AEROSOL DISCUSSION POINTS

General

- What are the candidate treatments of oxidant chemistry and aerosols?
- Should more than one be supported on the trunk?
- For how long?

Discrimination of Schemes

- Do aerosols have to be simulated online to simulate direct and indirect effects?
- Which oxidant chemistry needs to be treated to simulate direct and indirect effects?
- How important is ammonia nitrate in the past/present/future?
- What simplifications in the representation of the aerosol mixing state and size distribution are acceptable?
- What are the trade-offs between run time and realism in different representations of oxidant chemistry and aerosol physics?

Emissions

- Which aerosol sources are missing?
- Can aerosol sources be treated independently of the representation of aerosol mixing state and size distribution?

Dust and Sea Salt

- How should these be binned to interact with the microphysics?

Which interfaces can be introduced that will facilitate the application of aerosol modules to the CCSM to treat:

- Dependence of emissions on surface properties and processes?
- Dependence of dry deposition on surface properties?
- Gas-to-particle production of aerosol in clear air?
- Activation, aqueous-phase production and wet scavenging of aerosol (cloud-aerosol interactions)?
- Water uptake?
- Optical properties of aerosol?

Evaluation

- Which aerosol measurements would be most useful for validation?
  - Satellite remote sensing
  - Surface-based remote sensing
  - In situ
- Should the aerosol scheme(s) be represented in Aerocom?

Other Issues?