

How to Earn Optional Points
MICROBIAL DIVERSITY
January 2009

In Microbial Diversity, you have the option of earning up to ten 'optional points' over the course of the semester. These will be added to your total points for the term before final letter grades are awarded in May. There is no penalty for not earning optional points, but I hope that you will take advantage of these opportunities. Your options include various enrichment activities that will make your experience in this course more comprehensive.

Each activity is worth 2 points. You may engage in up to five activities for a total of 10 points. Of course, if you're interested in doing more, please do. Treat this as a gateway to microbial resources online, in town, and at the UofA.

1. Take a tour of the University of Arizona Mycological Herbarium. (2 points)

The University of Arizona Mycological Herbarium is located in Herring Hall, and contains over 40,000 samples of fungi and fungus-like organisms (e.g., slime molds). As Curator, I will introduce you to the diversity of the collection, and to the methods used to curate and archive fungal specimens. Plan on a one-hour commitment.

Please email me ARNOLD@AG.ARIZONA.EDU to suggest a time for a tour. I will broadcast your proposed time to the class.

2. Attend a seminar on a microbiology-related topic held by a University department, and summarize the seminar in a half-page writeup (single-spaced, typed). (2 points)

Here is an upcoming opportunity/example. I will update you on additional opportunities throughout the semester. Each seminar or other 'official' function (sanctioned by me) + writeup = 2 points. Occasionally, seminars will be difficult for you to understand, as the topics are often specialized. Give it your best attempt – and you'll walk away having learned something new.

Tuesday, Feb. 24 *4pm* *Marley Auditorium*
Dr. Christina Cuomo, Broad Institute: "Comparative genomics of fungal pathogens"

3. Read and review an article in the news regarding a microbe-related topic (one page; single-spaced; typed). (2 points)

Articles must be substantial. Your review should be one page long, single spaced, and should summarize the article, highlight how it relates to a topic discussed in class, and include two questions that came to mind for you when reading the article. You will have the option to tell the class about your article. Please choose wisely; very 'light' and very short articles will not merit two full points.

4. Read and review a scientific article from a scientific journal (one page; single-spaced; typed). (2 points)

Please approach me with the article to discuss its appropriateness before completing your review.

5. Visit, explore, and describe the content of five websites focusing on microbial diversity, ecology, and evolution (2 points).

Provide a short paragraph about the content and one or more interesting facts from each page (total for two points: up to five summary paragraphs and five or more interesting facts). Here are some examples of places you might go:

World Data Center on Microorganisms: <http://wdcm.nig.ac.jp>
American Society for Microbiology: <http://www.asm.org>
Astrobiology Institute at Woods Hole: http://microscope.mbl.edu/baypaul/microscope/general/page_01.htm
All about Archaea: <http://www.archaea.unsw.edu.au/>
About extremophiles: <http://extremophiles.org/>
Introduction to fungi: <http://www.ucmp.berkeley.edu/fungi/fungi.html>
Understanding eukaryote relationships: <http://www.ucmp.berkeley.edu/allife/eukaryotasy.html>
Microbe zoo! <http://commtechlab.msu.edu/sites/dlc-me/zoo/index.html>

6. Watch at least five of the neat virology and microbiology videos available online, and provide a list and at least half-page description of what you watched (one page; single spaced; typed) (2 points)

You can do this in two ways: on your own or a public computer, or by visiting the Herbarium at an appointed time (you can set up an appointment and use our computers to view the films). You can find these videos here: <http://www.virology.net/Video.html>

Note that the movies are in Quicktime format (.mov).

7. Read and summarize one of the microbiology-related features available through the American Phytopathological Society (2 points; maximum of three summaries for credit; one page each, single-spaced; typed)).

Introduced virus in citrus! <http://www.apsnet.org/online/feature/HLB/>
A photo-activated toxin in plant disease! <http://www.apsnet.org/online/feature/Cercosporin/>
Viral diversification! <http://www.apsnet.org/online/feature/btabaci/>
Soybean rust: it's closer than you think! <http://www.apsnet.org/online/feature/sbr/>
Snow-molds! <http://www.apsnet.org/online/feature/snowmold/>
Toxic molds! <http://www.apsnet.org/online/feature/stachybotrys/>
Bacterial genomics! <http://www.apsnet.org/online/feature/Genomics/>
And more! <http://www.apsnet.org/online/feature/>

8. Explore the 1918 influenza epidemic online using the website listed below, and write a one-page summary of what you learn. (2 points) <http://www.pbs.org/wgbh/amex/influenza/>

9. Visit Dr. Arnold's lab and learn about fungal endophytes.

Learn what we do to collect microbes from the far reaches of the globe, and how we use them to explore the diversity of life at the molecular, biochemical, and species levels. Plan on a half-hour commitment; by appointment only.

10. Do you have a good idea? Let's talk. I'm open to helping you follow your interests as a means to enrich your experience in Microbial Diversity.