

Course Information: Introduction to Microbiology (BY 107) – Colorado College

Type: PowerPoint seminar

Professor Phoebe Lostroh

Level: 100

An introductory biology course that fulfills one of the 100-level requirements for majors but is often taken by non-majors. I also teach an expanded 2-block course as a First Year Experience, in which case this assignment is spread out over two blocks and the course includes an extensive discussion of the scientific method as it applies specifically to biology.

Block Plan Context:

	S	M	T	W	R	F	S
1							
2							
3							
4							

Important Features of the Assignment:

- Staging helps introductory students budget time
- Working in pairs requires collaboration
- Requires students to go beyond course materials
- Requires both primary and secondary sources

Description of Assignment:

This is excerpted from a syllabus and so is addressed to students. Your Favorite Microbe (YFM) As mentioned in the course syllabus, you and a partner will adopt a single microbe for this block, eventually presenting what you have learned in a powerpoint talk at the end of the course.

In lecture, we will cover *Neisseria gonorrhoea*, *Chlamydia trachomatis*, human immunodeficiency virus, influenza virus, hepatitis B virus, human papilloma virus, herpes simplex I, herpes simplex II and *Plasmodium*, so you may not choose one of these microbes as the topic of your presentation. You may choose any other microbe (virus, bacterium, archeon, or eukaryote). You will probably find it easiest to get information about YFM if it causes disease, particularly human disease. Interesting microbes not associated with human disease but nevertheless documented in accessible literature can be found in chapters 22, 23 and 24 in your textbook. Links to internet resources that will help you can be found on our course web page.

You will give a formal 15-minute presentation on YFM. You should imagine that you are giving this talk as part of an important job interview. Distracting sounds and animation are not appropriate. Dress for success. Include the standard information microbiologists expect, such as its Gram stain, motility, habitat, nutritional requirements, etc. (You will become very familiar with these standard facts as you browse the literature.) The bulk of your presentation, however, should discuss YFM's unique attributes. You could, for example, try to convince us that YFM ought to win a popularity contest, or maybe that the world would be a better place without it. Throughout, you should try to integrate information we covered in the course. For example, we will spend several class periods on the genes and genomes of bacteria. Is there anything unique about YFM's genome? Be creative! Be adventurous!

To find references for this work, use Tutt Library. Make an appointment with a reference librarian for help. Go to Tutt Library online and click Article/Information Databases. Then click “Databases by subject” and next Biology. You now have a variety of options. To find articles written for a more general audience, click on “General Science Abstracts”. Here, you will find great resources published in journals such as Scientific American. Another excellent resource is the Nature Encyclopedia of Life Sciences. Articles in ELS are reviews written by experts but aimed at a novice audience. You can get to the ELS by going to Biology Databases (as above) but then clicking on “Encyclopedia of Life Sciences”. To find an original research article written for the research community, click on “Medline”. This database allows you to restrict your search to journals for which we have institutional subscriptions, or articles with free text available electronically. This way you will only find articles that you can get immediately. Just check the “Limit availability to subscriptions held by Tutt library” before entering your search strings. It is always best to try to use the most-respected journals possible. For microbiologists in the U.S., these journals include: The Journal of Bacteriology, Applied and Environmental Microbiology, Infection and Immunity, Molecular Microbiology, Environmental Microbiology, Science, Nature and Proceedings of the National Academy of the Sciences. We have immediate access to most articles from these journals; Science is available in print while the others are all available online through Tutt Library. There are several new online-only journals with free access that also publish high-quality work. These include PloS (the Public Library of Science, <http://www.plos.org/index.html>) and BioMed Central Microbiology (<http://www.biomedcentral.com/bmcmicrobiol/>). Links to these journals are available through Tutt Library. The Annual Reviews series may also be useful to you, and again I encourage you to click the box restricting your search to articles for which we have instant access. If any article is available to you as an HTML file instead of a PDF, you may use figures from the HTML file in your powerpoint presentation, as long as you reference them. To capture a figure from an HTML file on an IBM, you right-click on the link to the figure and choose “save as”. Alternatively, you can usually click on a figure and then select it, simply choosing “copy” and then “pasting” it into MS Powerpoint.

I assume similar processes work on a Macintosh, but I don’t know the keystrokes. If you want me to show you how to do this, make an appointment with me DURING WEEK 2, and I will show you. If this is the first time you have used the library for this kind of searching, please ask a reference librarian to help you. It will go much faster and you will end up happy instead of exhausted and frustrated.

