

# Overview of the Six Kingdoms

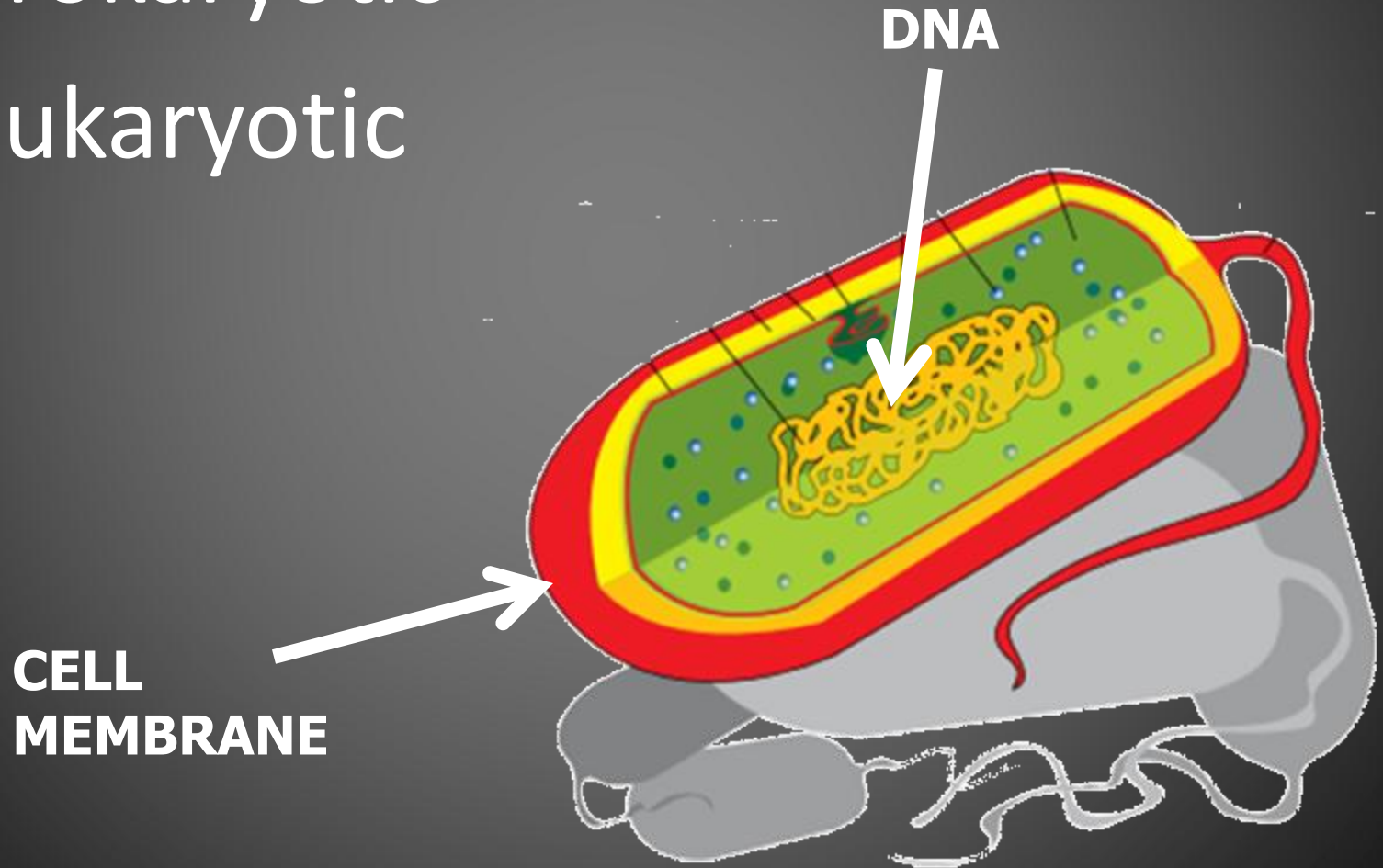
# What is Cell Type?

