

Candidacy Exam Prep Class (BMB 705) Spring, 2019

Instructors: Ronen Marmorstein and Sergei Vinogradov

Goals:

The goal of this class is to prepare each student to write and defend a grant proposal, which is a degree requirement. This is a half-credit class and is graded.

Your candidacy exam is designed to prepare you for thinking about and performing cutting edge research. This is the time when you dig into the literature, define a problem of your own, and articulate what you will do, what you will learn and why it's important. This is a large undertaking and you should expect this process to be:

- *Challenging* - we expect you to do something you have likely not done before.
- *Time-consuming* – this is a lot of stimulating work.
- *Rewarding* - this will provide you with the intellectual underpinning for your graduate experience, regardless of whether your proposal focuses on your actual thesis project or not.

A major goal of this class is to teach you to think critically about a research problem and to translate this into a compelling research proposal. You will learn to do this by (1) learning about the mechanics of writing the proposal, (2) reviewing past submitted fellowship proposals (in a mock study section format) to learn the do's and don'ts about preparing a compelling proposal and (3) preparing compelling specific aims for your own proposal.

Grading:

You will have two written assignments:

1. Provide written critiques of 2 grants (due by noon on day of critiques to RM AND SV)
2. Write (and rewrite) your specific aims (see syllabus for specific assignments)

Grades will be based on your paragraph rewrite, written and oral critiques, written and oral presentation of your specific aims and class participation.

Syllabus

Classes will be held on Mondays (2:00-4:00 PM) and Fridays (1:00-3:00 PM) in room **BRB 501** from Jan. 18th – March 15th. Classes will not be held on Jan 21st (MLK holiday), Jan. 25th (BMB recruitment 1) and Feb. 8th (BMB recruitment 2).

***** Assignment for 1/12: Read assigned grants for Mock study section I [Lynch_2_121113 and Wand_Lab]**

Friday 1/18

Introduction, Course Organization

Elements of a proposal - For your candidacy exam you need to write a proposal.

- How best to communicate science? Think backwards.
- What does a proposal look like?
Overview: Abstract, Specific Aims, Significance, Innovation, Approach
- Abstract: Summary of the 4 sections described below.
- Specific Aims: 1 page, spell out the overall goal (hypothesis/question), describe why it is important and how you will achieve the goal.
How do you formulate and address a meaningful hypothesis?
What is the difference between a hypothesis-driven proposal (good), a technology-driven proposal (good), and a “fishing expedition” (bad)?

- Significance: ~1 page, convey why your goal is important.
- Innovation: ~1/3-1/2 page, highlight innovative features of the technical or conceptual aspects of your proposal.
- Approach: ~ 4 ½ pages, describe how you will carry out the proposed experiments.

Mock Study Section - I

- Discussion of how proposals are reviewed at the NIH?
- SV and RM will review the **Lynch_2_121113 and Wand_Lab** grants as examples for your own study sections
- Grants will be assigned for future Mock Study Sections

*** **Assignment: Read, review and score grants that are assigned to you for your mock study sections.**

Students: Faviola Baez-Cruz (FBC), Peter Carman (PC), Michael Cory (MC), Carl Fluck (CF), Jose Gorbea (JG), Chloe Jones (CJ), Hee-Jong Kim (HK), Lanitza Nieves-Lopez (LNL), Robert Ontiveros (RO), Dominic Santoleri (DS), Julian Stoute (JS), Mary Szurgot (MS), Kahealani Uehara (KU), Isabel Yannatos (IY)

1/21 MLK Holiday – No class

Friday 1/25 NO CLASS (BMB Student Recruitment 1)

Monday 1/28

Mock Study Section II (review 3 grants)

You will participate in a study section in which you will present, defend/attack, and score the proposals you were assigned.

*** **Reviewers: FBC, PC - Black_121013; MC, CF- Lynch_1_121113; JG, CJ - Marks_121013**

Written critiques emailed by noon 1/28 to RM and SV.

Friday 2/1

Mock Study Section III (review 3 grants)

You will participate in a study section in which you will present, defend/attack, and score the proposals you were assigned.

*** **Reviewers: HK, LNL – Kohli_103118; RO, DS - Marmorstein_1_122013; JS, MS - Wellen_072518;**

Written critiques emailed by noon 2/1 to RM and SV.

Monday 2/4

Mock Study Section IV (review 3 grants)

You will participate in a study section in which you will present, defend/attack, and score the proposals you were assigned.

*** **KU, IY - Kohli_010515; PC, MC - Vinogradov_101016
CF, FBC - Radhakrishnan_Lab_1; CJ, HK - Goldman_Lab1;**

Written critiques emailed by noon 2/4 to RM and SV.

*** **Assignment Due 2/4 by 6 pm: FBC and PC email their specific aims to RM and SV for comments.**

Friday 2/8

NO CLASS (BMB Student Recruitment 2)

Monday 2/11

Mock Study Section V (review 3 grants)

You will participate in a study section in which you will present, defend/attack, and score the proposals you were assigned.

