

University of California, San Diego

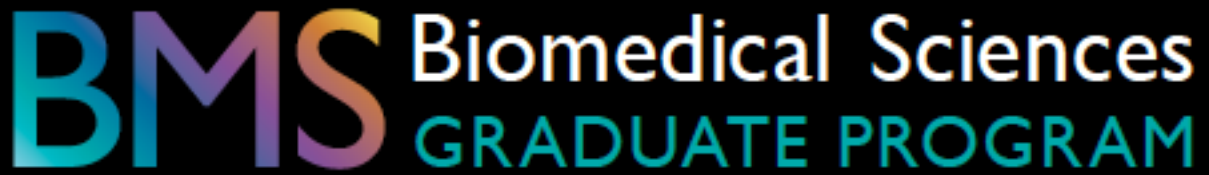
**BMS** Biomedical Sciences  
GRADUATE PROGRAM

# Guidelines

**For Students and Faculty  
2020-21**

**Website:** <http://biomedsci.ucsd.edu>

**UC San Diego Campus Mail Code 0685**

The logo for the Biomedical Sciences Graduate Program (BMS) is displayed on a black background. The letters 'BMS' are large and stylized, with the 'B' in blue, the 'M' in purple, and the 'S' in yellow. To the right of 'BMS', the words 'Biomedical Sciences' are written in white, and 'GRADUATE PROGRAM' is written in teal below it.

# BMS Biomedical Sciences GRADUATE PROGRAM

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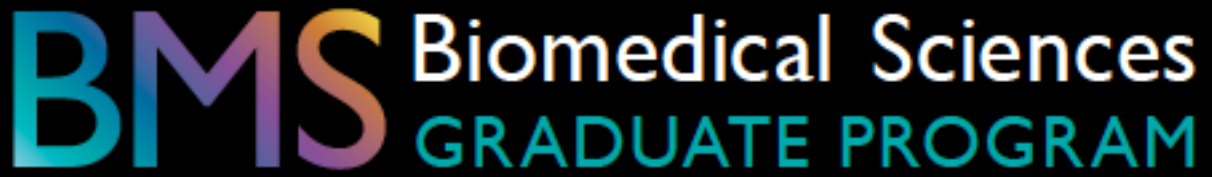
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# BMS Biomedical Sciences GRADUATE PROGRAM

## INTRODUCTION

A word to the wise: As a graduate student, you are largely in charge of your own progress and you are responsible for knowing and adhering to the requirements and rules for graduate study. The BMS program has its requirements; the University, through the Graduate Division, has its rules as well. These rules and requirements prescribe increments of progress and provide for a number of rights and responsibilities by you and the University. Know these rules and responsibilities.

## I. ORGANIZATION OF THE BIOMEDICAL SCIENCES GRADUATE PROGRAM

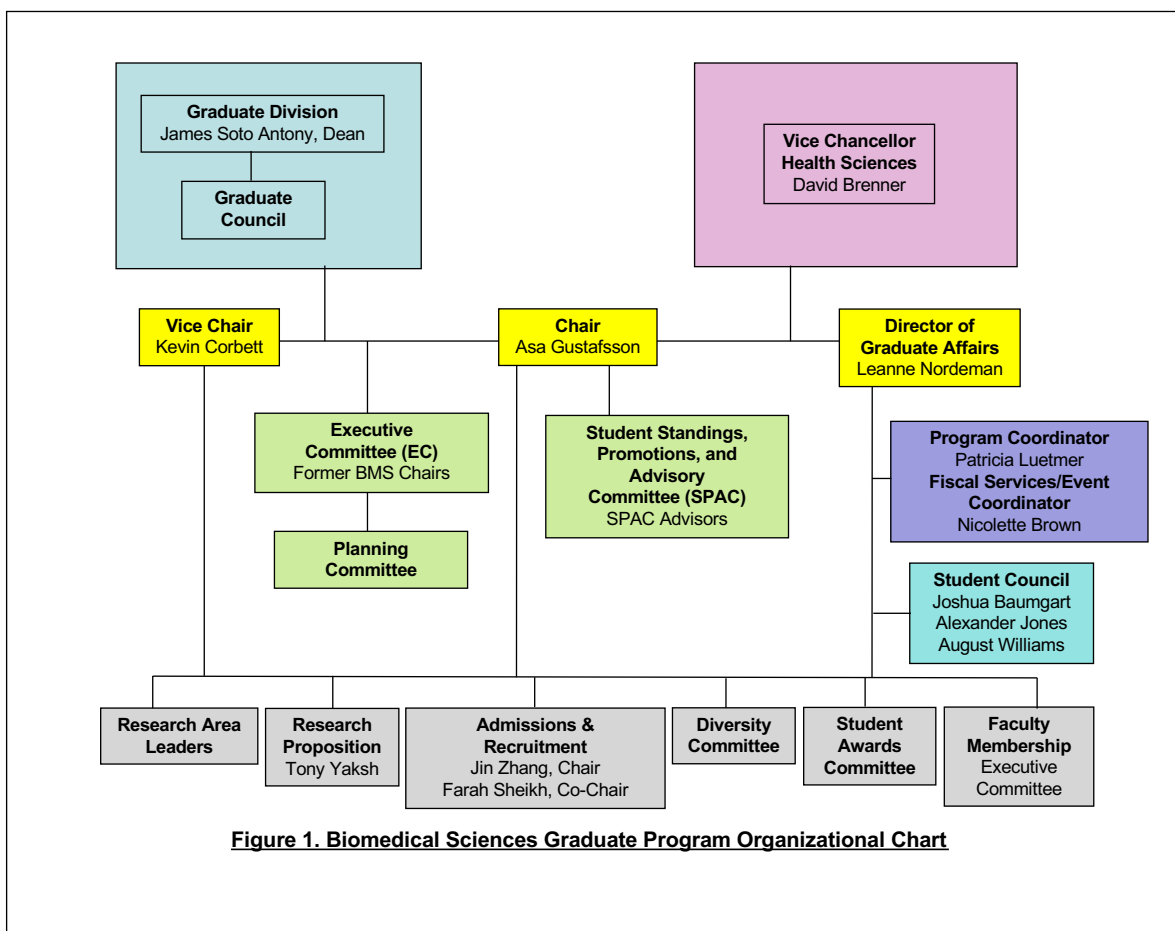
The Biomedical Sciences (BMS) Ph.D. Program is sponsored by the UC San Diego Health Sciences, including the School of Medicine (SOM) and the Skaggs School of Pharmacy and Pharmaceutical Sciences (SPPS). The program offers broad opportunities for advanced studies in disciplines of cell and molecular biology, pharmacology, physiology, genetics, genomics, immunology, microbiology, biochemistry, bioinformatics, cancer biology, endocrinology, neurobiology, stem cell biology, structural and chemical biology, among other areas. The program is designed to develop research scientists who will be well equipped with the knowledge and the skills to solve biomedical problems creatively and independently in the public and the private sectors. A particularly attractive feature of the program is its multidisciplinary character providing students with a broad choice of faculty and laboratories for research training.

The operation of the BMS Graduate Program is overseen by the Chair, Vice Chair, and a series of committees as outlined in the organizational chart (page 5).

The Executive Committee oversees programmatic and fiscal developments, and its members selectively participate in five major program committees: Admissions and Recruitment, Curriculum, Research Proposition, and Student Awards (see Org chart). The Graduate Student Admissions and Recruiting Committee oversees the admissions process in the winter and recruiting efforts throughout the year. The Curriculum Committee, which includes BMS Research Area Leaders and a subset of Course Directors, oversees the development, the implementation and the evaluation of courses in the BMS program. The Executive Committee evaluates the applications of new faculty members; it also reviews existing program faculty members and has the authority to terminate faculty membership in the BMS program. The Research Proposition Committee administers the Research Proposition Exam; it also mentors first-year students with their applications for pre-doctoral fellowships and awards. The Student Awards Committee oversees the selection of awardees and presents the awards at the BMS annual retreat. The BMS program values the input of students, who serve on the Admissions and Recruiting Committee and participate in the planning of the BMS annual retreat. The Student Standing, Promotions and Advisory Committee (SPAC) provides an important advisory system for the students, particularly during their first year in the program. The SPAC committee provides guidance to incoming first-year students in their selection of Thesis advisors.

