Microbiology—Reading and Study Guide Week 1

**Reading Assignments:**

Chapters 1 and 3

**Study Highlights for Chapter 1:**

1. What is the Golden Age of Microbiology?
2. Explain the process of the Scientific Method.
3. Understand the contribution of each of the following to our knowledge and progress in microbiology:
   1. Redi
   2. Needham
   3. Spallanzani
   4. Pasteur
   5. Buchner
   6. Koch
   7. Hans Christian Gram
   8. Semmelweis
   9. Lister
   10. Nightingale
   11. Snow
   12. Jenner
   13. Erhlich
4. What are Koch’s Postulates? Why are they important?
5. What is the Germ Theory?
6. Define: Microbe (microorganism)
7. Define: virus
8. Define: bacteria
9. Define: protozoa
10. What is unique about viruses (vs. bacteria)
11. Why do we study parasites/helminths in microbiology when most of these organisms are not microscopic?

**Study Highlights for Chapter 3:**

1. What are the key differences between prokaryotes and eukaryotes?
2. What are archaea?
3. Understand the cell shapes and patterns.
   1. Bacilli (multiple subtypes)
   2. Cocci (multiple subtypes)
   3. Spiral (multiple subtypes)
4. Which structures make up the cell envelope?
5. What is the glycocalyx? Slime layer? Capsule?
6. What is the role of the cell wall to the bacterial cell? How does the cell wall help to characterize bacterial subtypes?
7. What is the cell membrane? What is selective permeability?
8. What is cytoplasm?
9. What are plasmids and how do they play a role in bacterial survival?
10. What is an endospore (when might these form?)
11. What are vegetative cells?
12. What are flagella?
13. What is chemotaxis?
14. What are pilli? What are the functions of pilli?
15. What qualities make *Mycoplasmas* “atypical?”