- Prokaryotic – describes an organism with cells that do NOT have a nucleus
- Eukaryotic – describes an organism with cells that do have a nucleus

1. The organism shown is

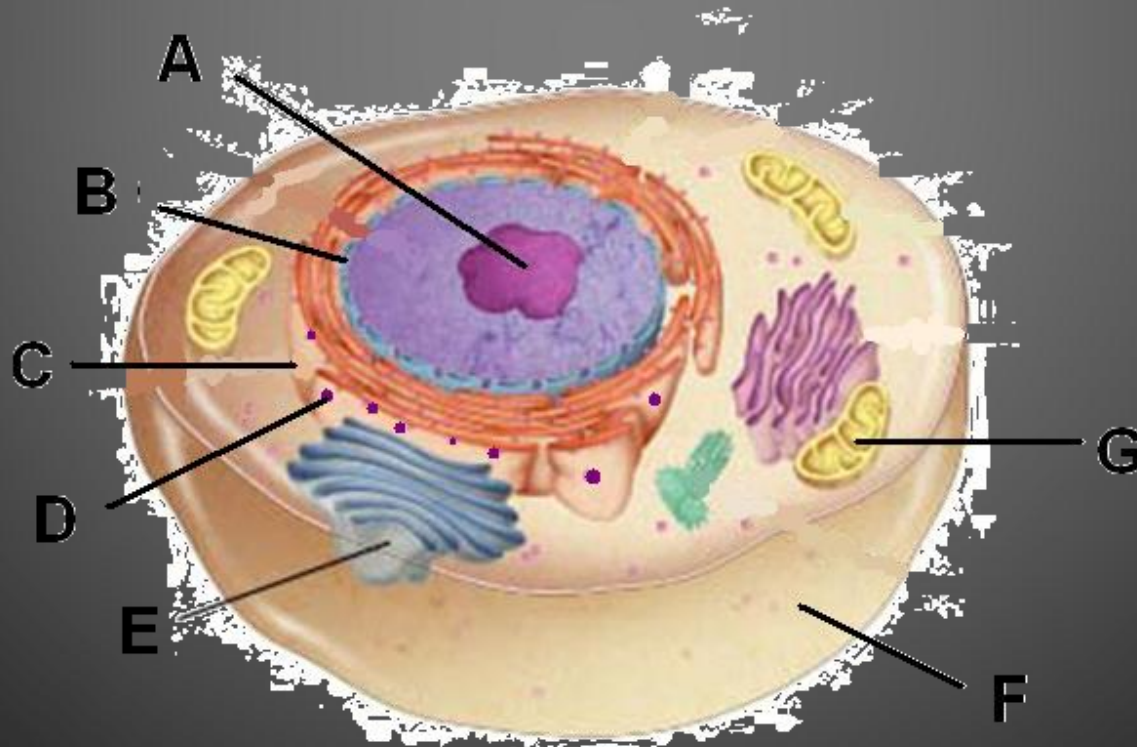
A. Prokaryotic

B. Eukaryotic



# What is Cellular Organization?

- Multicellular – organisms are made up of more than one cell
- Unicellular – organisms are made up of one cell



## 2. The organisms shown are

A. Unicellular

B. Multicellular



# What is Mode of Nutrition?

- Autotrophic – makes its own food
- Heterotrophic – gets nutrients from the food it consumes

3. The organism shown is

A. Autotrophic

B. Heterotrophic



# What is motility?

- Motility is whether or not the organism can move by its own accord. Think locomotion. Growing upright is not consider being motile!





