Lecture 2 – Protozoa (*Additional notes*)

Protozoa

- Species within the Protist Kingdom.
- Are heterotrophic (Eat other things).
- Possess a membrane-bound nucleus.
- Confined to aquatic habitats.

Protozoa's are divided into four categories segregated based on movement.

Amoeboids

- Protists that change body shape in order to move.
- Expand and contract their **pseudopods** to grip and move, as a consequence body composition changes temporarily.
- **Pseudopods:** Groups of cytoplasm temporarily used as "feet" for movement.
- **Phagocytosis:** Process in which certain cells consume energy (food).
    1. **Recognition:** Detection of microbes using receptors on the cell membrane.
    2. **Engulfment:** Cell morphs around the microbe and traps it within the vacoule for digesting food.
    3. **Intraceullar Killing:** Lysosmes within the cells release antibacterial molecules to kill and digest the microbe, filtering any waste in the process.
    4. **Exocytosis:** Process of waste elimination.
- Can eat from any part of their body.

Flagellates

- **Flagella:** Long hairlike organ, used similar to how fish use their tail to swim.
- Have either a thin **Pellicle** outer covering or a coating of a jellylike substance .
- Reproduce either **asexually** (longitudinal splitting) or sexually.
- Can be either heterotrophic or autotrophic;
- **Zooflagellates:** Heterotrophic , eat use phagocytosis like amoebas.
- **Phytoflagellates:** Autotrophic (produces its own food), contain chlorophyll which allows them to obtain nutrients through *photosynthesis*.

Ciliates

- **Cilia:** Short hairs found around the body of celibates that enable them to move. (Movement similar to a boat)
- Contain two types of nuclei;
- **Macronucleus:** Larger nuclei, handles **all** non-reproductive cell functions.
- **Micronucleus:** Handles reproduction, genes are passed to offspring during reproduction, macronucleus degenerates and a new one is formed from the genes of the micronucleus.

Apicomplexa

- A.K.A **Sporozoa**, because of their ability to form sporelike cells.
- Are **immobile**.
- They are **parasitic**, they rely on a host to latch onto not only for movement but for nutrients as well.
- **Apical Complex:** Organelle used to enter host cells.
  - **Apical Cap:** Tip of the sporozoa.
  - **Rhoptries:** Produce enzymes to ease entry into host cells.
- Similar to viruses, trick host cells using apical complex.