Currently, there are 174 graduate students and 216 faculty members from UC San Diego and the neighboring Sanford Burnham Prebys MDI, Salk Institute, and La Jolla Institutes. The BMS program is organized into 9 Research Areas: Cancer Biology, Cell and Developmental Biology, Computational Biology & Data Science, Genetics & Genomics, , Immunology, Microbiome & Microbial Sciences, Molecular & Structural Biology, Molecular Pharmacology & Drug Discovery, and Neurobiology of Disease. 4 cross-disciplinary training programs are also available in the areas of Glycobiology, Quantitative Biology, Anthropogeny and Multi-Scale Biology. BMS faculty members are affiliated with a number of research centers and institutes, including the Moores Cancer Center, the Ludwig Institute for Cancer Research, the Howard Hughes Medical Institute, the Sanford Consortium for Regenerative Medicine, the La Jolla Institute for Allergy & Immunology, the Salk Institute for Biological Studies, the Scripps Research Institute, the Glycobiology Research Training Center, the National Center for Microscopy & Imaging Research, and the Center for Research in Biological Systems. The list of BMS faculty members and their web pages are found at the BMS website: [https://biomedsci-db.ucsd.edu/faculty\\_search\\_results?t=all](https://biomedsci-db.ucsd.edu/faculty_search_results?t=all)

# Biomedical Sciences Graduate Program Organizational Chart



## II. ADVISORY SYSTEM

### A. OVERVIEW

During the first year of study and prior to the selection of their Thesis advisors, BMS students are guided by their assigned advisors who are members of the SPAC committee. Student advising will be transferred to the Thesis Advisors after the students enter the Thesis research laboratories. Student advising will be expanded to include faculty members of the student Thesis committee following the Research Proposition exam. Students are free to contact the Chair and Vice-Chair of the BMS program for advice on concerns that cannot be resolved by their SPAC or Thesis Advisors.

### B. FIRST YEAR ADVISORS

Students enter the BMS program without having to commit to any particular laboratory or research area. Prior to the selection of their Thesis advisors, each entering student is assigned an advisor from the Student Standing, Promotions and Advisory Committee (SPAC). The SPAC advisors

provide counsel on course work and laboratory rotations, evaluate the student progress in the curriculum, and advise the students in the selection of their Thesis Advisors.

***SPAC Advisors and students should keep in touch at least twice per quarter until a student enters the lab of his/her Thesis advisor. The SPAC advisors will also check periodically on their advisees until the Advancement to PhD Candidacy is completed.***

**The responsibilities of SPAC advisors are:**

1. In consultation with the student, develop a laboratory rotation program during the Fall, Winter and Spring quarters to provide the student with an optimal exposure to the research disciplines that match the student's research interests.
2. Guidance of the student in the selection of a Thesis Advisor (see section 3 on Thesis Advisors).
3. Determination that the student is making satisfactory progress in meeting the program requirements, including completion of the Core courses, and the Research Proposition Exam.

**C. THESIS ADVISORS**

The primary advisors of the BMS students are their Thesis Advisors. Students are expected to enter the laboratories of their Thesis Advisors no later than June 30th of the 2020/21 academic year.

**The responsibilities of the Thesis Advisors are:**

1. Obligation to provide for the financial support of the student. The BMS program will support the first-year students for 12 months during their rotations through different research labs. The program support will terminate as of August 31, 2020/21 academic year. Thereafter, the Thesis Advisor is expected to be fully responsible for the student.
2. Guidance of the student in the development of a research project that is original, feasible, and will lead to a Ph.D. thesis and peer-reviewed publication(s).
3. Determination that the student is making progress in meeting the Ph.D. requirements, including (a) the timely completion of the Research Proposition Qualifying examination by Thanksgiving day of the student's second year in the program, (b) the timely completion of the Advancement to Candidacy examination by the end of the Spring quarter of the student's third year in the program, (c) the timely submission of a formal annual evaluation of the student's research progress by the end of each Spring quarter beginning in the student's second year in the program (this evaluation is a requirement for the student's registration for the following year) and (d) a yearly thesis committee meeting where the student updates the committee on the status of his/her work. The committee meeting would ideally occur in conjunction with the annual evaluation in the Spring quarter.
4. In consultation with the student, select a series of elective classes to expand the student's knowledge in the areas that are relevant and/or complementary to the student's Thesis research project.

5. Guidance of the student in developing skills to communicate scientific ideas in writing and orally, through participation in journal clubs, research meetings, seminars, symposia and the preparation of fellowship applications and manuscripts.
6. Financial Support: Thesis Advisors are obliged to provide financial support of the student for the duration of their Ph.D. The BMS program will support the first-year students for up to 12 months during their rotations through different research labs. Thereafter, the thesis advisor is expected to be fully responsible for the student (the precise amounts needed to support a student, which vary annually, are clarified at the start of the rotation and stated on the thesis advisor selection form). Faculty without stable funding should not take rotation students unless the rotation is for training purposes and both the student and faculty are aware of the situation. Faculty and students should communicate openly about whether the faculty member can support the student prior to the student rotating in the lab or joining a thesis lab. If the faculty member loses funding during the time a student is in their lab, it is the responsibility of the faculty member to find alternative sources of support.



### III. COURSE SEQUENCE

THE SEQUENCE OF CORE COURSES FOR THE FIRST TWO YEARS:

#### REQUIRED COURSES

YEAR I			
<i>Course No.</i>	<i>Title</i>	<i>Units</i>	<i>Evaluation</i>
<b>FALL QUARTER</b>			
BIOM 200A	Molecules to Organisms: Concepts	6	Letter grade
BIOM 200B	Molecules to Organisms: Approaches	2	Letter grade
BIOM 201	Seminar in Biomedical Research	4	Letter grade
BIOM 202	Laboratory Rotation (one 12-week or two 6-week)	4	S/U
<b>WINTER QUARTER</b>			
BIOM 200C	Intro to Computational Biology for Biomedical Research	4	Letter grade
BIOM 202	Laboratory Rotation (one 12-week or two 6-week)	4	S/U
BIOM 275	Seminars in Pharmacology	2	Letter grade
<b>Choose 1 Core Course</b>			
BIOM 253	Pathogens and Host Defense	3	Letter grade
BIOM 255	Molecular Basis of Drug Action and Disease Therapy	3	Letter grade
BIOM 256	Fundamentals of Cancer Biology	3	Letter grade
<b>SPRING QUARTER</b>			
BIOM 202	Laboratory Rotation (one 12-week or two 6-week)	4	S/U
BIOM 219	Ethics in Scientific Research	1	S/U
BIOM 272 & 274	Seminars in Genetics & MCDB	2	Letter grade
BIOM 285	Statistical Inference ( <i>Spring only</i> )	2	Letter grade
<b>Choose 1 Core Course</b>			
BIOM 252	Genetics and Genomics	3	Letter grade
BIOM 253	Pathogens and Host Defense	3	Letter grade
BIOM 254	Molecular and Cell Biology	3	Letter grade
BIOM 255	Molecular Basis of Drug Action and Disease Therapy	3	Letter grade
<b>SUMMER QUARTER</b>			
<i>Choose lab by June 30th and devote full time to thesis work. Begin working on Research Proposition Exam.</i>			
BMS students are expected to devote full-time effort to laboratory research each summer.			
YEAR II			
<i>Course No.</i>	<i>Title</i>	<i>Units</i>	<i>Evaluation</i>
<b>FALL QUARTER</b>			
BIOM 298	Thesis Research	12	Letter grade
BIOM 296	Research Proposition	4	S/U
<b>WINTER QUARTER</b>			
BIOM 298	Thesis Research	12	Letter grade
*BGGN 500	<i>Graduate Instructional Apprentice or Outreach Activities</i>	4	S/U
<b>SPRING QUARTER</b>			
BIOM 298	Thesis Research	12	Letter grade
	Appointment of Official Thesis Committee		

\* - Teaching requirement: One quarter to be fulfilled after first year in the program

## C. ELECTIVE COURSES

Students are required to take 15 graduate units as electives; of these at least 8 units must be taken for a letter grade (A-F). Note that the Teaching Requirement constitutes a recognized educational experience and counts as 4 units toward the S/U elective requirement. The elective courses are chosen in consultation with the Thesis Advisor. Elective courses in BMS are being developed continuously, driven by scientific developments in biomedical research, and are posted on the BMS website (<http://biomedsci-db.ucsd.edu/curriculum>). Students should also survey the graduate level course listings offered at UC San Diego through TritonLink for options and availability provided by other graduate programs at the University. Students are encouraged to take elective courses throughout the period of their doctoral training. Students can take any course offered on the general campus or in the School of Medicine, as well as applying for UC San Diego Extension courses through the Graduate Division.

