

## **BIM6020 – Sujets d'actualité en oncologie moléculaire – 3 crédits**

### **Coordinators for Winter 2013**

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The course consists of a series of weekly seminars. The general themes of each seminar for this winter are shown at the end of this file. Because it is impossible to invite high profile researchers to present seminars prepared specifically for a graduate course on cancer, the research topics of the seminars are not all directly related to cancer, but a substantial number of speakers will emphasise the links between their research and cancer. In addition, we give you the option to write reports about the seminars that interest you most (see below).

Note: This version of the "plan de cours" is provided as a non-official document to help students who are not fluent in French. As per university rules, the French-language version of this document is the official "plan de cours".

### **Course objectives**

There are three main objectives of the BIM6020 course.

The first aim is to improve your communication skills by giving presentations to colleagues who are not experts in the field.

The second objective is to fine-tune your ability to follow the arguments and the results presented in research papers and seminars, as well as exercise your critical judgment in assessing the validity of their main conclusions.

The third aim is to expose you to a broad range of techniques and experimental systems that represent the current state-of-the-art in modern research.

### **Course evaluation**

- 40% of your final mark will be based on the average of two 15-minute presentations that you will make before two seminars (see below).

- 60% of your final mark will be based on six short written reports (see below) and on your attendance at the seminars/oral presentations.

### **Course operation**

**1) Two 15-min presentations (40% of final grade):**

Language of the presentations: We would prefer that you present in English because you will have to learn how to do so during your research career, and so that all your fellow students can understand and participate in the discussion. However, if you don't feel confident to present in English, please indicate the language of your presentation in your E-mail to Pascale Le Thérizien (see below).

Papers that will form the basis of oral presentations: At the beginning of the trimester, you will be randomly assigned **two seminars** for which you will give **oral presentations**. At least a week before each seminar, each presenter will be sent a paper related to the research area of the seminar. We therefore need an up-to-date list of your e-mail addresses. If you change your address during the course of the session, please E-mail Ms. Pascale Le Thérizien ([pascale.le.therizien@umontreal.ca](mailto:pascale.le.therizien@umontreal.ca)) to let her know your new contact details.

At least four days before your oral presentation please E-mail:  
[pascale.le.therizien@umontreal.ca](mailto:pascale.le.therizien@umontreal.ca)

In this E-mail, please tell Pascale whether:

- 1) Your presentation will be in English or in French
- 2) You will bring your own laptop or not
- 3) If you don't have a laptop, please tell Pascale whether your presentation will be prepared on a Mac or a PC.

Pascale will e-mail all the papers for oral presentations to all the students, such that we will all be able to read them before the Monday afternoon student presentations. The specific papers for your presentations will be assigned randomly and the timing of your presentation will be based on your last names.

Content of the presentations: Each week, two students will prepare PowerPoint presentations of **15 minutes** (plus a ~5 minutes question-and-answer period for each presentation). You will be marked down if you take far too little or too much time.

Your oral presentations will be graded as follows:

**40%: A general introduction to the research topic.** Our main criterion for evaluation is that your introduction is very clear and understandable by people outside the field.

**10%: What is the main question that is being addressed in the paper?** Were you able to correctly identify the key questions that the authors sought to address?

**25%: How did the authors address this question? General experimental strategy (no details) and results.** You can use images derived from the paper for this section. You will not have time to present every experiment from the paper, so part of the challenge will be to choose and focus on the experiment(s) that are most important to address the main question that you identified in the previous section. Being selective about the main question and most important test of that question will allow you time to describe this experiment carefully and to explain controls that the authors performed. Your marks will be based on our evaluation of how well you understood and described the experiment(s) in this section. We will also take into consideration how clearly you communicate this information to a group of people who are not experts in this field.

25%: What is one relevant future direction for this paper?

For example:

a) Was the main conclusion reached by the authors supported by the data? If not, please explain why and suggest an additional experiment or an alternative approach that would significantly strengthen the main conclusion of the paper.

b) Assuming that you judge the main conclusion to be correct, briefly describe what could be done (rationale, hypothesis, and approach) to advance this field of research beyond what was presented in the paper.

## 2) Six written reports (60% of final grade):

In order to develop your skills of critical analysis, you will write **six written reports pertaining to the seminars**. These reports will be due at 15h00 the day of the related seminar. Reports received later than this time will be given a zero grade (no exception allowed). You must **send your reports directly to Pascale Le Thérizien** by e-mail ([pascale.le.therizien@umontreal.ca](mailto:pascale.le.therizien@umontreal.ca)).

