BGYD17 Seminars in Cellular Microbiology
Course Outline 2013

Cellular microbiology is a new discipline that combines two different fields, cell biology and microbiology to study the interplays between pathogenic bacteria and mammalian cells. This seminar course will offer an overview of the basic and most significant advances in cellular microbiology. The curricula will include the study of bacterial pathogenic mechanisms, including the effect and mechanisms of bacterial virulence factors, bacteria attachment to mammalian cell surfaces and bacteria invasion of mammalian cells. At the end of the term, it is expected that students will be familiarized and able to understand scientific literature in the field of cellular microbiology.

No textbook will be required. Instead, the students will be provided with selected research papers and reviews on pathogenic microorganism and will receive introductory lectures in selected topics relevant to the field.

Students will form working teams that will be assigned with research papers. Teams will elaborate a brief (2-3 pages) report and present an introductory short and long seminar on the assigned material with an open discussion in class. The material elaborated by the seminar teams will be uploaded to Intranet and will be available before each presentation. Also, students will have to write individually 3 assignments on scientific papers.

A course calendar with the schedule for assignments, lectures and presentations will be available on the intranet by Monday, Jan 10th

Course structure and grading:

Lectures

Lectures will be provided during the first weeks of class, total time: 6h . The lectures are aimed to introduce the students to Cellular Microbiology; theoretical and methodological concepts relevant for the field will be discussed, including material for the assignments. Lecture slides will be uploaded to the intranet the day before the lecture take place.

Assignments

You will have to answer 3 assignment questioners on related research articles on virulent mechanisms from the bacteria Salmonella Typhimurium's.
The assignments will consist on 10-15 questions that must be answered individually and e-mailed to your T.A as a PFD file by the announced deadline.

Each assignment will contribute to 10% of your final grade

Seminar Presentations

attendance to the seminars is mandatory.

Students will be divided in 8 groups. Each group will have to present one research article twice, in the **10 min introductory seminar and in the full seminar presentation day**. -
Presentation modality: power point slides.
Papers for presentation will be assigned to each team in the first week of class.
Every integrant of the presenting team must participate in the preparation of the seminar, during the presentations and answering Q's from the audience.

Short presentation day:
On the 3 or 4th week each group will present a 10 minutes presentation (8 power point slides) on their seminar paper. What should you include there? Introduction background, hypothesis and main objectives of the paper.
Each presentation will be followed by a 2 min question period.
Will contribute to 5% of your final grade

Full-Seminar presentations day:
-Each group has to deliver a 45 minutes presentation on the group day which will be announced in the course calendar. Tolerance + 10 min. The seminar will be followed by a 45 minutes questions and discussion period.

What will be requested from each seminar presenting group?
You will need a laser pointer and to arrive in to the classroom in advance to set up for your presentation. A PDF of your power point presentation together with a 2 pages summary on the paper (single space) + figures in separate pages must be mailed to the TA 2 days before the presentation day, otherwise would be negatively considered in the group's final mark. The summary should be very, very, very clearly written and proof-read. Your classmates will study from these materials which I will be posted on the course page.
The seminar presentation will contribute 25% of your final grade

What do I expect from the audience groups?
Each audience team will prepare 5 questions for the presenting group and will emailed to the TA 2 days before the presentation.
Audience groups will ask as many questions as time allows, in rounds of 1question per group.
The questionnaire will count in the final group participation mark.

Participation
Discussion and participation is crucial for the dynamics of a seminar. So,...you must discuss and speak up your opinion in class! Sorry, I will ask questions to both the audience and the presenting groups.
Audience and presenting groups will receive a participation mark
Participation will contribute to 10% of your final mark

Final Exam
The final exam will contribute to 30% of you final grades

Modality: short answer questions. You will ask to read and analyze a scientific paper and answer an assignment like questionnaire in 2h on the day of the exam. You will receive the paper for the exam 72h in advance. You can read and discuss it alone, with your course fellows or family. You can bring and consult your notes on the paper during the exam . However, the exam must be written individually .

In summary

- **Assignments will contribute to 10% of your final grade (total 30%)**
- **The seminar presentations will contribute 25% + 5% of your final grade**
- **Participation will contribute to 10% of your final mark**
- **The final exam will contribute to 30% of you final grades**

Office hours: Friday 2-3h. My office is in Room SW-535 (Science building) or by e-mail terebiznik@utsc.utoronto.ca.

Some directions and considerations for the presentations.

adapted from http://130.15.90.245/tips_for_a_great.htm

Scoring Rubric for Seminar Presentation

Clarity (20%)

Well thought out
Use of proper language
Significance clearly stated
Subject properly introduced

Poor 1 2 3 4 5 excellent

Style and delivery (20%)

Proper use of the time
Good pacing
Doesn't read
Logic flow of the speech

Poor 1 2 3 4 5 excellen

Use of visual aids (20%)

Size and labels are clear
Very little text
Figures are imaging are described correctly
Well placed images

Poor 1 2 3 4 5 excellent

Content (20%)

Correctly identifies the hypothesis
Has understanding of the experimental approach and significance
Critically evaluates results, methodologies and conclusions
Integrates results to a broader context
Identifies future avenues of investigation

Poor 1 2 3 4 5 excellen

Ability to answer questions (20%)

Understand audience questions
Anticipates audience questions
Can integrate knowledge to answer question
Thoroughly responds to most questions

Poor 1 2 3 4 5 excellent

Speak slow, loud and clear. Keep it entertaining. It is important to seek for a logical flow of the material presented.
Be creative and critical. Remember that you are not only presenting to me, you are presenting to the class. You will discuss the paper with your fellows; and a little bit with me too.
Notice that you will be dealing with real science not with textbook material. Therefore, speculation, controversy, discussion, challenging of ideas are part of science and science and papers are not absolute.
Be open-minded and friendly when discussing with your pairs. Listen to the questions and try to answer in a clear way.Make cartoons and use models to help people understand. Keep it simple. The Force will be with you!

Sections in your presentation

Introduction.

Don't jump right the way into the research. Show the big picture in the intro. Introduce the relevance and history of the problem to the audience. Clearly explain the rationale behind the hypothesis of the paper. Use the paper's intro as a guide, use PubMed and internet for material.

Hypothesis and objectives.

Make it clear to the audience, It is usually enunciated in the title.

Methodology.

You must understand the methodology. Comment on the methodological approaches used in the paper and if necessary, explain new techniques that are introduced in the paper, take your time for this. You can have a separate section for the methods or present it as required during the discussion of the results. Give your opinion about the appropriateness of the author's chosen methodology and think of alternative approaches.

Results.

You have to do a good job here. Sometimes papers include a large number of figures and supplementary material. Select the most relevant results for the presentation, considering the time. Present the figures clearly. Use an appropriate size for the graphs and figures. Decompose the original figures in order to keep slides simple

and easy to understand and follow. Make annotations and draw on the figures to highlight what you consider important and will be commented in your speech. Discuss the results being critical, but in a constructive way, so we can learn from it. You can doubt and complain about the results and rational behind each experiments but try to propose alternatives. Pay attention to experimental controls.

Conclusion. Remark on the most important findings and general conclusions brought by the paper; the take home message. Discuss the impact of the paper comparing it with other relevant papers in the field. Always give the team impression. Bow to the class and applause.