## IV. LABORATORY ROTATION PROGRAM

### A. OVERVIEW

The laboratory rotation program is offered to Ph.D. students during their first year of study.

MSTP and PharmD students are expected to have completed laboratory rotations before entering the BMS program. A laboratory rotation is designed to introduce students to new techniques and concepts. It should also expose students to the creative aspects of experimental design. Furthermore, the rotations provide the student with the opportunity to explore potential Thesis research projects and to work with potential Thesis advisors and their research groups.

The specific guidelines for the research rotation program are:

1. The first two rotations must be with a BMS program faculty member listed in the BMS faculty directory [http://biomedsci-db.ucsd.edu/faculty\\_search\\_results?t=all](http://biomedsci-db.ucsd.edu/faculty_search_results?t=all). Students can choose to conduct rotations of *either* 12-weeks or 6-weeks in length. *A 12-week rotation in the Fall quarter is strongly recommended.*
2. Students must devote full time to their rotations and cannot take breaks from the rotation program.
3. The duration of each rotation will be determined by agreement between the student and the rotation advisor *prior to the onset* of the rotation. The duration of each rotation *should not be altered* after the student joins the rotation lab.
4. Students must complete 3 rotations with BMS faculty members. A rotation with a non-BMS faculty member that has an appointment at UC San Diego can be done, contingent upon approval by the student's SPAC advisor and the BMS Chair. A student who wishes to join a lab before completing the rotation program can request an exception from the BMS Chair. Exceptions will be evaluated on a case-by-case basis and not guaranteed to be approved by BMS.
5. It is possible for a student to enter the laboratory of his or her Thesis advisor as early as the first Winter quarter, for example, after the student completes three 6-week rotations.

6. Students must enter laboratories of their Thesis Advisors by the end of Spring quarter (**June 30, 2021**).

An exception to the rotation program policy requires the approval of the SPAC advisor and BMS Chair.

## B. DEVELOPMENT OF A ROTATION PLAN

Students are required to discuss their plans for rotations with their SPAC advisors. The BMS website posts rotation projects submitted by faculty members. ***Access to these project descriptions will be password-protected and only available to BMS students who are participating in the Research Rotation Program.*** It is the student's responsibility to approach faculty members and to make the appropriate arrangements for each rotation, e.g., beginning date, duration, project, readings and laboratory orientation. Once discussed with the potential rotation advisor, the rotation plan must be approved by the student's SPAC advisor before the student can begin the rotation. Students should discuss with potential Rotation Advisors, whether the faculty member has funding to support the student for their thesis research in the event that there is mutual interest in the student joining the laboratory. If funding is uncertain, the student should carefully consider whether he/she should rotate in the laboratory, in consultation with the SPAC advisor. A student can pursue an 'educational' rotation only if he/she has identified a thesis lab prior to completing the BMS rotation requirements; such a rotation does not come with the expectation that the rotation mentor has the resources to support a student for thesis work. All educational rotations require approval by the BMS Chair.

## C. RESPONSIBILITY OF ROTATION RESEARCH ADVISOR

The success of the rotation program depends on thoughtful and conscientious participation by both students and faculty. BMS faculty should post rotation project descriptions on the BMS website if they are interested in having students rotate in their laboratories. Access to the project descriptions will be password-protected and only available to first-year students who are participating in the Research Rotation program. Rotation projects should be constructed to introduce students to new concepts and techniques, allowing students to design and conduct experiments. Rotations should not be designed simply "to get more results" for the labs, although carefully constructed rotation projects will inevitably lead to interesting results. Bench and desk space, reagents, and other necessary materials as well as access to the laboratory personnel should be provided for each rotation student to allow integration of the rotation student into the research laboratory of the faculty. Most importantly, unless designated as an educational rotation (which requires prior approval) faculty should not take rotation students if they do not have funding to support the student's thesis work (see Section II.C.6 above).

## D. REQUIRED NUMBERS OF ROTATIONS/PETITIONS FOR ADDITIONAL ROTATIONS

Each student must complete a minimum of ***three rotations in three different BMS laboratories*** before joining a thesis lab. The first two rotations must be with BMS faculty members. Thereafter, students can choose to rotate through a non-BMS lab, contingent upon the approval of their SPAC advisor and the BMS Chair. BMS students must complete the rotation program by the end of their first Spring quarter and no later than ***June 30th of the 2020/21*** academic year.

Students unable to enter a Thesis laboratory by June 30th must file a petition for additional rotations through the BMS office. The student's SPAC advisor and the BMS Chair will review the petition for additional summer rotations. If the petition is approved, a student can conduct ***1 or 2 (but***

*no more than 2) rotations* in the summer months. Failure to enter a Thesis laboratory by **August 31 of the 2020/21** academic year will result in **termination** of the student's enrollment in the BMS program at that time.

During the first year of the program, students must enroll each quarter in BIOM 202 (Laboratory Rotation, 4 units, S/U grade. After selecting a thesis advisor, students enroll in BIOM 298 (Directed Study, 1-12 units, letter grade). Following Advancement to Candidacy, the course number changes to BIOM 299 (Independent Study, 1-12 units, letter grade).

#### E. BMS DOES NOT SUPPORT SUMMER ROTATIONS FOR ENTERING BMS STUDENTS

All students must start their rotations in the Fall and choose a lab by June 30.

### V. TEACHING REQUIREMENT

Ph.D. students in the BMS program are required to devote one quarter to an approved teaching experience. The approved teaching opportunities are as follows:

- 1) Graduate Instructional Apprentice position in courses administered by the Division of Biological Sciences
- 2) TA Opportunities in other UCSD programs as advertised
- 3) [Salk Mobile](#)
- 4) [Academic Connections](#)
- 5) [STARS Program](#)
- 6) [BioEASI Jail Program](#)

Contact the BMS office for additional information on these opportunities.

As a curriculum requirement for the program, teaching positions are not a source of supplementary income above the regular stipend.

The Teaching Requirement constitutes a recognized educational experience and counts as 4 units toward the S/U elective requirement.

### VI. PROGRESS TOWARD THE DEGREE

#### A. TIME TO DEGREE AND LIMITATIONS

The Graduate Division at UC San Diego has established a general "Policy on Time Limits to the Ph.D." These strictly enforced University-wide time limits are:

Financial support:	7 years (end of Spring Quarter)
Total registered time:	8 years (end of Spring Quarter)

\*The BMS program graduate students are expected to progress in their study with an accelerated time line and are considered in "good standing" when key milestones are completed within the following timeframe:

<b>Research Proposition Exam</b>	2nd year (Fall Quarter)
<b>Advancement to candidacy:</b>	3rd year (Spring Quarter)
<b>Ph.D. thesis defense:</b>	year 5-7

## B. EXTRACURRICULAR ACTIVITIES

Students have opportunities for extracurricular activities both within and outside of the BMS program. Examples include graduate council elected positions, BMS student council, the admissions committee, and the retreat committee. Because these activities can take a substantial commitment of time, first and foremost, students must be in good standing and meet the BMS accelerated time line in order to participate. Additionally, approval from the advisor and the BMS Program must be obtained. Please contact the BMS Office to initiate approvals. As with the required Teaching Assistantships, BMS students are not eligible to receive additional pay above the regular BMS stipend.

