### Physiological Science 194
#### Spring 2014

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<td>1</td>
<td>04/02/14</td>
<td>Proposal Summary Review</td>
<td>Dr. Yuki Quiñones</td>
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| 2    | 04/09/14 | Rubric for Proposal Summary Review Proposal Summary student 1 | Dr. Dwayne Simmons (Brian Perez lead reviewer)  
                                               1. Luis Gonzalez                                       |
| 3    | 04/16/14 | Research Proposal Presentation students 1       | Luis Gonzalez                                             |
|      |        | Review Proposal Summary student 2               | (Eliztander Leal and Julio Silva lead reviewers)  
                                               2. Adrian Hernandez                                    |
| 4    | 04/23/14 | Research Proposal Presentation student 2       | Adrian Hernandez                                          |
|      |        | Review Proposal Summary student 3               | (Michael Rale and Jacqueline Graniel lead reviewers)  
                                               3. Taylor Brown                                        |
| 5    | 04/30/14 | MARC & McNair Discussion (5-6PM; location TBD) | All                                                      |
| 6    | 05/07/14 | Research Proposal Presentation student 3       | Taylor Brown                                             |
|      |        | Review Proposal Summary student 4               | (Ivan Flores and Marco Mravic lead reviewers)  
                                               4. Walter Hardesty                                       |
| 7    | 05/14/14 | Research Proposal Presentation student 4       | Walter Hardesty                                          |
|      |        | Review Proposal Summary student 5               | (Steve Guzman lead reviewer)  
                                               5. Richard Flores                                      |
OBJECTIVES:
1) Learn to synthesize results from various studies and identify the gaps in knowledge/unresolved questions.
2) Experience in experimental design that will address the hypothesis/question being asked.
3) Learn important skills of analytical review and critique of research proposals.

1. Proposal Summary
Each student must email the Proposal Summary to Dr. Quiñones (yuki@ucla.edu) and MARC Program Representative (marc@lifesci.ucla.edu) by Monday on the week they will be reviewed. We will email proposals to the class for critical evaluation and make copies of the summaries for the review process in the Wednesday class. Final edited proposals are due the day of the presentation; email final proposals to Dr. Quiñones (yuki@ucla.edu) and MARC Program Representative (marc@lifesci.ucla.edu) by Wednesday of the presentation. Final proposals will be emailed to all lead reviewers for final evaluation and rankings.

The entire proposal should be no more than 3 pages and include the following sections. Please use the following section headers to format your proposal based upon the two assigned papers (and other background you have read about in your field).

A. Specific Aims
   - Hypothesis you set out to test
   - General purpose or major objectives of your research

B. Background
   - Provide background information from the papers you read about that led to the research you are proposing
   - Identify the gaps or discrepancies in the papers about the field
   - Give a problem statement (i.e. given the gaps/discrepancies in the papers, what needs to be studied?)

C. Significance
   - State how your research is innovative

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<td>05/21/14</td>
<td>Research Proposal Presentation student 5</td>
<td>Richard Flores</td>
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<td>9</td>
<td>05/28/14</td>
<td>NIH-style study section: final proposal discussion and ranking</td>
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<td>06/04/14</td>
<td>TBD</td>
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• Show how the hypothesis and research will:
  o increase knowledge in the field
  o relate to the longer-term, big picture scientific objectives
  o facilitate the betterment of public health

**D. Research Design and Methods** *

• Describe the experimental design and procedures in detail
• Give a rationale for the experimental design and procedures

*Organize this section so each experiment or set of experiments corresponds to one of your specific aims

**E. Approach** *

• State why you chose your approach(es) as opposed to others
• If you are choosing a nonstandard approach, explain why it is more advantageous than a conventional one
• Call attention to potential difficulties you may encounter with each approach.

*Spell it out in detail. "We will grow a variety of viruses in cells using standard in vitro tissue culture techniques."
Which viruses, cells, and techniques; the rationale for using the particular system; exactly how the techniques will be used.

**F. Results**

• State the conditions under which the data would support or contradict the hypothesis
• State the limits you will observe in interpreting the results.
• Describe your proposed statistical methods for analyzing the data you plan to collect, if any.

**G. Conclusions**

• Show you are aware of the limits to - and value of - the kinds of results you can expect based on current knowledge of the subject.

**H. Layman Summary**

• A succinct, layman’s description of the proposed work that describes the project relevance to human health using no more than 2 - 3 sentences.

**Literature Cited**

• Each citation must include the names of all authors (not et al.), name of the book or journal, volume number, page numbers (not first page only), and year of publication.
2. **PRESENTATION**

Presenters should follow these guidelines for presentation (30 minutes):

(1) **Background (5 min).**

Provide background information from the papers you read about that led to the research you are proposing. Identify the gaps or discrepancies in the papers about the field. Give a problem statement (i.e. given the gaps/discrepancies in the papers, what needs to be studied?)

(2) **Specific Aims (3 min).**

Discuss the hypothesis you set out to test. What is the general purpose or major objectives of your proposed research. State the significance of your proposed research; how it is innovative and how it will increase knowledge in the field.

(3) **Research Design/Methods (2-3 min).**

Describe the experimental design and procedures in detail and give a rationale for the experimental design and procedures. State why you chose your approach(es) as opposed to other approaches. If you are choosing a nonstandard approach, explain why it is more advantageous than a conventional one. Call attention to potential difficulties you may encounter with each approach.

(4) **Summarize primary conclusions (4 min).**

State the conditions under which the data would support or contradict the hypothesis. Discuss the limits you will observe in interpreting the results.

(5) **Q & A (5 min).**

(6) **Mentor Interview (10 min).**

It is the mentee’s responsibility to review their mentor’s CV and/or research career and formulate 5 questions to “interview” the mentor with.

3. **Analytical Review and Critique of Proposals**

We will be sending the proposals for critical evaluation via email the Tuesday prior to class. Each student must critique all other proposals. Proposal critiques must be sent via email to MARC Program Representative (marc@lifesci.ucla.edu) and Dr. Quiñones (yuki@ucla.edu) by 5pm Wednesday of the critique day. We will also be discussing critiques in class so come prepared for discussion of proposal evaluations. The evaluations are a critical component of the journal club and students will prepare, discuss and email them on-time.
Critique:

- Background: Does the proposed research address the gaps in the field?
- Specific aims and significance: Discuss the relevance and appropriateness of the proposed research. Should it be funded?
- Research Design and Methods: Discuss the rationale for the proposed research design and procedure(s). Is the researcher capable of performing experiments and will the design test the hypothesis presented? If there are acknowledged difficulties, how will the researcher bypass potential problems?
- Conclusions: Discuss the limitations in interpreting results.

In addition, each week there is at least one “lead reviewer” who is in charge of leading the discussion of the week’s particular grant and must also take the lead in evaluating the oral presentation and final proposal. The “lead reviewer” should be able to answer any questions pertaining to their particular grant that arise during the final proposal discussion (see NIH study section below).

4. **NIH study section**

Lead reviewers will rank final proposals in the order that they should be funded (1-5). Evaluations should include the final written proposal and the strength of the presentation. Rankings must be supported by the analytical review and critique of the proposals (see 3 above), with key points addressed. Rankings **must be sent via email** to MARC Program Representative (marc@lifesci.ucla.edu) and Dr. Quiñones (yuki@ucla.edu) by 5pm Monday before the final proposal discussion. During the final proposal discussion, each lead reviewer will make their case for the order of proposal funding and then together determine a single, final proposal-funding order.