You should reference at least three sources outside our textbook, and one of these sources should be either an original research paper or a review written by scientists for other scientists. Reviews of this type can be found in the “annual review” series above. The American Society for Microbiology also publishes a series of professional journals that include monthly minireviews of this type, and I will put a link to these references on ERes. If you are not sure whether a source is a review written for scientists, ask me. Articles in the Nature Encyclopedia of Life Sciences would also count, as long as they are rated “advanced”.

A link on our course web page connects you to the Journal of Bacteriology’s requirements for proper citations. You should use the J. of Bacteriology format for all of your citations. Use this

format in the Progress Report (described below) and use one of the final Powerpoint Slides to show us the references in your talk.

Rehearse your presentation and make sure it is 15 minutes long. You will have 5 minutes to take questions from your classmates. I expect everyone to ask at least two questions of their classmates.

Choosing a partner

The entire YFM project is done in pairs. Tell me your partner by e-mail by 5:00 p.m. on Friday, 26 February. Outlook will automatically assign the correct date and time to your submission: send the e-mail before 5:00 p.m.!! No points will be awarded for late submissions. My e-mail address is plostroh@coloradocollege.edu.

Choosing a topic

One of you should e-mail me the name of YFM, dated/timed before 5:00 p.m. on Monday, 5 March. No points will be awarded for late submissions.

Progress report/reference list

One of you should e-mail me a list of your references as well as a summary of your progress using those references. What important information is in the resource? Why are you using this source? The summary should include the full citation for every reference as well as the critical pieces of information from that reference. Simple lists of references will be awarded only 2 of the 5 points. This report must be e-mailed to me before 5:00 p.m. on Thursday, 8 March. No points will be awarded for late submissions.

Outline

Outlines should give me the title for every slide, which should of course be the main point of that slide. For slides that are pictures/figures, the outline should give me the title of the figure and tell me the main point of that figure. These are due as e-mails or as MS-word document attachments to an email, dated/timed no later than 5:00 p.m. on Friday, 9 March.

Asking two questions of other classmates

Every pair will entertain questions about YFM for up to 5 minutes following their presentation. You must ask at least two good questions of other pairs. Good questions (insightful, thoughtful questions that indicate you were paying attention to the talk) will be awarded 5 points. Poor questions (example: asking a question that was answered in the course of the talk itself) will be awarded fewer than 5 points.

The presentation itself

You should split up the talking responsibilities so that each of you does about half. Good presentations should use slides with single pictures/figures and not too many slides of text. You don't want your audience to read a complicated text slide instead of paying attention to your talk. The smallest font allowable on any slide is 20 point, so choose your words carefully. If you need to have notes when you speak, as I sometimes do during lecture, add them to your Powerpoint using the "notes" function, and then print a copy of the notes for yourself. I am happy to show you

how to do this, if you stop by my office **any time before week 3** of the course. Your last slide should be the references. You may use smaller font on this slide if that is necessary to display all of the references. The format for references is described on the references link from our course web page and is also described in our lab manual materials.

I will announce how to load your talks onto the computer in class. The paraprof will help you.

Print a copy of your presentation by using “print” and clicking on “handouts” and “6/page”. Bring it to the talk, as I will use it when grading. **STAPLE IT TOGETHER. I WILL NOT HAVE A STAPLER IN CLASS OR IN MY OFFICE.** Buy a stapler of your own. There is no time like the present...

Please come talk to me if any part of this assignment is confusing or vague. I’m happy to help.

Good luck! I look forward to seeing your presentations.

Timeline:

Wk	<i>Monday</i>	<i>Tuesday</i>	<i>Wednesday</i>	<i>Thursday</i>	<i>Friday</i>	<i>Weekend</i>
1				30 minute Quiz 1	YFM pair; lab 1 title, results & calculations (2-4 pages) due at 5:00 p.m.	
2		Quiz 2		Lab 2 title, results and calculations (2-4 pages) due	Quiz 3	
3	YFM topic due	Quiz 4	Lab 3 title, results, calculations and discussion (3-5 pages)	YFM progress update	<i>Quiz 5 in class;</i> YFM outline due At 5:00 pm.	
4	YFM seminars	1:00 p.m. lab 4 Title, introduction results, calculations, methods, discussion (6-8 pages)	Final comprehensive exam			