## C. SELECTION OF THESIS LABORATORY

Each student selects the laboratory in which she/he will conduct thesis research after completion of the required rotations no later than June 30th of the 2020/21 academic year. Students enroll in BIOM 298 for a letter grade (A-F) in the quarter in which the student enters the thesis laboratory.

The Thesis Advisor selection must be approved by the SPAC Advisor and the BMS Chair. Only faculty members of the BMS program can serve as Thesis advisors. However, if after completing the requirement for three rotations in laboratories of BMS members, a student wishes to work with a non-BMS faculty member physically located at UC San Diego, the student must consult with their SPAC advisor and the BMS Chair to request an exception. Please note that such arrangements require the appointment of a Thesis Committee Co-Chair who is a BMS Program Faculty Member.

Following selection of a thesis laboratory, the responsibility for the student's progress in the program changes from the SPAC advisor to the Thesis Advisor. However, students are encouraged to contact their SPAC advisors at any time for additional information and input, and the SPAC advisor should maintain contact with their advisees at least until they advance to candidacy.

Students who choose non-BMS mentors should:

- Maintain regular contact with the Co-Chair of his/her thesis committee. The student should talk to the Co-Chair at least twice per year for guidance in the program and, in addition, is encouraged to communicate with the SPAC advisor for additional information.
- Stay involved with the BMS Program (e.g. retreat, recruiting events, seminars, journal clubs, Wednesday lunch talks).
- Maintain regular access to seminars and journal clubs to round out training experience.

## D. QUALIFYING FOR A BIOMEDICAL SCIENCES PhD

Qualifying for a BMS PhD consists of two parts, the Research Proposition and the Advancement to Candidacy. Both are focused on the student's work that will comprise the original research whose completion will lead to granting of a PhD degree. The goal of these qualifying steps is to ensure attainment of skills needed to identify significant research problems, collect and integrate diverse scientific information, and to develop sound and creative experimental designs to test a scientific hypothesis.

## 1. RESEARCH PROPOSITION

The Research Proposition is a grant-writing and oral presentation exercise that takes place during the Summer of the 1<sup>st</sup> year and the Fall of the 2<sup>nd</sup> year, *in lieu* of a comprehensive Qualifying Exam. The purposes of the Research Proposition are:

1. To get the student and Thesis Advisor to work together at an early stage to develop the student's Thesis research project
2. To have each student choose potential members of his/her Thesis Committee early in their graduate career
3. To teach the student grant writing and oral presentation skills
4. To test the student's grasp of core material relating to the student's research project
5. To provide the basis for a fellowship application

Satisfactory performance will permit the student to proceed with full time research. Unsatisfactory performance may necessitate re-writing or re-presenting the oral defense, or result in a recommendation that the student withdraw from the program. The BMS Research Proposition Chair, Dr. Tony Yaksh, will guide students through the Research Proposition process and will communicate with the student and Thesis Advisor if any problems arise.

### **Background and Perspective**

The Research Proposition has evolved over the years from a full-year activity in the 2<sup>nd</sup> year to an exam that must be completed by Thanksgiving of the 2<sup>nd</sup> year. It is designed to get students and their Thesis advisors working together as soon as they commit to each other. The Research Proposition includes two parts: i) a written research proposal that is *directly relevant to the student's Thesis project* and ii) an oral examination during which the student will present and defend the proposed research. The written proposal and the oral examination should encompass any and all areas of the first year curriculum deemed relevant to the proposal as well as specialized knowledge required by the proposed research.

**Definition of terms:** This BMS requirement is known as the Research Proposition Qualifying Exam (BIOM 296, 4 credits).

*BIOM 296 Chair.* This person, appointed by the director of the BMS graduate program, oversees this course. For the past 6 years and in 2019, the chair is Tony Yaksh, Ph.D. ([tyaksh@health.ucsd.edu](mailto:tyaksh@health.ucsd.edu)). His staff support is Leanne Nordeman ([lnordeman@health.ucsd.edu](mailto:lnordeman@health.ucsd.edu))

*Thesis Advisor.* This person, selected by the student, provides guidance and laboratory facilities for the student's research leading to the thesis. The thesis advisor must have a UCSD appointment and be appointed in the BMS program. If the thesis advisor is not in the BMS program, then there must be a co-advisor also appointed who does have a BMS appointment.

*Research Proposition Committee.* The Research Proposition committee is composed of the thesis advisor(s) and two members selected by the Thesis Advisor and student. These two members must have an appointment at UCSD (tenure track, adjunct, in residence, research series).

*Qualifying Exam Committee.* This committee consists of the Research Proposition Committee, less the thesis advisor. The chair of this committee (aka Chair of Research Proposition Committee) is appointed by the BIOM 296 Chair.

The Chair of the Research Proposition Committee runs the Qualifying Exam Committee. He/She approves the readiness of the student and the written proposal for the qualifying exam. Thus, the exam cannot proceed unless the chair gives his/her approval.

### **The Written Proposal**

The Thesis advisor should direct the student to the description of the sections of an NIH RO1 submission and mentor the student in grant writing. The written proposal will take the format of a shorter NIH grant, as follows (all lengths refer to single-spaced typing, 0.5" all around margins, 12 point, Arial type):

*Title* – No more than 60 characters, space included

*Summary* – No more than 30 lines

*Narrative* – No more than 3 sentences, explaining in lay terms, the relevance of the proposed research to public health.

*Specific Aims* – 1 page, with clear statement of rationale and hypothesis and no more than three specific aims

*Background and Significance* – 2 to 3 pages

*Preliminary Studies* – 2 to 3 pages; student may include his/her own results, the lab's prior studies, and other published results, if relevant.

*Research Design and Methods* – 5 to 7 pages, including discussions of anticipated outcomes and alternatives.

*Literature Cited* – Between 30-60 citations that support the rationale and the feasibility of the proposed research.

*Graphics* – Use Figures throughout the proposal to summarize the current knowledge, the research ideas, to show data and to depict experimental strategies.

### **Timeline**

1) *At the end of the first Spring quarter*, each BMS student must identify a Thesis Advisor. At this time, the Chair of the Research Proposition Committee will meet with the students to go over the timeline and expectations for the entire process (as detailed below). Exemplary written proposals from the past will be available upon request from the BMS office.

2) *During the Summer*, several things must be accomplished

a) The student and the Thesis advisor will work together to select an area for the student's thesis work, and, under the direction of the advisor, the student will begin to read relevant papers and to develop familiarity with relevant experimental systems and procedures at the bench. The advisor can make the scientific portions of successfully funded grants available to the student, and encourage independent development of some of the themes in those grants.

b) Each student will begin to create an abstract of the proposed research project, centered on a testable hypothesis and a feasible number of specific aims (typically no more than three in total).

c) The advisor and the student must also discuss possible membership of the student's *Research Proposition Committee*, consisting of two other eligible faculty members (see above) with expertise in the specific areas of the proposed research. This committee should be viewed as *potentially* part of the student's future Thesis Committee (although membership can be changed subsequently).

3) *On a date to be determined*, students and the *BIOM 296 Chair* (Dr. Yaksh) will meet to review student progress and the timeline to completion of this qualifying examination. Ideally students should have a draft *Title*, *Abstract* and *Specific Aims* sections of the proposal.

4) *On a date to be determined*, the *Title, Abstract and Specific Aims* will be due, electronically, in the program office. The submission should be in the form of a *pdf* file, sent to [lnordeman@health.ucsd.edu](mailto:lnordeman@health.ucsd.edu).

The *pdf* file must include i) a *cover page* with a membership list of the student's *Research Proposition Committee* (2 members that are not the *Thesis Advisor*), and ii) signature of the student's *Thesis advisor* to signify approval of the submitted *Title, Abstract, and Specific Aims*.

