

## MICROBIOLOGY ORAL TOPIC SUGGESTIONS [Fall 2010]

### Current diseases or events:

Anthrax  
Antimicrobial cleaning products  
Antimicrobial resistance  
Astro microbiology (microorganisms in space)  
Avian flu  
Biofilms  
Bioterrorism and Microbiology  
Cholera (*Vibrio cholera*)  
CMV (cytomegalovirus virus)  
Ebola  
Emerging infectious disease and disease trends  
H1N1 Swine Flu  
Hantavirus (originally made news as "four corners disease from New Mexico)  
Helicobacter pylori (causes ulcers)  
Hepatitis  
Herpes Simplex Virus  
HIV  
Legionella  
Listeria  
Lyme disease  
Mad Cow disease (BSE)  
Malaria  
Meningitis  
MRSA (methicillin resistant *S. aureus*)  
Necrotizing fasciitis - "Flesh Eating Disease" [believed to be caused by *S. pyogenes*]  
SARS  
Sick house or building syndrome  
STD's (sexually transmitted diseases)  
TB  
Toxic shock syndrome (originally caused by *S. aureus*)  
Valley Fever  
Vancomycin resistant *S. aureus*  
Vancomycin-resistant enterococci (VRE)  
West Nile Virus  
Whooping cough outbreak

### Historical Developments in Microbiology:

Leeuwenhoek's microscope  
Pasteur  
Hooke  
Dr. Ehrlich's Magic Bullet  
Significant events or milestones in Microbiology in the last 100 years

### Disease of the past:

Iris potato famine  
Small Pox  
Bubonic Plague  
Pandemics

### Diseases associated with the environment:

Red Tide (dinoflagellates)  
Giardia (parasite found in local waters)

## MICROBIOLOGY ORAL TOPIC SUGGESTIONS continued

### Current techniques in Microbiology:

- ELISA
- EM (electron microscopy)
- Immunological techniques (agglutination, fluorescent antibody, etc.)
- Biochemical tests - rapid methods
- Bacterial nomenclature (Systematics)
- Molecular techniques (probes, PCR, etc.)

### Food Microbiology:

- Milk pasteurization
- Milk fermentation
- Fermented Products: Beer, Wine, Yogurt, Sauerkraut
- Food spoilage:
  - Salmonella in eggs
  - Staphylococcus (in mayonnaise)
- Shelf life of food
- Food preservation
- Diseases associated with food:
  - E. coli* O157: H7 (Jack in the Box hamburgers)
  - Botulism

### Beneficial or symbiotic uses of microorganisms:

- digestion of milk in ruminant animals
- digestion of wood in termite guts
- nitrogen-fixing plant symbionts
- bioremediation
- oxygen production by photosynthetic microorganisms (algae)
- recycling of nutrients by bacteria
- use of bacteria in agriculture - pesticides

### Miscellaneous

- Ecology: Bacterial responses to ultraviolet light
- Salton Sea
- Fungi and molds and yeasts: *Candida albicans*, *Stachybotrys* black mold
- Valley Fever
- Gangrene
- Parasitology: *Cryptosporidium*
- Salmonella and *Shigella*
- Campylobacter*
- Toxins
- Water microbiology (marine and drinking)
- Mummies tomb toxins
- Ancient bacteria
- Bacterial Cybernetics
- Germ warfare

These are suggestions to start you thinking about the large number of topics in Microbiology  
You are not limited to the ones listed. More suggestions are welcome.

Have Fun!