Changing chemistry

- Obtain/generate chemistry preprocessor input file
- Point CAM configuration to new file
- Change dry deposition / wet deposition
- Add emissions/output to atm_in if necessary

Preproc. files

- All existing (i.e. distributed) variations can be found in

  $CESM_ROOT/models/atm/cam/src/chemistry/pp_trop_strat_bam_v1/chem_mech.in

- Adding a new species
  - Name + formula if necessary
  - Implicit or explicit solver
  - Will it have an external forcing?

Dry deposition

- Namelist: drv_flds_in

```
&drydep_inparm
 drydep_list           = 'ALKOOH', 'C2H5OH', 'C2H5OOH', 'C3H7OOH', 'CB1', 'CB2',
    'CH2O', 'CH3CHO', 'CH3CN', 'CH3COCH3', 'CH3COCHO',
  'CH3COOH', 'CH3COOOH', 'CH3OH', 'CH3OOH', 'CO', 'GLYALD', 'H2O2', 'HCN',
    'HCOOH', 'HNO3', 'HO2NO2', 'HYAC',
  'HYDRALD', 'ISOPOOH', 'MACROOH', 'MEKOOH', 'MPAN', 'NH3', 'NH4', 'NH4NO3',
    'NO', 'NO2', 'O3', 'OC1', 'OC2', 'ONIT',
  'ONITR', 'PAN', 'POOH', 'Pb', 'ROOH', 'SO2', 'SO4', 'SOA', 'TERPOOH', 'TOLOOH',
    'XOOH'
 drydep_method         = 'xactive_lnd'
/
```

- Changes to be made in the code:
  - models/drv/shr/seq_drydep_mod.F90 -> test_name
  - models/atm/cam/src/chemistry/mozart/mo_drydep.F90 (subroutine drydep_xactive)
  - models/lnd/clm/src/biogeochem/DryDepVelocity.F90

Wet deposition

- Namelist: atm_in

```
&wetdep_inparm
 gas_wetdep_list              = 'ALKOOH', 'BRONO2', 'C2H5OH',
    'C2H5OOH', 'C3H7OOH', 'CH2O', 'CH3CHO', 'CH3CN', 'CH3COCHO',
    'CH3COOH',
  'CH3COOOH', 'CH3OH', 'CH3OOH', 'CLONO2', 'GLYALD', 'H2O2', 'HBR',
    'HCL', 'HCN', 'HCOOH', 'HNO3', 'HO2NO2', 'HOBR',
  'HOCL', 'HYAC', 'HYDRALD', 'ISOPNO3', 'ISOPOOH', 'MACR',
    'MACROOH', 'MEKOOH', 'MVK', 'NH3', 'ONIT', 'ONITR',
  'POOH', 'Pb', 'ROOH', 'SO2', 'TERPOOH', 'TOLOOH', 'XOOH'
 gas_wetdep_method            = 'NEU'
/
```

- Changes to be made in the code
  - models/atm/cam/src/chemistry/mozart/mo_sethet.F90
  - models/atm/cam/src/chemistry/mozart/mo_neu_wetdep.F90