

BILD 87: Mighty Microbes

Instructor:

Prof. Milton Saier
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Room 4254
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Schedule:

Tuesdays 1:00 – 1:50 pm (Followed by further discussions after class).

Location:

Room 3880 AP&M Building, annex.

Organization:

There will be no exams, but attendance and participation in class will be taken into consideration for the final grade.

Content:

1. The Diversity of Life on Earth
2. The Three Laws of Biology
3. Molecular Evolution: From Darwin to Metagenomics
4. Cell Polarity/ Cytoskeleton
5. Bacterial Motility
6. Chemotaxis
7. Sensing Physical Forces
8. Cell Recognition/Bacterial Adhesins
9. Bacterial Energetics
10. Bacterial Differentiation
11. Bacterial Organelles
12. Protein Machines & “Organelles”
 - a) Proteosomes
 - b) Chaperonins
 - c) Metabolomes
13. Protein Secretion Systems
14. Quorum Sensing
15. Bioelectricity; Nanowires
16. Bacterial Biological Warfare
17. Circadian Rhythms
18. Photosynthesis and Bacteriorhodopsin
19. Persistence
20. Metastability & Stochasticity