We anticipate that some seminars will not be of strong interest to you. Therefore, we give you the opportunity to choose which seminars you write a report about. Having said that, *we do not recommend that you skip several weeks without writing any report*. You are entirely responsible for submitting six written reports for the entire course. If you send us fewer than six reports, your final mark will be calculated as if each missing report received a 0 (zero).

Written report format: For each of the six topics that you selected, you must submit a report following the format indicated below. **We will provide you with a pre-formatted MS Word template sheet for your written reports**. The template is divided into sections in which you will be able to provide the information described mentioned below. To ensure that the evaluation of the reports is as fair as possible for all the students, we will not accept any report that does not conform to the outline provided. Your reports will need to be submitted in *Microsoft Word* format by e-mail to Ms Pascale Le Thérizien. We have set the deadline to hand in your written report on the same day as the presentation of the seminar to ensure that you are familiar with the topic discussed by the speaker, in the hope that you make the most of the seminar. Reports submitted after 15:00 will receive a score of zero (no exceptions).

Written report content: The goal of these reports is to demonstrate critical thinking. Your report **should not** be a summary of the paper.

### *Background and Rationale:*

This section should consist of two sentences of Background, the first more general, the 2nd getting more specific about the void in the field you intend to fill. Then the 3rd sentence should state explicitly the rationale as to why it is important to test the specific hypothesis that you propose in the next section. Something like "However, it is not known whether..."

### *Hypothesis:*

It is not acceptable to use a hypothesis made in the paper. (The same holds true for the Rationale section.) Please state an original hypothesis.

It is important that the hypothesis poses an explicit question and is not simply "The authors' findings made with normal cells will be true in cancer cells too." This is as unimaginative as the "The findings will also be true in another species animal model." Such "hypotheses" are unacceptable.

### *Implications:*

This section should not simply contain offhand statements such as "This work will help our understanding of cancer development or provide new ways to treat cancer."

This sort of argument in the "Implications" section will merit poor marks. This may prove to be the case (after many years of hard work), but this is not what we want you to describe in the "Implications" section.

The Implications should relate directly to your predicted results and how they lead to a future round of hypothesis-driven experimental science. How has your proposal (and predicted results) helped move the field forward? Where would it lead the field? Would your expected results force researchers to reconsider the validity of a dogma that was not firmly established by sound experimental evidence? Would your expected results help bridge two areas of research that were not known to be interrelated or connected to each other?

Like the "Rationale" section, the "Implications" is a chance to be persuasive. You need to motivate the reader that your proposed work is worthwhile. In other words, that the project is worth investing time, money and personnel. The implications are not merely a restatement of the specific results that your project might generate if the work (controls and all) is carried out, but in what it will mean to the field.

Imagine yourself as a lab head with limited funding and resources. A student from your lab comes to you asking if he/she should carry out those experiments. As a lab head, before answering your student, you would first ask yourself whether:

1) Is the "Rationale" for doing the experiment reasonable (in other words, is there an important question to be addressed)? In science, it is easy to generate a lot of questions, but you cannot work on everything. Therefore, you have to "pick your battles" by choosing questions that are both important and experimentally tractable.

2) Depending on the possible outcomes of the experiments, what are the "Implications"? If those implications were not important enough, you would most likely advise your student to choose another line of investigation.

### **3) Attendance of the seminars (minus 10% of final grade for each missed seminar, for a potential of -130%)**

Attendance of all the pre-seminar oral presentations and seminars is mandatory. Absence without an appropriate justification (medical excuse or similar), you will lose 10% of your final mark. At the end of each seminar, you will need to sign a presence

sheet in front of one of us. The person holding the presence sheet will be the same who was present during the pre-seminar oral presentations. If you leave the seminar room without signing the presence sheet, you lose 10% of your final mark.

## Evaluation :

40% from your oral presentation and 60% from your six half-page reports + seminar attendance.