# List of the 3 Domains & 6 Kingdoms

<b>Domain Archaea</b>	<b>Domain Bacteria</b>	<b>Domain Eukarya</b>
Kingdom Archaeobacteria	Kingdom Eubacteria	Kingdom Protista Kingdom Fungi Kingdom Plantae Kingdom Animalia

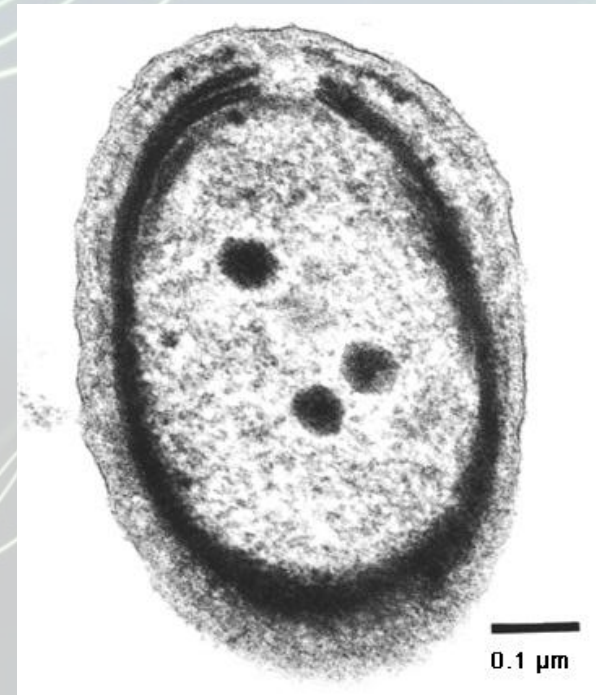
# Kingdom Eubacteria

The background of the slide features several green, rod-shaped bacteria with numerous flagella, giving them a fuzzy appearance. They are scattered across the slide, with some in the foreground and others in the background, creating a sense of depth. The overall color scheme is a mix of green and blue.

- **Cell Type** – Prokaryotic
- **Cellular Organization** – Unicellular
- **Mode of nutrition** – Autotrophic or heterotrophic
- **Reproduction** – asexual
- **Motility** – some are motile
- **Cell Wall** – Thick cells walls with peptidoglycan
- **Habitat** – everywhere!!! (even inside you)

# Kingdom Eubacteria

- Prochlorococcus – an autotrophic bacterium
- E. coli and strep are also examples



# Kingdom Archaeobacteria

## “extreme bacteria”

- **Cell Type** – Prokaryotic
- **Cellular Organization** – Unicellular
- **Mode of nutrition** – Autotrophic or Heterotrophic
  - Means that some species are autotrophs and some are heterotrophs

# Kingdom Archaeobacteria

## Characteristics

- **Reproduction** – asexual
- **Motility** – some are motile
- **Cell Wall** – cell walls without peptidoglycan
- **Habitat** – live in extreme habitats such as hot springs, geysers, volcanic hot pools, brine pools, black smokers

