through the NASA North Atlantic Aerosol and Marine Science Study (NAAMES). An additional aspect of this project will include analysis of the large dataset of aerosol, CCN, INP properties obtained during the cruises and comparison to laboratory measurements.