Final mark:		Passable	
Excellent		65.0-69.9:	C+ (numerical value : 2.3)
90.0 and above:	A+ (numerical value : 4.3)	60.0-64.9:	C (numerical value : 2.0)
85.0-89.9 :	A (numerical value : 4.0)	57.0-59.9:	C- (numerical value : 1.7)
80.0-84.9:	A- (numerical value : 3.7)	54.0-56.9:	D+ (numerical value : 1.3)
		50.0-53.9:	D (numerical value : 1.0)
Good		Weak (fail to pass)	
77.0-79.9:	B+ (numerical value : 3.3)	35.0-49.9:	E (numerical value : 0.5)
73.0-76.9:	B (numerical value : 3.0)	0.0 – 34.9:	F (numerical value : 0.0)
70.0-72.9:	B- (numerical value : 2.7)		

## BIM6020 Written Report

**Student's name:**

**Date:**

Please use this document as an outline for your written report. Enter the corresponding sentences into each box, keeping within the sentence number guidelines per section, and within a page total. You should find that the boxes expand as you type, and that the contents should remain single-spaced. Please do not alter the vertical lines or the margins, font size or font.

*Note that 8 points must be gained by infusing your report with excitement and creativity. As with paper and grant writing, it is important to have the element of "good story-telling".*

Report sections	(here's where you put your part: ↓ )	Grade
Background and rationale (2-3 sentences)		/12
Hypothesis (1 sentence)		/20
Methodology, conditions including controls (4-8 sentences)		/20
Predicted results (2-4 sentences)		/20
Implications of predicted results (2-4 sentences)		/20
Creativity		/8
		<b>/100</b>

## Lecture schedule and subject

You must attend all lectures described below, whether or not written reports or oral presentations are associated with a specific lecture.

### **Monday, 28 January 2013**

No oral presentation or written report due on this date. We meet in room 2305 (IRIC) at 3:00pm to discuss the "plan de cours".

### **Monday, 4 February 2013 – Stéphane Angers**

*Université de Toronto, ON, Canada*

Understanding the Many Roles of G protein Signalling in Cancer using Functional Proteomics

### **Monday, 11 February 2013 – Malcolm Whiteway**

*Département de Biologie, Université Concordia, Montréal, QC, Canada*

Sex in Fungi - Exactly the Same, Except in Every Detail

### **Monday, 18 February 2013 – Charles Brenner**

*Département de Biochimie, Carver College of Medicine, University of Iowa, IA, USA*

NAD Metabolism: From Lifespan Extension in Yeast to Fighting Fat

### **Monday, 25 February 2013 – E. Jane Albert Hubbard**

*Skirball Institute for Biomolecular Medicine, New York University School of Medicine, NY, USA*

Environmental Influences on Germline Stem Cell Development

### **Monday, 4 March 2013 – Dimitrios Iliopoulos**

*Dana Farber Cancer Institute, Harvard Medical School, Boston, MA, USA*

Identification of Novel Molecular Circuits in Pancreatic Cancer Stem Cells

### **Monday, 11 March 2013 – François Payre**

*Centre de Biologie du Développement, UMR5547: CNRS/Université de Toulouse, France*

From Space to Time: Developmental Timing of Epidermal Morphogenesis in *Drosophila*

### **Monday, 18 March 2013 – Peter Cresswell**

*Howard Hughes Medical Institute, Yale University School of Medicine, New Haven, CT, USA*

Mechanisms of MHC class I-restricted Antigen Processing

### **Thursday, 28 March 2013 – Angus Lamond\* (conference at the Biochemistry Department of UdeM)**

*School of Life Sciences, Wellcome Trust Biocentre, University of Dundee, UK*

Super Experiments: Studying Cell Biology using Quantitative Proteomics

### **Monday, 8 April 2013 – Thomas Kodadek**

*Département de Chimie, The Scripps Research Institute, Jupiter, FL, USA*

Chemical Tools To Monitor and Manipulate the Proteome

### **Monday, 15 April 2013 – Peter Baumann\***



*Howard Hughes Medical Institute, Stowers Institute, University of Kansas, MO, USA*  
Telomerase Biogenesis and Regulation in Fission Yeast

**Monday, 22 April 2013 – Daniel Gottschling**

*Fred Hutchinson Cancer Research Center, Seattle, WA, USA*

Organelle Deterioration with Age: The limits of an Interconnected Cellular System

**Monday, 29 April 2013 – Michael Dustin**

*Skirball Institute for Biomolecular Medicine, New York University School of Medicine, NY, USA*

Journey to the Center of the Immunological Synapse