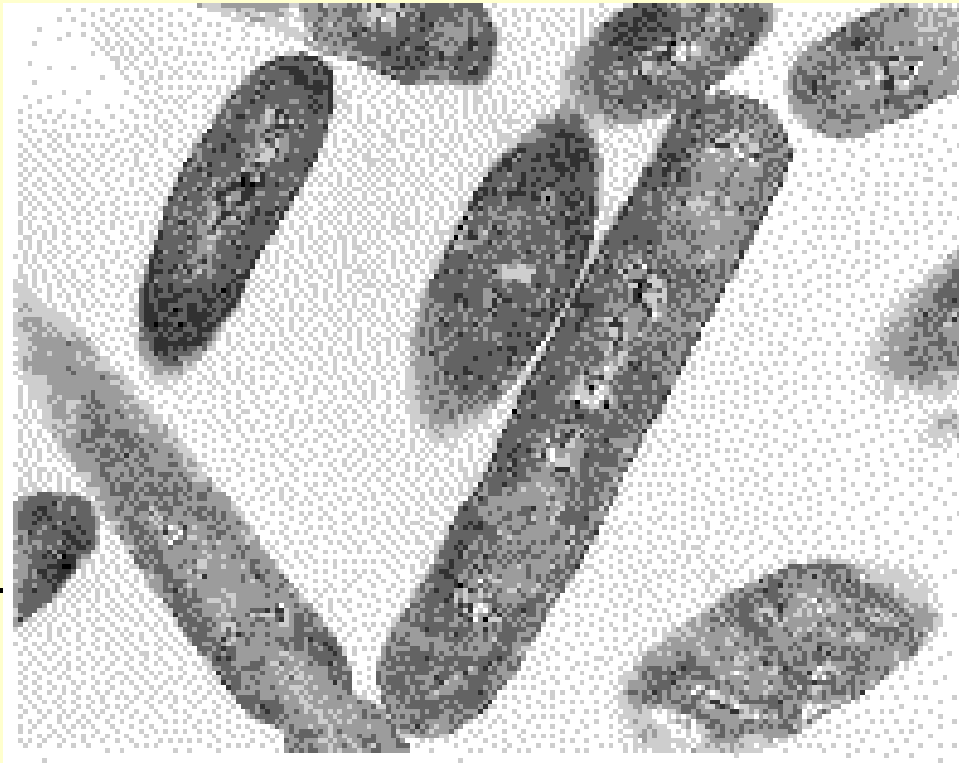
# Kingdom Archaeobacteria



Morning Glory Pool in Yellowstone National Park – note the bright colors from the archaeobacteria growing in the extremely hot water.

# Kingdom Archaeobacteria

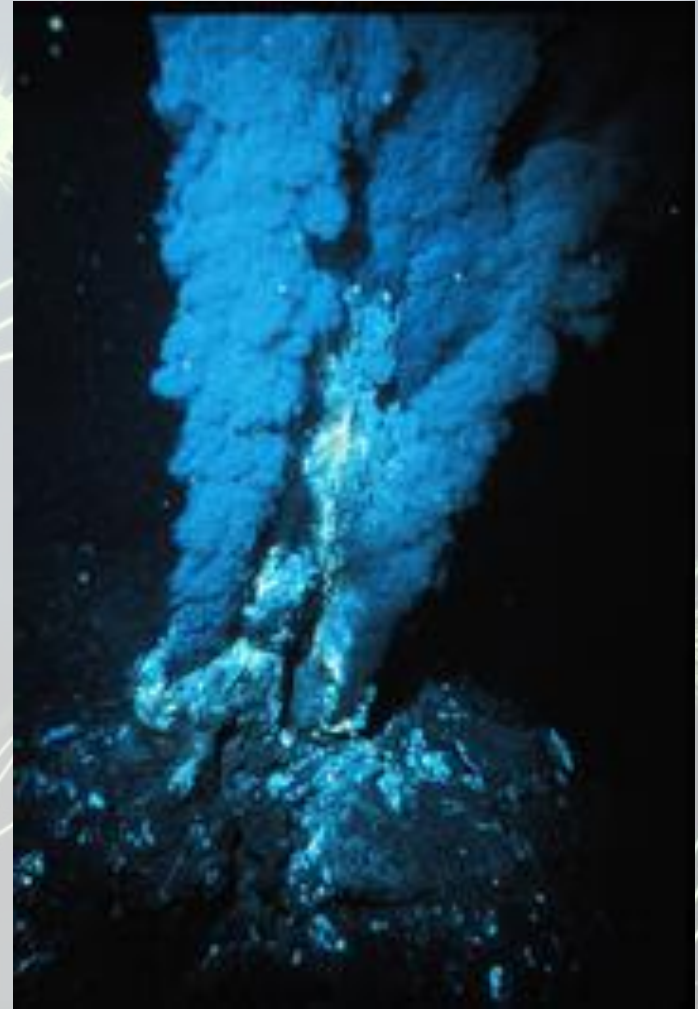
Henry C. Aldrich/Univ. of Florida



*Some like it hot: Cells of  
Bacillus infernus.*

# Kingdom Archaeobacteria

- Archaeobacteria can live deep in the ocean near geothermal vents called black smokers
- There is no light, so they carry out chemosynthesis instead of photosynthesis