5) *On a date to be determined*, the *BIOM 296 Chair* (Dr. Yaksh) will assign one of its members to serve as the chair of a student's *Qualifying Exam Committee*. This chairman, as a member of the BMS program provides assurance of uniform standards in the proceedings. As noted above, the *Qualifying Exam Committee* consists of the two members of the *Research Proposition Committee* and the member of the BMS program appointed by the *BIOM 296 Chair*. (e.g. every one *except* the *Thesis Advisor*).

6) *On a date to be determined*, the BMS *Research Proposition Committee* representative on each student's *Qualifying Exam Committee* approves the *Title, Abstract and Specific Aims*. This emphasizes that the student must engage the BMS representative in the design and writing of the proposal so that this person can sign off by the determined date.

7) *During the balance of Months to be determined*, The student and *Thesis advisor* work together in the development of the proposal. The student should also work with other committee members to complete writing the proposal to the satisfaction of all members. This is to be a learning experience, with ample give and take and consultation by the student with all members of the *Qualifying Exam Committee*.

8) *On a date to be determined*, the written proposal must meet the approval of all members of the *Qualifying Exam Committee* as evidenced by their signing off on the document. The indication of this signing off should be communicated by the BMS *Research Proposition chair* to Leanne Nordeman ([lnordeman@health.ucsd.edu](mailto:lnordeman@health.ucsd.edu)). **No sign off....no exam!!!**

9) *In a month to be determined, (and not later than a date to be determined)*, each student will present and defend the proposal orally before the *Qualifying Exam Committee*, an exercise in which the *Thesis Advisor* **does not participate**. The examination of the student will be centered on the scientific proposal but may take on the character of a *General or Qualifying Exam*, covering relevant materials from first year courses and additional materials judged to be essential to the proposal. The student is responsible for arranging a place and time suitable to all *Committee members* to conduct the oral exam.

The *Research Proposition representative* to the student's committee will chair the oral presentation, and the student's *Thesis Advisor* will not attend the presentation, to allow assessment of the student's independent performance.

The exam, about 90 minutes in length, longer if necessary, will begin with an oral presentation of the proposed research by the student. This presentation will employ a slide presentation and should not exceed 40 minutes in length, so that ample time remains for questioning. Questions posed by the *Committee* will cover the area of the student's presentation as well as fundamental principles of any and all disciplines of biomedical sciences, especially as they relate to the proposition.



At the end of the oral presentation and examination, the committee will deliberate under direction of the representative of the BMS Research Proposition Committee and deliver critiques of both the written proposal and oral presentation and defense. The results (except those marked “confidential”) shall be conveyed to the student immediately and to the Program office in writing.

Satisfactory performance will permit the student to proceed with full time research. Unsatisfactory performance may necessitate re-writing or re-presenting the oral defense, or result in a recommendation that the student withdraw from the program.

No student will pass the Qualifying Exam (written and oral portions) without the concurrence of the BMS Research Proposition Committee representative. The BMS Research Proposition Chair (Dr. Yaksh) shall be notified of failures or any problems that are noted.

### **Administration**

*Enforcement; Exceptions* – BMS students are expected to complete the entire Research proposition process by Thanksgiving of the second academic year. There may be circumstances requiring exceptions: e.g., illness, or academic difficulties in other areas. Exceptions will be considered on a case-by-case basis by the relevant program officers including the *BIOM 296* Chair, and the *Research Proposition Committee*. In no case will the extension be granted beyond the second Winter quarter. Students will be denied further registration in the Program if the Research Proposition process is not successfully completed before the end of Winter Quarter of their second year.

### **Summary: Schedule for the Research Proposition, 2020/21:**

Introductory group meeting with Dr. Yaksh	TBD
Progress check meeting with Dr. Yaksh	TBD
<i>Title/Abstract/Specific Aims</i> due	
Qualifying Exam Committee named	TBD
Research Prop Committee Chair representative named	TBD
<i>Title/Abstract/Specific Aims</i> and committee approval by Research Prop Committee Chair	TBD
Written Proposal Due (approved by all Qualifying Exam Committee members)	TBD
Oral Examination completed by	TBD

Exceptions to these deadlines require *prior* approval of the *BIOM 296 Chair (Dr. Yaksh)*

### **Grade and Credit**

After the oral examination, an S/U grade recommendation will be made by the Qualifying Exam Committee and forwarded to the Program Office, to the attention of the Chair of the Research Proposition, who will assign the final grade. An S will earn students 4 units of credit in the quarter in which the Research Proposition Qualifying Exam (BIOM 296) is completed. A student who fails to satisfactorily complete all elements of the Research Proposition within the prescribed time will earn a

U grade and will be referred to the Student Standing, Promotions and Advisory Committee of the Biomedical Sciences Graduate Program for appropriate action. Satisfactory completion of the Research Proposition is a prerequisite to beginning the Thesis project.

### **Research Proposition Committee, Winter 2021**

The Research Proposition examination is administered by the BMS Research Proposition Committee, made up of faculty members from the Biomedical Sciences Graduate Program. Tony Yaksh is the Chair ([tyaksh@health.ucsd.edu](mailto:tyaksh@health.ucsd.edu); x33597)

## 2. ADVANCEMENT TO CANDIDACY

### *Selection of a Thesis Committee*

The Graduate Division has specific and strict guidelines on the composition of a Thesis Committee. The Thesis Committee is chosen by the Thesis Advisor and the student, must be approved by the Program Chair and the Dean of Graduate Studies, and is appointed by the Graduate Division.

The Thesis Committee must have a minimum of 5 members and at least three must be BMS faculty. All members may be BMS faculty if two have an appointment in a department in which the Committee Chair has no affiliation, and one of these two is a tenured UC San Diego faculty member (i.e., a Full Professor or Associate Professor). The Chair of the committee must be a member of the BMS program and will typically be the Thesis Advisor. (The rules are complex and may seem to defy logic – please consult with Leanne Nordeman regarding the composition of thesis committees.) You must submit the names of your proposed thesis committee to Leanne BEFORE you schedule your advancement to candidacy.

A list of the Thesis Committee Members must be submitted for approval by the end of the Spring quarter of the second year.

The Thesis Committee serves an advisory role in the conduct of the thesis research, the full committee, assembled according to the Graduate Division rules, serves as the student's Advancement to Candidacy Examination Committee.

The intent of establishing the Thesis Committee early in the student's program and **well before** the Advancement to Candidacy is that its members may serve as informed experts and advisors to the student on various aspects of the thesis research.

Following successful Advancement to Candidacy, the Thesis Committee must meet as a group with the student **at least annually** to evaluate the student's research progress. Students should prepare and circulate to committee members a progress report in advance of each committee meeting.

### *Advancement to Candidacy*

The goal of the Advancement meeting is for the student to apprise the Thesis Committee in a clear and comprehensive manner of his/her thesis research, so that the Committee members can evaluate it and provide advice and direction to the student. **Advancement should be completed by the end of the Spring quarter of the third year.**

The Thesis Committee is concerned with several issues at Advancement:

- a) The research program focuses on a significant problem

- b) Methods are appropriate and rigorous
- c) The research is thoroughly and carefully designed
- d) Pitfalls and alternatives have been considered
- e) The project can be accomplished in a reasonable period of time
- f) Completion of the proposed research will provide appropriate training to support granting the Ph.D, degree
- g) Mentoring is appropriate
- h) Requirements are applied fairly and uniformly to assure high quality of BMS program graduates

To facilitate the Advancement to Candidacy evaluation by the Thesis Committee, the student must prepare and submit to the committee a written description of proposed thesis project. ***This written document must be in the format below – failure to meet the format requirements will prevent successful Advancement.*** The written document must be circulated to the committee at least one week before the Advancement meeting.

