Syllabus for PSL 421 Biology of Stem Cells

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Course Assistant: TBD

Total Credits: 2 *Lecture/Recitation/Discussion*

Time and Place: Spring 2016, Wednesdays 3pm to 4:50pm - BPS 3280

Topics for Discussion:

    1- Embryonic Stem Cells

    2- Fetal Stem Cells

    3- Mesenchymal Stem Cells

    4- Tissue Specific Stem Cells

    5- Induced Pluripotent Stem Cells

    6- Hematopoietic Stem Cell

    7- Cancer Stem Cells

    8- Stem Cells and Aging

    9- Chimerism

Course Goals:

    1- Improve communication skills:

        i. Oral Presentations

        ii. Writing assignments

    2- Engage in critical thinking

    3- Learn about Stem Cells in the context of developmental biology and biomedical fields.

Oral Presentations

- Each student will be given the opportunity to improve her/his public speaking skills.
- A minimum of four oral presentations will be done per student.
- We will discuss two high-profile peer-reviewed manuscripts and news commentary about a stem cell-related announcement during each class.

Points to Consider for the Peer-reviewed 'Manuscript Presentation'

Background: Include background the disease, prevalence, mortality rate, cost, current treatment.

If the paper does not refer to specific disease, you must discuss state of the art prior to the publication of this paper.

Mandatory to Check:

- http://clinicaltrials.gov/ct2/search

About the manuscript:

- Describe the Hypothesis.
- Explain each figure and table in detail.
- Identify methods used; do not assume that the audience knows the techniques, we usually need to be reminded about them, especially the instructor listening in the audience.
- State conclusion.
- Finally, answer the following question: How could you have made this paper better?
- Respond questions from the audience to the best of your abilities.
- If you do not know the answer, just say so.
- You WILL NOT be penalized for saying 'I don't know'.

Plan for a 25 minutes presentation per paper – EXACT +/- 5 minutes per each presentation.

Points to Consider for the 'News Analysis'

In one or two slides state what the journalist said about the stem cell-related scientific news.

You have only five slides to describe the real source of the news e.g. peer-reviewed manuscript or press release from an institution or a patent publication.

Add one or two slides describing your view of this news analysis, whether or not they have this 'new therapy' listed in www.clinicaltrials.gov website, and according with your own view, how long would it take to reach the clinic with this therapy.

Videos can be included if they relate directly to the news report.

Presentation should be 15, +/- 2 minutes long - EXACT.

PowerPoint presentations should be uploaded to their respective dropboxes in D2L before the presentation is done.

Writing Assignments

You will have to write a total of 8 reports.

Length: 600 to 700 words total, using font 'verdana', 12 point size – EXACT.

Divided in 3 sections.

1) Section 1 and 2:

   Critique of peer-reviewed papers,

   Discuss each paper in approximately HALF a PAGE and include for each

   paper 4 short paragraphs:

   1-   What was the hypothesis tested in the paper

   2-   What was the approach used to test the hypothesis?

   3-   Do the results obtained support or refute the hypothesis?

   4-   Do you agree with the authors' conclusions?

2) Section 3:

   Media announcement critique – approximately HALF PAGE.

   In 5 paragraphs:

   1- describe the claim of the news article;

   2-   describe the claims of the original article and if there is
         room also add the hypothesis, objectives and results;

   3-   Write your own opinion; is this work worth anything or it
         is it just hype?

   4- Is there a clinical trial going on?

   5- How long will this take to get to the clinic?

See rubrics for details on the grading of writing assignments.

Follow-up Questions

Write and upload to D2L <u>TWO follow up questions</u>, one per each paper to be discussed.

Sixteen total follow-up questions.

<u>Upload the Written assignment and Follow up questions to their respective dropboxes in D2L before deadline.</u>

Exemption from written assignment and follow up questions: People doing the paper presentation or news analysis presentation for each given week don't have to write the peer-reviewed manuscript or media announcement critique or the follow up questions. If you are presenting, concentrate on your presentation.

Special Assignment – TED Talk

- Length: 8 minutes (+/- 1 minute).

- 10 slides maximum.

- No written material other than your title, only figures.

- Your best most outrageous idea for your professional career.

- You will get feedback on style not content.

- Your presentation will be recorded and Videos will be uploaded at Vimeo/D2L.

Students are expected to:

- Carefully read the paper/s before Wednesday presentation.
- Turn in a <u>Critique of peer-reviewed paper</u> and <u>Media announcement critique</u> before it is discussed using 'D2L'.
- Similarity report score for each written assignment in Turnitin should not be more than 20%.
- Before Spring break you will be able to see your similarity score and re-upload your assignment as many times as necessary to get a score below 20%.
- After Spring break you will not see your similarity report score until after your assignment is graded.
- Actively participate in the discussion of the paper.
- During each class we will have a 'lottery of figures and tables'. If you draw the chosen number, you will have to: walk to the front of the class, and discuss that table or figure before the presenter does it.
- Grade the presenter.

Grading (points) from a total of 2000.