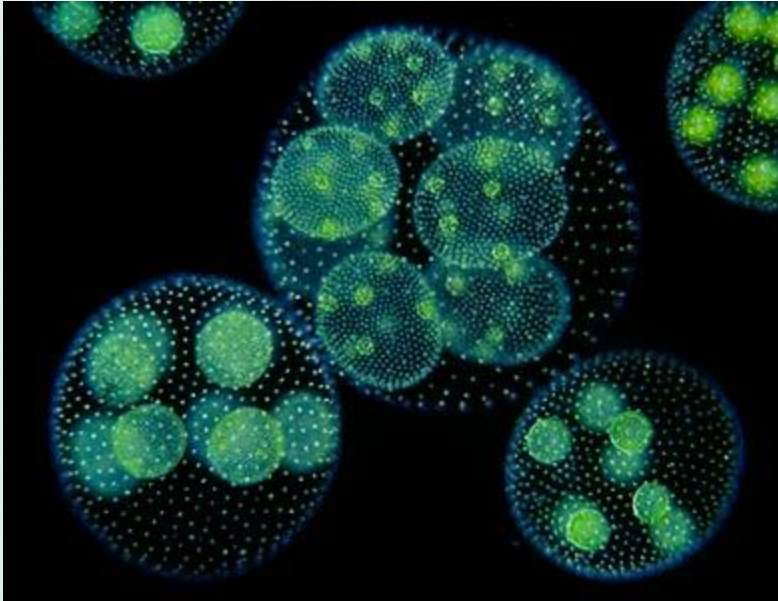




# Kingdom Protista: “Catch All Kingdom”

- **Cell Type** – Eukaryotic
- **Cellular Organization** – Most unicellular, some multicellular
- **Mode of Nutrition** – Auto and heterotrophic
- **Reproduction** – sexual and asexual
- **Cell Wall** – Some with cell walls containing cellulose
- **Motility** – some are motile, some are not
- **Habitat** – all aquatic

# Kingdom Protista



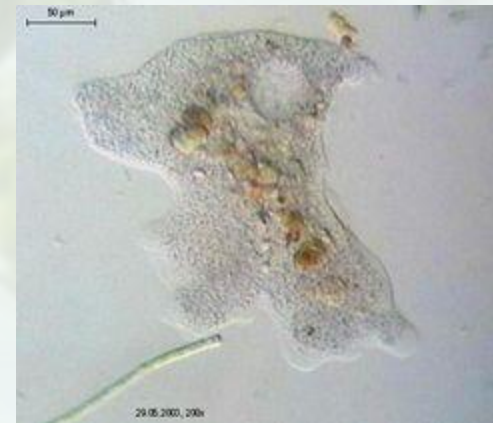
*Volvox* – a colonial protist



A slime mold



*Euglena* - autotrophic



*Amoeba* - heterotrophic

# Kingdom Fungi

- **Cell Type** – Eukaryotic
- **Cellular Organization** – Most multicellular
- **Mode of Nutrition** –heterotrophic  
(decomposers)
- **Reproduction** – sexual and asexual
- **Cell Wall** –cell walls containing chitin
- **Motility** – nonmotile
- **Habitat** – terrestrial

# Kingdom Fungi



Stilton cheese



Bread mold



# Kingdom Plantae

- **Cell Type** – Eukaryotic
- **Cellular Organization** – multicellular
- **Mode of Nutrition** – Autotrophic
- **Reproduction** – sexual
- **Cell Wall** – cell walls containing cellulose
- **Motility** – nonmotile
- **Habitat** – aquatic and terrestrial

# Kingdom Plantae



# Kingdom Animalia

- **Cell Type** – Eukaryotic
- **Cellular Organization** – multicellular
- **Mode of Nutrition** – heterotrophic
- **Reproduction** – mostly sexual
- **Cell Wall** – none
- **Motility** – all are motile
- **Habitat** – aquatic and terrestrial

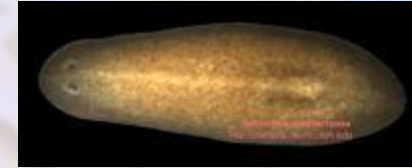
# Kingdom Animalia



Sponge



Jellyfish



Flatworm



Coral snake



Bear



Octopus