Mycology - study of fungi

**KINGDOM FUNGI**

- **PHYLUM CHYTRIDIOMYCOTA**
- **PHYLUM ZYGOMYCOTA**
- **PHYLUM ASCOMYCOTA**
- **PHYLUM BASIDIOMYCOTA**

**BASIDIOMYCETES**
- **HYMENOMYCETES**
- **GASTEROMYCETES**
- **TELIOMYCETES**

**USTOMYCETES**

**CHARACTERISTICS OF ALL FUNGI**

- More than 70,000 species
- Heterotrophic thallus (lack vasculature)
- They live everywhere!
- More closely related to animals than plants
  - Cell wall: Chitin
  - Storage molecule: Glycogen
  - Asexual and sexual reproductive mainly by spores
  - Principle decomposers necessary for continued life
  - Composition: hyphae (aseptate/ septate) mycelium

**CHYTRIDIOMYCOTA: CHYTRIDS**

- Roughly 790 species
- Mostly aquatic and coenocytic
- Believed to have evolved from protists
- Only phylum with fagellated spores and centrioles
- Alteration of generations: sporic meiosis

**ZYGOMYCOTA**

- Roughly 1,060 species
- Most saprophytic, can be parasitic
- Form symbiotic associations with plants
- Rhizopus and Choanephora are different genera of zygomycetes that cause disease in living plant tissue.
**ASCOMYCOTA**

- Roughly 33,000 species
- Many plant pathogens
- Many yeasts
- Most of the lichen-forming fungal species belong here
- Either unicellular or filamentous growth forms
- Some are homothallic and others are heterothallic

**BASIDIOMYCOTA**

- Phylum Basidiomycota: 3 divisions
  - Basidiomycetes
  - Hymenomycetes: Spores produced on special visible hymenium structure
  - Gasteromycetes: Hymenium is enclosed until after spores have matured

**FUNGI FACTS**

- Tolypocladium inflatum: Cyclosporin production prevents rejection of organ transplants
- Many important symbiotic relationships like the fungus “gardens” for ants
- Antibiotics: Penicillin
- Micorrhizal associations
- Food: Wine and beer, cheese

- Bioluminescent fungi native to Brazil
- Chernobyl fungi growth with the production of melanin