- 450 Class attendance (30 points per class)
- 200 Paper Presentation I
- 200 Paper Presentation II
- 200 News Presentation
- 400 Written Assignments (8 x 50 points each)
- 160 Follow-up question (16 x 10 points each)
- 300 Class Participation (20 points per class)
- 90 Figure Lottery (once)

Bonus points:

200 Special assignment – TED talk.

Point deductions:

For Written Assignment out of a total of 50 points per assignment:

- Word limit. Falling short of 600 or in excess of 700 words (5 points);
- Not using 'verdana' 12 points font (5 points);
- Similarity score greater than 20%, five points will be subtracted for every one percentage over the 20% score limit allowed e.g. if your written assignment has a 'similarity report' of 25% you will get 25 points instead of 50;
- Poor grammar (see rubrics for details);
- Not submitting written assignment on time (50 points).

Follow-up questions (10 points each):

Not submitting follow-up questions on time (0 points for each question).

Participation (20 points per class)

No participation at all in class (0 points that day).

For Each Manuscript or News article Presentation out of a total of 200 points per presentation:

1- Failure to describe previous work in the manuscript or news article area of research during the introduction of your piece, 20-points.

2- Failure to describe hypothesis, even of there is none, 20-points.

3- Failure to give credit to a picture, 20-points per picture not cited.

4- If the manuscript or news article refers to a potential treatment with stem cells and there is no mention that you have search on the website www.clinicaltrials.com to see if there are clinical trials available, 50 points.

5- Failure to mention what subsequent/more advanced work has been done in the same area, even if there is none, 20 points.

6- Failure to add your personal critique of the manuscript or news article, 20 points.

7- Presentation time. Not reaching or exceeding the paper presentation (not including Q&A) by 5 minutes; or the News Article presentation (not including Q&A) by 2 minutes, 20 points.

See rubrics for details.

TED talk out of a total of 200 points:
1- Presentation time, not reaching or exceeding the 8 minutes +/- 1 minute, 50 points.
2- Having more than 10 slides, 50 points.
3- Having written material in the slides other than title, 50 points.

My commitment to you:

- Be respectfully critical without embarrassing you.
- Push you hard on things you should improve, don't be surprised if you get emails from me with feedback or if I ask you to stay after class for some suggestions for improvement.
- Tell you what I don't know when I don't know it.
- I will not be offended or take it personally if you tell me that I am wrong on something.
- I am available by appointment. Please call my office 517 432 9206 and leave me a message, I will get back to you.
- It is quite common that due to the size of this class, we will get to know each other well and you will, at some point in the future, ask me for a letter of reference. So I will be taking notes from time to time of specific contributions you make during the class, these notes are always helpful at the time of writing the letter.

Final grades*:

4.0 = 90-100%,
3.5 = 85-89.99%,
3.0 = 80-84.99%,
2.5 = 75-79.99%,
2.0 = 65-74.99%,
1.5 = 60-64.99%,
1.0 = 55-59.99%.

*Disputes on Grading: Any dispute over grading must be resolved via email reports to the instructor containing the appropriate rebuttal with citations from scientifically reviewed journal articles showing the instructor's judgment was erroneous.

Rubrics used:

Peer reviewed Paper Presentation and News Article presentation (total 200 points each)

Component Presentation	Done 20 points
Previous work	
Hypotesis	
Credit to pictures	
Personal critique	
Subsequent work	
Finish on time	
Clinicaltrials.gov	**Checked 50 points**
Mentioned that Clinicaltrials.gov was checked	
Slides are readable	**Done 10 points**
Slides are readable	
Figures are readable	
Free of spelling or grammar mistakes	
Overall Score	**Final Score 0 or more**

Writing assignment (50 points each)

Criteria	Perfect 10 points	Needs atention 5 points	Missed the point 0 points
Content Papers Discussion	All four paragraphs of the two papers are included i.e. 1- What was the hypothesis tested in the paper? 2- What was the approach used to test the hypothesis? 3- Do the results obtained support or refute the hypothesis? 4- Do you agree with the authors' conclusions?	Missed up to half of the paragraphs asked to be discussed.	Missed more than half of the paragraphs asked to be discussed.
Contents News Article	Al 5 paragraphs are included i.e. 1- describe the claim of the news article; 2- describe the claims of the original article and if there is room also add the hypothesis, objectives and results; 3- Write your own opinion; is this work worth anything or it is it just hype? 4- Is there a clinical trial going on? 5- How long will this take to get to the clinic?	Missed up to 3 paragraphs.	Missed 4 o r more paragraphs.
Grammar	Up to 3 mistakes	4 to 10 mistakes.	11 or more mistakes.
Similarity report	less than 20%	Between 21 and 30%	More than 31%
Personal opinion well thought out	Both personal opinion paragraphs, for papers discussion and for news article are included and well thought out.	One of the personal opinion paragraphs is missing or poorly thought out.	Both personal opinion paragraphs are missing or poorly thought out.
Overall Score	**Level 3 29 or more**	**Level 2 19 or more**	**Level 1 0 or more**