

November 6, 2015
MSE 2101 topics

- 4+ billion years ago: early microbial evolution
 - anaerobic chemoautotrophs
- 3.5+ billion years ago: rapid diversification
 - evolution of photosynthesis in steps
- 2.5 billion years ago: initial oxygen buildup
 - everything balances everything, adaptation rules!
- 2.1 billion years ago: first cell nuclei; symbiotic relationships
 - complex structures → more diversity
 - compartmentalized structure, mitochondria, chloroplasts
- 1.2 billion years ago: first multi-cellular eukarya
 - repeatable independent evolution
- 542 million years ago: the Cambrian explosion
 - 30 phyla within ~40 million years
 - clues for sudden, unrepeated diversification?
- 475 million years ago: the colonization of land
- 245 million years ago: hello, dinosaurs!
- Impacts and extinctions
 - 65 million years ago: the K-T boundary layer
 - the frequency of extinctions of this magnitude?
 - the frequency of 10-15km body impacts?