CICE Development Timelines

The path towards CESM2 and CMIP6

- **2014 Winter**: Breckenridge
  - Implement CICE5 within CESM1.2
  - Coupled control run with CICE4 options

- **2015 Winter**: Breckenridge
  - Test CICE5 Options in coupled control runs, compare to CICE4
  - Physics/Resolution decisions for CICE5

- **2016 Winter**: Breckenridge
  - CICE5 released (functional?)

- **2016 Winter**: Breckenridge (CESM2)
  - Coupled Runs with CICE5 final configuration
  - CICE5 released in CESM2 for CMIP6
CICE5 options to test

- Mushy thermodynamics (prognostic salinity) - Run in progress
- Form drag (not expensive, “no brainer”)
- Melt ponds (as long as you have one it doesn’t make a huge difference which one in stand-alone CICE tests). Options: level ice (more expensive but more accurate in a changing climate), topo (based on present day observations)
- Anisotropic rheology (4-5x increase in cost and changes solution so it will require re-tuning the model, is it worth it?)
- Other parameters in CICE5 (Elizabeth)
- Skeletal Layer BGC (skl-BGC) parameters

- BGC aerosols including iron – coupling to the ocean?
- Vertical BGC + new aerosols (zBGC) -- summer 2014 in CICE5
- Coupling to ocean (all BGC)?

- Number of thickness categories (more resolution in thicker ice bins?)
- Number of vertical levels (7 evenly spaced, more?)