

Candidacy Exam Prep Class (BBCB 7050) Spring, 2025
Instructors: Ronen Marmorstein and Kara Bernstein
Location and Time: BRB 801, W/F 10:15 AM-12:15 PM

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.

The main 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 how to do this by (1) learning about the parts of a 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)
2. Write (and rewrite) your specific aims (see syllabus for specific assignments)

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

Syllabus

Classes will be held from January 17 through March 7 on Wednesdays and Fridays from 10:15 AM – 12:15 PM except for the following dates: 1/26 (BMB recruitment), 2/9 (BMB recruitment).

All class material will be available on the class canvas site.

***** Assignment for 1/17: Read assigned grants for Mock study section I [Kohli_103118 and Wand_Lab]**

Friday 1/17

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?
- Ronen Marmorstein and Kara Bernstein will review the **Kohli_103118 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: Kamiel Beckley (KB), Shayna Brotzman (SB), Zoe Chen (ZC), Jiya Fowler (JF), Kálery La Luz Rivera (KL), Rhiannon McCracken (RM), Paola Miranda (PM), Lucas Morley (LM), Lisa Nakayama (LN), Quynh Nguyen (QN), Chelsea Shu (CS), Niharika Shukla (NS), Ricardo Velazquez Aponte (RV)

Wednesday 1/22

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: KB, SB, ZC - Black_121013; JF, KL, RM - Lynch_1_121113; PM, LM, LN – Marmorstein_Wellen_120121; Written critiques emailed by 10 am 1/22 to RM.**

Friday 1/24

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: QN, CS, NS – MSTP_1_121113; RV, KB, SB - Degrado_Lab_4; ZC, JF, KL -Marmorstein_1_122013 Written critiques emailed by 10 am 1/24 to RM.**

Wednesday 1/29

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.

*** **Reviewers: RM, PM, LM - Wellen_072518; LN, QN, CS - Ostap, Lab_1; NS, RV, KB-Vinogradov_072818**

Written critiques emailed by 10 am 1/29 to RM.

*** **Assignment Due 1/29 by 6 pm: Group 1 (KB, SB) email specific aims to RM and KB for comments.**

Friday 1/31 (No class; BMB Recruitment)

- *** **Assignment Due 1/31 by 6 pm: Group 2 (ZC, JF) email specific aims to RM and KB for comments.**

Wednesday 2/5

Mock Study Section V (review 4 grants)

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

- *** **Reviewers: SB, ZC, JF- Black_Shorter_120920; KL, RM, PM – Shorter_073018; LM, LN, QN - Radhakrishnan_Lab_1; CS, NS, RV - Goldman_Lab_1; Written critiques emailed by 10 am 2/5 to RM.**
- *** **Assignment Due 2/5 by 6 pm: Group 3 (KL, RM) email specific aims to RM and KB for comments.**

Friday 2/7

Oral presentation of Specific Aims (Group 1 – KB, SB)

Those in Group 1 (RA, AB) will give 15-minute presentation of their Specific Aims, with a maximum of two slides, and receive feedback from students, RM and KB.

- *** **Assignment Due 2/7 by 10 am: Group 1 (KB, SB) email their specific aims to faculty & students.**
- *** **Assignment Due 2/7 by 6pm: Group 4 (PM, LM) email specific aims to RM and KB for comments.**

Wednesday 2/12

Oral presentation of Specific Aims (Group 2 – ZC, JF)

Those in Group 2 (PB, AF) will give 15-minute presentation of their Specific Aims, with a maximum of two slides, and receive feedback from students, RM and KB.

- *** **Assignment Due 2/12 by 10 am: Group 2 (ZC, JF) email their specific aims to faculty & students.**
- *** **Assignment Due 2/12 by 6 pm: Group 5 (LN, QN) email specific aims to RM and KB for comments.**

Friday 2/14 (No class; BMB Recruitment)

Wednesday 2/19

Oral presentation of Specific Aims (Group 3 – KL, RM)

Those in Group 3 (PE, BH) will give 15-minute presentation of their Specific Aims, with a maximum of two slides, and receive feedback from students, RM and KB.