Format of Proposal for Advancement to Candidacy:

1. Specific Aims: short paragraph (maximum ½ page) delineating the goal(s) of the proposal
2. Background & Significance: 1 page outlining the necessary background to understand the proposal and justification of significance
3. Preliminary Results: 1 – 2 pages describing progress to date
4. Research Design and Methods: 2 - 3 pages
5. Literature cited

***Items 1-4 should not exceed 8 pages (11 pt font, 1 inch margins).*** Literature cited is not included in the 8-page limit. Inclusion of figures is highly recommended but text and figures should fit in the 8 page limit. The proposal should be comprehensive yet succinctly written. This requires writing, getting feedback (from thesis advisor and co-workers/peers), rewriting, and editing to meet the space limits. This is the normal grant-writing process and students are advised to start work on the proposal early (at least 2 months prior to their advancement date).

During the oral presentation at the Advancement meeting, the student should present the overall plan for the research, but should also summarize work conducted, provide evidence of feasibility, and discuss with the Committee the practicality and appropriateness of the methods. The student should also solicit the Committee’s input on the best strategy with respect to pursuit of his/her thesis work. The Committee will query the student’s familiarity with the literature related to the topic of investigation, as well as assess the student’s critical thinking and ability to develop experimental strategies for addressing specific questions. The decision to Advance a student is entirely in the hands of the Thesis Committee and is based on their evaluation of the written proposal and the performance of the student at the oral presentation.

Successful Advancement to Candidacy requires approval from all Thesis Committee members, acknowledged by their signing the “Report of the Advancement to Candidacy” form after the oral presentation and discussion (the form is available from the BMS office). Advancement to candidacy requires the student to pay a candidacy fee to the cashier prior to submitting the form to the Dean of Graduate Studies for final approval.

**To reiterate the program policy: Students must Advance to Candidacy by the Spring quarter of the third year and must have an annual meeting with their Thesis committee after the Advancement to Candidacy.** The program takes these annual committee meetings very seriously.

They are always in the student's best interests. Students who do NOT have an annual Committee meeting in the prior academic year **will not be permitted to register** in the following Fall quarter.

## E. PRESENTATION AND DEFENSE OF THE DISSERTATION

The presentation and defense of the dissertation is divided into several steps:

1. When the student and advisor agree that the student's research has reached a satisfactory endpoint (*normally during the student's fifth year in the program*), the student convenes his or her Committee for a pre-defense meeting. At this meeting, the student provides the committee an overview of his or her work and an outline of the thesis. All committee members must approve that the body of work accomplished is sufficient for a thesis and that the student can proceed to writing his or her dissertation.
2. Once having obtained the approval to proceed, the student prepares the written dissertation. This document should present the individual student's research and should be organized into a series of chapters including:
  - Introduction (background and a clear statement of the problem being investigated or hypotheses being tested). This should be a stand-alone chapter that serves as a review of the field, puts the research problem in the context of the field, and clearly summarizes the hypotheses being tested.
  - Results - This section usually consists of several chapters, possibly describing published work (use of text of published or submitted papers is acceptable, but mere insertion of reprints is not acceptable) and unpublished information (organized by Methods, Results, Discussion and Analysis in light of the problem or hypotheses stated in Chapter 1). If data from published or submitted papers is presented, the contribution of the student in multi-author papers must be clearly stated. If a figure is included that presents an experiment in which someone else helped or performed the experiment, this must be explicitly stated.
  - Conclusions (discussion of the findings, larger implications of the work, and suggestions for future experiments). This should also be a stand-alone chapter that puts the findings of the research accomplished in the context of the field and describes how the field has been advanced.
  - References

While there are no strict guidelines, a typical thesis is 100 – 200 pages. Students should also consult their Thesis Committee members for input. Typically, preparation of the written thesis requires 2-3 months, depending on whether parts of the thesis have already been published. To save time, students should check with the Graduate Division (858-534-3555) for the University guidelines on the format of the written thesis. The final version must conform to procedures outlined in the University publication- Instructions for the Preparation and Submission of Doctoral and Masters' Theses (available on the Graduate Division website: <http://grad.ucsd.edu/files/academics/BlueBook%202017-18%20updated%204.13.18.pdf>). The Graduate Division has very specific requirements. Check the rules carefully and do so in advance of writing.

3. When the student and the Thesis Advisor agree that the written dissertation is nearing final form, and upon approval of all members of the thesis committee, the student schedules a

public research seminar immediately followed by a closed thesis defense. The Academic Senate requires that the student must submit a draft of the written dissertation to each member of the doctoral committee at least four weeks before the final examination. If recommended by the thesis committee, the closed defense may be held prior to the public presentation. Several months' notice may be needed to find a date compatible with all members of the committee. Note that the public defense must be advertised to the university community in advance of the meeting. Following a successful examination and approval of the thesis, the committee signs the thesis and the Final Report form.

4. A final exit meeting with the Graduate Division is required for the degree. The student submits the approved thesis with the Final Report, and Degree and Diploma application to the Graduate Division. Upon approval by the Dean of the Graduate Division, the student files the dissertation with the University Archivist in the Mandeville Special Collections Library of Geisel Library, who accepts it on behalf of the Graduate Council, a subcommittee of the Academic Senate. Acceptance of the dissertation by the University Archivist and filing the Final Report with the Graduate Division represent the final steps in the completion of all requirements for the Ph.D. in Biomedical Sciences.

#### F. SUMMARY OF TIMELINES:

<b>Research Proposition (BIOM296):</b>	<b>Spring/Year 1 to Fall/Year 2</b>	
<i>Task</i>	<i>Time</i>	<i>Responsible parties</i>
Research Proposition Meetings, Abstract, Committee Assignment, Oral Exam	Summer and Fall quarter	Students and BIOM 296 Chair – Tony Yaksh, Thesis Advisor, and Research Prop Committee
<b>Advancement to Candidacy:</b>	<b>Spring/Year 2 to Spring/Year 3</b>	
<i>Task</i>	<i>Time</i>	<i>Responsible parties</i>
Selection of Thesis Committee Consisting of 5 members, complying with Graduate Division regulation. <i>Submit proposed Committee to Leanne</i>	Spring quarter of student's second year	Student and Thesis Advisor
Submission of a written proposal to the Thesis Committee	One week before the Advancement to Candidacy meeting	Student and Thesis Committee
Advancement to Candidacy	Spring quarter of student's third year.	Student and Thesis Committee
<b>Thesis Defense:</b>	<b>BMS recommendation- Spring/Year 5 to Fall/Year 6</b>	
<i>Task</i>	<i>Time</i>	<i>Responsible parties</i>
Pre-defense meeting	BMS recommendation- 6 months prior to writing the Thesis	Student and Thesis Committee
Submission of written Thesis	BMS recommendation- 2 weeks prior to public defense of Thesis	Student

	Academic Senate recommendation- four weeks prior to public defense of Thesis	
Thesis defense	BMS recommendation- No later than the end of the fifth spring quarter (Note: Graduate Division deadline- No later than the end of the seventh Spring quarter)	Student and Thesis Committee
Submission of Approved Thesis	(Necessary for Degree)	Student

## VII. REPORTS AND EVALUATIONS

### A. ANNUAL COMMITTEE REVIEW OF FIRST-YEAR PERFORMANCE

The Student Standing, Promotions and Advisory Committee (SPAC) meets periodically to review the performance of each first-year student in laboratory rotations, formal class work and in meeting the degree requirements. At the end of Spring Quarter of the first year, the student's SPAC advisor evaluates the student's performance with a written evaluation submitted to the Program office. Where necessary, the SPAC advisor consults directly with the student. The importance of this evaluation is emphasized by the fact that it forms the basis of a recommendation to the BMS Chair concerning whether the student should continue in the degree program at the end of the first year.

### B. ANNUAL REVIEW OF PERFORMANCE BEYOND FIRST-YEAR

During the Fall Quarter of the Second Year, the performance of the student on the Research Proposition Exam will be evaluated by the members of the Research Proposition Committee, and the results will be conveyed in writing to the student, the Thesis Advisor and the Program Office. At the end of the Spring Quarter of the Second Year, the Thesis Advisor will submit a written evaluation of the student's progress. ***In all subsequent years, the annual review of the student's performance should coincide with an annual thesis committee meeting to be held in the Spring Quarter.*** This evaluation should indicate the degree to which students are, overall, progressing satisfactorily in their thesis work, document their strengths and weaknesses and provide guidance for future development. These evaluations should contain cogent and clear advice to students. This evaluation is made available to students to read and respond as desired. A copy of this evaluation is sent to the Graduate Division to be made part of the students' permanent files. Students must participate in this annual evaluation by discussing their progress with advisors and thesis committee members and by adding their written comments to the evaluation. When completed, the evaluation must be approved by the BMS chair.

