Syllabus
MCDB 191 Epigenetics
Fall 2017
Wed 12-1:50 - LaKretz 101

Instructor: Steve Jacobsen – Jacobsen@ucla.edu

Grading will be based on participation and your presentation. This will be in five areas:

- Attendance (4 points per week).
- Reading the papers before the presentation is absolutely mandatory. At the beginning of each meeting, you must hand in a form on which you will provide a synopsis of the paper, and a brief statement of which experiments you think would be the next logical step to take. This must be done before the class meets. (5 points per week).
- Participation in the discussion of papers. Asking questions, making comments etc. (25 points total).
- Completing an evaluation of each presentation in order to provide feedback to the presenter. We will collect these at the end of each class, and then give them to the presenter at the beginning of the next class, or you may pick them up anytime earlier in TLSB4032 (Ming Chan’s office) (1 point per week).
- Well thought out presentation with sufficient background information, and good visuals. This will require reading and understanding the paper to be presented in great detail, as well as reading supporting papers and reviews to put the paper into the context of the field as a whole. (25 points).

What constitutes a good presentation?

- Shoot for a 10-minute introduction and 20-minute explanation of the paper, for a total of 30 minutes. This leaves plenty of time for discussion and questions. You don’t have to explain every figure of the paper in great detail. Best is to spend more time on the figures that really demonstrate the main point of the paper, and spend less time on less important figures. The art is knowing how to convey the main message of the paper concisely, while critically analyzing the validity of the data presented. You should however look carefully at all of the figures during your preparation so that you can field questions about the whole paper. Similarly, try to understand the materials and methods so you can field questions, but you don’t need to get bogged down in presenting every detail of the techniques used.
- Use material from other papers and reviews on the reading list, or other papers that you might find on your own, to provide a summary of the field that you are presenting, and to make it clear how the paper fits into that field.
- Try to end with a statement of the main findings of the paper, and what would be the next logical questions to ask in this field.
- Visuals. Powerpoint (or equivalent software) presentations including background and data slides are highly encouraged.

Course WEB site: http://www.mcdb.ucla.edu/Research/Jacobsen/LabWebSite/P_ClassEpigenetics.php

This contains the syllabus, and all of the papers and evaluation forms in a downloadable form.
## Week 1 October 4
Introduction and Background Lectures
Epigenetics overview. Preparation of presentations.

### Discussion

### Related papers and reviews

## Week 2 October 11
DNA Methylation

### Discussion


### Related papers and reviews


## Week 3 October 18
Histone methylation and demethylation

### Discussion


### Related papers and reviews
**Week 4 Oct 25**

**Polycomb**

**Discussion**


**Related papers and reviews**


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**Week 5 Nov 1**

**RNA-directed Silencing**

**Discussion**


**Related papers and reviews**


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**Week 6 Nov 8**

**DNA de-methylation**

**Discussion**


### Related papers and reviews


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### Week 7 Nov 15

#### Enhancers

**Discussion**


**Related papers and reviews**


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### Week 8 Nov 22 (Thanksgiving week)

#### Targeted Epigenetics

**Discussion**


**Related papers and reviews**


Targeted DNA demethylation in vivo using dCas9-peptide repeat and scFv-TET1 catalytic domain fusions. (2016) Sumiyo Morita, Hirofumi Noguchi, Takuro Horii, Kazuhiko Nakabayashi, Mika Kimura,
### Week 9 Nov 29
#### 3-D chromatin architecture

**Discussion**


**Related papers and reviews**


### Week 10 Dec 6
#### Unusual uses of epigenetics in nature.

**Discussion**


**Related papers and reviews**