- *** **Assignment Due 2/19 by 10 am: Group 3 (KL, RM) email their specific aims to faculty & students.**
- *** **Assignment Due 2/19 by 6 pm: Group 6 (CS, NS) email specific aims to RM and KB for comments.**
- *** **Assignment Due 2/19 by 6 pm: Group 1 (KB, SB) email revised specific aims to RM and KB for comments if necessary.**

Friday 2/21

Oral presentation of Specific Aims (Group 4 – PM, LM)

Those in Group 4 (DK, HK) will give 15-minute presentation of Specific Aims, with a maximum of two slides, and receive feedback from students, RM and KB.

*** **Assignment Due 2/21 by 10 am: Group 4 (PM, LM) email specific aims to faculty & students.**

*** **Assignment Due 2/28 by 10 am: Group 7 (RV) email specific aims to RM and KB for comments.**

*** **Assignment Due 2/21 by 6 pm: Group 2 (ZC, JF) email revised specific aims to RM and KB for comments if necessary.**

Wednesday 2/26

Oral presentation of Specific Aims (Group 5 – LN, QN)

Those in Group 5 (AK, EL) will give 15-minute presentation of Specific Aims, with a maximum of two slides, and receive feedback from students, RM and KB.

*** **Assignment Due 2/28 by 10 am: Group 5 (LN, QN) email specific aims to faculty & students.**

*** **Assignment Due 2/28 by 6 pm: Group 3 (KL, RM) email revised specific aims to RM and KB for comments if necessary.**

Friday 2/28

Oral presentation of Specific Aims (Group 6 – CS, NS)

Those in Group 6 (HM, AN) will give 15-minute presentation of Specific Aims, with a maximum of two slides, and receive feedback from students, RM and KB.

*** **Assignment Due 3/1 by 10 am: Group 6 (CS, NS) email specific aims to faculty & students.**

*** **Assignment Due 3/1 by 6 pm: Group 4 (PM, LM) email revised specific aims to RM and KB for comments if necessary.**

Wednesday 3/5 (No class, RM out of town)

*** **Assignment Due 3/5 by 6 pm: Group 5 (LN, QN) email revised specific aims to RM and KB for comments if necessary.**

Friday 3/7

Oral presentation of Specific Aims (Group 7 – RV)

TS will give 15-minute presentation of Specific Aims, with a maximum of two slides, and receive feedback from students, RM and KB.

*** **Assignment Due 3/7 by 10 am: Group 7 (RV) email specific aims to faculty & students.**

*** **Assignment Due 3/7 by 6 pm: Group 6 (CS, NS) email revised specific aims to RM and KB for comments if necessary.**

Wednesday 3/12 (No class)

*** **Assignment Due 3/12 by 6 pm: Group 7 (RV) email revised specific aims to RM and KB for comments if necessary.**

Additional Important Deadlines:

March 14	Obtain approval of final title and specific aims from exam committee.
April 7 - May 5	Distribute written proposal to the committee (at least two weeks before exam)
April 21 – May 30	Oral Exams Take Place

June 20

Last date to complete any 2nd attempts of either written or oral exams.

Candidacy Exam Advisory: Committee chairs assigned from this group of BMB faculty:

Yair Argon, Ben Black, Roberto Bonasio, Donita Brady, Roberto Dominguez,
Alessandro Gardini, Yale Goldman, Mark Goulian, Roger Greenberg, Erica Holzbaaur,
Rahul Kohli, Michael Lampson, Edward Lee, Kristen Lynch, Ronen Marmorstein,
Vera Moiseenkova-Bell, Maureen Murphy, Mike Ostap, Trevor Penning, James Petersson,
Elizabeth Rhoades, Kim Sharp, James Shorter, Andrew Tsourkas, Greg Van Duyne,
Katy Wellen, Sergei Vinogradov, Ken Zaret