

## Identifying Bacteria and Viruses

- Methods for Identifying Bacteria
  - Morphology
    - Better suited for eukaryotes
  - Differential staining
    - Gram stains
    - Acid-fast stains
  - Biochemical tests
    - Tests for the presence of certain enzymes
  - Molecular Genetics Tests
    - PCR, rRNA sequencing, RFLP
- Bergey's Manuals
  - Determinate Bacteriology
    - Arranged by phenotypes
    - Emphasis on identification
  - Systematic Bacteriology
    - Focused on phylogeny
    - More in-depth
- Dichotomous Keys
  - Flow chart to rapidly eliminate options for microbe identification
  - Asks easy yes or no questions
    - Example: Is this microbe gram positive?
- Classifying Viruses
  - Viruses are acellular
    - Requires own classification
  - Classified by shape and genetic code
    - RNA vs DNA
    - Single stranded vs double stranded
    - + or – RNA strand
  - Grouped into families
    - Example: orthomyxovirus
  - Grouped into species
    - Example: influenza
  - Grouped into strains
    - Example: influenza A
  - Grouped into subtypes
    - Example: influenza A H1N1