

# Science Drivers for FELs

- What parameters are worth fighting for?
- What photons enable edgiest science?
  - 900eV vs 1 keV vs 1.2 keV, 12 keV,...etc
  - Polarization
- What pulse lengths...?
  - 1 ps, 100 fs, 10 fs, 1 fs, 100 as,...
- What bandwidth?
- What rep rate...?
  - 1 kHz, 10 kHz, 100 kHz, 1 MHz,..., 1 GHz
- What photon numbers/pulse are useful/tolerable?
- Fluence (joules/area)?
- How important is coherence
  - transverse, longitudinal, degeneracy
- See this as a multidimensional matrix, with some elements highlighted