*** **LNL,JG - Vinogradov_072818; DS,JS – Black_071618;
MS,KU – Shorter_070318; IY,RO - Marmorstein_3_122013
Written critiques emailed by noon 2/11 to RM and SV.**

*** **Assignment Due 2/11 by 6 pm: MC and CF email their specific aims to RM and SV for comments.**

Friday 2/15

Oral presentation of Specific Aims (FBC,PC)

Those in Group 1 will give 15 minute presentation of their Specific Aims, with a maximum of two slides, and receive feedback from students, KL, RM, and HN.

*** **Assignment Due 2/15 by noon: FBC and PC email their specific aims to faculty & students.**

*** **Assignment Due 2/15 by 6 pm: JG and CJ email their specific aims to RM and SV for comments.**

Monday 2/18

Oral presentation of Specific Aims (MC,CF)

Those in Group 2 will give 15 minute presentation of their Specific Aims, with a maximum of two slides, and receive feedback from students, KL, RM, and HN.

*** **Assignment Due 2/19 by noon: MC and CF email their specific aims to faculty & students.**

*** **Assignment Due 2/19 by 6pm: HK and LNL email their specific aims to RM and SV for comments.**

Friday 2/22

Oral presentation of Specific Aims (JG,CJ)

Those in Group 3 will give 15 minute presentation of their Specific Aims, with a maximum of two slides, and receive feedback from students, KL, RM, and HN.

*** **Assignment Due 2/22 by noon: JG and CJ email their specific aims to faculty & students.**

*** **Assignment Due 2/22 by 6 pm: RO and DS email their specific aims to RM and SV for comments.**

*** **Assignment Due 2/22 by 6 pm: FBC and PC email revised specific aims to RM and SV if necessary.**

Monday 2/25

Oral presentation of Specific Aims (HK,LNL)

Those in Group 4 will give 15 minute presentation of their Specific Aims, with a maximum of two slides, and receive feedback from students, KL, RM, and HN.

*** **Assignment Due 2/25 by noon: HK and LNL email their specific aims to faculty & students.**

- *** Assignment Due 2/25 by 6 pm: JS and MS email their specific aims to RM and SV for comments.
- *** Assignment Due 2/25 by 6 pm: MC and CF email revised specific aims to RM, KL and HN if necessary.

Friday 3/1

Oral presentation of Specific Aims (RO,DS)

Those in Group 5 will give 15 minute presentation of their Specific Aims, with a maximum of two slides, and receive feedback from students, KL, RM, and HN.

- *** Assignment Due 3/1 by noon: RO and DS email their specific aims to faculty & students.
- *** Assignment Due 3/1 by 6 pm: KU and IY email revised specific aims to RM and SV for comments.
- *** Assignment Due 3/1 by 6 pm: JG and CJ email revised specific aims to RM and SV for comments if necessary.

Monday 3/4

Oral presentation of Specific Aims (JS,MS)

Those in Group 6 will give 15 minute presentation of their Specific Aims, with a maximum of two slides, and receive feedback from students, KL, RM, and HN.

- *** Assignment Due 3/4 by noon: JS and MS email their specific aims to faculty & students.
- *** Assignment Due 3/4 by 6 pm: HK and LNL email revised specific aims to RM and SV for comments if necessary.

Friday 3/8

Oral presentation of Specific Aims (KU,IY)

Those in Group 7 will give 15 minute presentation of their Specific Aims, with a maximum of two slides, and receive feedback from students, KL, RM, and HN.

- *** Assignment Due 3/4 by noon: KU and IY email their specific aims to faculty & students.
- *** Assignment Due 3/4 by 6 pm: RO and DS email revised specific aims to RM and SV for comments if necessary.

Monday 3/11

Additional discussion of specific aims if needed.

- *** Assignment Due 3/11 by noon: Presenters email their specific aims to faculty & students.
- *** Assignment Due 3/11 by 6 pm: JS and MS email revised specific aims to RM and SV for comments if necessary.

Friday 3/15

Additional discussion of specific aims if needed.

- *** Assignment Due 3/15 by noon: Presenters email their specific aims to faculty & students.
- *** Assignment Due 3/15 by 6 pm: KU and IY email revised specific aims to RM and SV for comments if necessary.

Additional Important Deadlines:

March 18 Obtain approval of final title and specific aims from exam committee.
April 1 Distribute written proposal to the committee (at least two weeks before exam)
April 15 – May 6 Oral Exams Take Place
Friday June 7 Last date to complete any 2nd attempts of either written or oral exams.

Candidacy Exam Advisory Group (preliminary, to be confirmed)

The chair of your committee will be assigned from this group of BMB faculty members

Yair Argon	Ronen Marmorstein
Paul Axelsen	Mike Ostap
Ben Black	Ravi Radhakrishnan
Ben Garcia	Heiner Roder
Yale Goldman	Brian Salzberg
Mark Goulian	Kim Sharp
Harry Ischiropoulos	James Shorter
Rahul Kohli	Dave Speicher
Michael Lampson	Greg Van Duyne
Mitch Lewis	Sergei Vinogradov
Kristen Lynch	Josh Wand