### C. SUMMARY OF ANNUAL REVIEW TIMELINE

\*\*\*\* The students and faculty should note that Graduate Division must have on file a satisfactory Spring Evaluation before financial support for the following Fall Quarter will be approved. \*\*\*\*

<u>Year</u>	<u>Deadline of Review</u>	<u>Responsible parties</u>
Year-1	End of Spring Quarter	SPAC advisors
Year-2	End of Spring Quarter	Thesis Advisors
Year-3	End of Spring Quarter	Thesis Committees
Year-4	End of Spring Quarter	Thesis Committees
Year-5	End of Spring Quarter	Thesis Committees
Year-6 (if applicable)	End of Spring Quarter	Thesis Committees

## VIII. STUDENT AWARDS

Students are encouraged to apply for external competitive fellowships. Students who obtain such awards will receive a one-time \$2,000 bonus provided by BMS.

In addition, the following awards recognize excellence in the performance of students during their Ph.D. training and are overseen by the BMS Awards Committee:

### A. OUTSTANDING DISSERTATION AWARD

The Outstanding Dissertation Award recognizes and rewards a graduate student whose thesis has been identified by the BMS Program Awards Committee, following nomination by the Thesis Advisor and one committee member, as outstanding among all those submitted during the previous academic year (July 1-June 30).

#### *Award*

The recipient will receive a cash award of \$1,000 and be invited to speak at the annual BMS retreat.

#### *Eligibility*

To be eligible for the award, the nominated student must have defended his or her thesis during the period July 1, 2020 – June 30, 2021.

#### *Nomination Procedure*

The nomination should include letters from the thesis advisor and one committee member. The letters should comment on:

- Research achievements of the student that comprise their the
- Scholarship demonstrated in the written thesis

## IX. POLICIES ON STUDENT SUPPORT

A standard support level (\$34,500 annually or \$2,875/month) has been set by the BMS Program for all BMS graduate students.

During the first year, the BMS program will be responsible for supporting the student's monthly stipend and tuition and fees for *three quarters* (Fall, Winter and Spring). Thereafter, BMS students will be supported by their Thesis Advisors, by Fellowships and/or by Training Grants.

*The thesis advisor is responsible for the student's support as soon as the student enters the advisor's laboratory. Students should discuss their intentions with potential Thesis Advisors in advance and during the rotation periods to avoid funding problems that would prohibit students from joining the laboratories of interest.*

**The exact financial requirements for supporting a student in the BMS program are clarified at the time of the student's rotation and vary from year-to-year due to changes in stipend level, student fees, etc.**

The BMS Program does not permit students to have outside jobs and requires that students devote full-time effort to their Ph.D. thesis research projects. Earnings from activities such as Instructional Assistantships may be used to bring stipends up to the standard stipend level, but they may not to be used to increase earnings above the standard support level.

## **X. TERMINAL MASTERS DEGREE**

The BMS program offers a Terminal Master's degree to students who do not complete the Ph.D. requirements but who satisfactorily complete the core and advanced course work requirements, three laboratory rotations, the Research Proposition examination, and have a GPA of at least 3.0 (Graduate Division requirement). Award of the degree requires approval of the student's advisor and the Chair of BMS.

## **XI. LEAVES OF ABSENCE**

A student is expected to be in continuous residence until the thesis is awarded. Absence from the university in excess of four working days for any type of personal reasons require the prior approval of the student's SPAC advisor (if prior to selection of a Thesis laboratory) or the Thesis Advisor. Vacations or time away from the lab may be taken only upon approval by the Thesis Advisor. First-year students should not schedule vacations prior to selecting a thesis laboratory.

A student may request a leave of absence for a maximum of one year when conditions established by the Graduate Division are met. If the student does not return from leave by the Graduate Division deadline date, he or she must reapply for admission. Extension of a leave of absence beyond one year will be made only under exceptional circumstances. Leaves of absence for childbearing and parenting (primary responsibility for care of children under 5 years of age) will be granted for up to three quarters. Approved leaves for these purposes will not count in a full year (3-quarter) leave limit applicable to all graduate students. Professional obligations, e.g. post-graduate training or service by physicians, will not be considered as reasons for extension of a leave of absence. Students who are considering a leave are encouraged to consult with the BMS staff to discuss requirements and options.



## **XII. SUPPORT SERVICES**

### **UCSD Return to Learn**

<https://returntolearn.ucsd.edu/>

### **COVID-19 Information for Students**

<https://vcsa.ucsd.edu/news/covid-19/>

### **COVID-19 Testing Information for Students**

<https://returntolearn.ucsd.edu/return-to-campus/testing-and-screening/index.html#Students-residing-on-or-near-ca>

### **Graduate Division**

Student Services Center, 4<sup>th</sup> floor

<http://grad.ucsd.edu>

The UC San Diego Graduate Division is the central resource for all matters related to graduate education at UC San Diego. They provide a wide range of services to prospective and existing UCSD graduate students and campus departments on all graduate education matters including diversity outreach and recruitment; graduate admissions; enhancing the quality of graduate student life; student financial support, fellowships, and traineeships; graduate student advising and advocacy; retention programs; development and oversight of graduate degree programs; interpretation and application of policies and common standards of high quality in graduate programs across campus; collaboration with Graduate Council and Graduate Student Association; administrative oversight of the Teaching and Learning Commons; and coordination of graduate commencement activities.

### **Grad Life**

<https://gradlife.ucsd.edu/about/index.html>

Grad Life is a resource hub for all UC San Diego graduate students. The Grad Life website and social media accounts are managed by the Grad Life Intern, a current graduate student working out of the Graduate Division. The Grad Life Intern works in collaboration with campus organizations, faculty, staff and students to bring essential programming, resources and communication to UC San Diego graduate students in an effort to improve the overall campus environment.

### **Graduate Student Association (GSA)**

4th Floor of Price Center East, Suite 4630

<http://gsa.ucsd.edu/>

The GSA is the official representative body of graduate and professional student at UCSD, which exists to advocate for the rights and interests of our diverse community, to provide for the enjoyment of social, cultural, and service-oriented events, and for the betterment of academic and non-academic life of all graduate and professional students at UC San Diego.

### **Student Health Services Center**

Library Walk West of the Price Center

<http://studenthealth.ucsd.edu/>

Student Health Services provides quality primary medical care, including urgent care and support services such as laboratory, pharmacy, and x-ray. Comprehensive primary health care is provided without charge during the academic year and summer for all full time registered graduate students. Student Health Services is fully accredited by AAAHC. Students are encouraged to seek advice on any health problem. Professional and confidential attention is assured. Most services require an appointment. There are same-day appointments available for urgent needs. Advanced appointments are available for routine care. Consult the website for current hours.

### **Counseling & Psychological Services (CAPS)**

Central Office: (858) 534-3755

After-Hours Crisis Counseling (24 Hours): (858) 534-3755

Central Office: Galbraith Hall 190

<http://caps.ucsd.edu/grad.html>

Counseling & Psychological Services provides the following services to registered undergraduate, graduate and professional school students.

- High quality, culturally-sensitive, and confidential counseling services, including individual, couples, family and group counseling, crisis/urgent care interventions, and referral services **FREE** of charge.
- Psychiatric services and consultation.
- Psycho-educational workshops and drop-in forums grounded on the latest science of optimal well-being and peak performance to support students in their life and leadership skills acquisition.
- A Wellness Peer Education Program, nationally recognized as a model of best practice for empowering students to develop leadership and helping skills.
- Campus mental health and prevention programming focused on stigma-discrimination reduction and community-building.
- Student mentoring and advocacy.
- Outreach and consultation services to faculty, staff and University administrators.
- An APPIC-approved post-doctoral fellowship training program.

During the summer, students who were enrolled the previous Spring quarter and are intending to return in the Fall quarter are eligible for services.

### **Office for Student with Disabilities (OSD)**

University Center 202

<https://students.ucsd.edu/well-being/disability-services/index.html>

The Office for Students with Disabilities (OSD) at UC San Diego works with:

- Undergraduate, graduate, and professional school students with documented disabilities
- Faculty and staff who provide accommodations to students in classrooms and labs
- Student veterans

### Students

The Office for Students with Disabilities (OSD) at UC San Diego works with undergraduate, graduate, and professional school students with documented disabilities, reviewing documentation and, through an interactive process with the student, determining reasonable accommodations. Disabilities can occur in the following areas: psychological, psychiatric, learning, attention, chronic health, physical,

vision, hearing, acquired brain injuries, and autism, and may occur at any time during a student's college career. We encourage you to contact the OSD as soon as you become aware of a condition that is disabling so that we can work with you.

### Faculty and Staff Supporting Students

The OSD also serves as a resource to UC San Diego faculty and staff who are providing accommodations to students in classrooms and labs across campus, and we have developed working relationships with other offices on campus to streamline services to students with disabilities. The OSD welcomes opportunities to provide disability education to departments and programs, and to develop internal processes that better serve students with disabilities.

### Student Veterans

Finally, the OSD recognizes the unique challenges that some students with disabilities face, including student veterans, as disability impacts all areas of life (physical, mental, academic, and social). We invite you to dialogue with us in a safe, confidential environment, and we look forward to hearing from you.

### **Sexual Assault Resource Center (SARC)**

Student Services Center, 5<sup>th</sup> floor, Suite 500

<http://care.ucsd.edu>

CARE at the Sexual Assault Resource Center is UC San Diego's confidential advocacy and education office for sexual violence and gender-based violence (dating violence, domestic violence, stalking). CARE provides violence prevention education for the entire UCSD campus and offers free and confidential services for students, staff and faculty impacted by sexual assault, relationship violence and stalking.

### **Office of the Ombuds**

<http://www.ombuds.ucsd.edu/>

The UC San Diego Office of the Ombuds provides confidential, neutral, and informal dispute resolution services for the UC San Diego community. The office is available to assist faculty, staff, students, non-Senate academics, postdoctoral trainees, and employees of UC San Diego Health System (UC San Diego Medical Center and related facilities) who seek guidance with the resolution of academic or administrative issues and disputes. Its services supplement, but do not replace, other administrative processes at the University. The office works to facilitate communication and assist parties in reaching mutually acceptable agreements in order to find fair and equitable resolutions to concerns that arise at the university. The ombuds office also reports general trends of issues and provides feedback throughout the organization, and advocates systems change when appropriate without disclosing confidential communications.

The ombuds office functions independently with respect to case handling and issue management and reports to Ethics and Compliance in the Chancellor's office for administrative and budgetary purposes but not regarding the substance of matters discussed in the office. Its services supplement other administrative processes and formal grievance procedures available at the University. When providing services, the ombuds staff adheres to The International Ombudsman Association Code of Ethics and Standards of Practice which may be found on our website.

# GUIDELINES FOR BMS M.D./Ph.D. CANDIDATES

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## I. ADMISSIONS REQUIREMENTS

M.D./ Ph.D. applicants must meet all requirements for graduate admission to the Biomedical Sciences Program, except that the MCAT exam scores may be submitted in place of the GRE exam scores. Copies of Academic Records may be submitted by the School of Medicine. Students are evaluated during their second year of study for matriculation into the Ph.D. program during their third year.

## II. COURSE WORK AND ROTATIONS

- A. M.D./Ph.D. students are required to take the Fall seminar course (BIOM 201), Ethics in Scientific Research (BIOM 219) and Statistical Inference in the Medical Sciences (BIOM 285) in the Spring quarter. M.D/Ph.D students must also complete all Biomedical Sciences advanced course work (electives) as required of other graduate students in the program. Graded core courses for first year graduate students in the Biomedical Science Program are not required for UC San Diego medical students. The applicability of previous course work toward the Biomedical Sciences Graduate Program course requirements will be evaluated on an *ad hoc* basis. However, elective requirements (15 units total; 8 for a letter grade) are the same for all students.
- B. M.D./Ph.D. students must have conducted research in at least two laboratories of UC San Diego faculty other than their thesis advisor. Laboratory rotations taken during elective time in medical school can fulfill this requirement. At least one laboratory experience must have been in the laboratory of a member of the BMS Program. Based on their rotation experience, M.D./Ph.D. students admitted into the BMS program must be able to choose a thesis lab during the summer after their 2<sup>nd</sup> year of medical school and be ready to participate in the Research Proposition Exam as they begin the graduate program.
- C. M.D./Ph.D. students are required to successfully complete the Research Proposition Exam during the Fall quarter of their first year of Ph.D. training in the BMS Graduate Program (which would generally be the year after completion of the first two years of medical school). This is a requirement for further advancement in the graduate program. M.D/Ph.D. students are also expected to successfully complete the Advancement to Candidacy Exam by the end of their second year in Ph.D. training and must complete the exam by the end of the Fall quarter of their third year of Ph.D. training. Failure to complete these requirements on time will result in blockade of registration and financial support until the requirement is met.
- D. M.D./Ph.D. students must also satisfy the one-quarter Teaching/Outreach requirement as described in Section V of the general guidelines.

### **III. REGISTRATION REQUIREMENTS**

- A. The Graduate Council imposes the following requirements:
  - 1. If in any given quarter a student is spending the majority of his/her time within the graduate program the student must be registered as a graduate student that quarter.
  - 2. To receive the Ph.D. degree a student must be registered as a graduate student for a minimum of 6 academic quarters, three of which are continuous. Graduate Division has waived the requirement that students be registered as graduate students in the quarter they receive their degree if they are registered in the School of Medicine during that quarter.
- B. The School of Medicine requires, for medical licensing, that students be registered for a minimum of 11 quarters in the medical school.

### **IV. COMPLETION OF RESEARCH WORK/RETURN TO CLINICAL TRAINING**

All requirements for the Ph.D. degree must be completed prior to leaving the graduate program to return to clinical training (including junior year core clerkships). This includes passing of the Research Proposition examination, teaching requirement, Advancement to Candidacy, writing and defense of the thesis, and submission of the completed thesis manuscript to the library, according to Graduate Division guidelines. With the above requirements in mind, a typical quarterly program of registration for an M.D./Ph.D. student in the Biomedical Sciences Graduate Program is shown below. The normal time to degree for M.D./Ph.D. students is 7 years.

## SCHEDULE FOR M.D./Ph.D. STUDENTS

Summer	Fall	Winter	Spring
<b>YEARS 1 and 2 M.D.</b>			
Full time registration (M) and course work in School of Medicine 2 or 3 laboratory rotations completed in Summers of years 1 and 2 of Medical School <b>Research Proposition</b> completed during Summer/Fall of year 1 of Ph.D.			
<b>YEAR 3 M.D. (Year 1 of Ph.D.)</b> * †			
Final Lab rotation (If necessary) (M*) Research Proposition (G)	Thesis Lab (G) BIOM 201 Research Proposition (G)	Thesis Lab (G)	Thesis Lab (G) BIOM 219 & BIOM 285 (G) Appointment of an Official Thesis Committee (G)
<b>YEAR 4 M.D. (Year 2 of Ph.D.)</b> * †			
Thesis Lab (M*)	Thesis Lab (G)	Thesis Lab (G)	Thesis Lab (G) Advancement to Candidacy
<b>YEAR 5 M.D. (Year 3 of Ph.D.)</b> * †			
Thesis Lab (M*)	Thesis Lab (G)	Thesis Lab (G)	Thesis Lab (G) Ph.D. Defense (G)
<b>YEAR 6 M.D.</b>			
Clinical Core (M)	Clinical Core (M)	Clinical Core (M)	Clinical Core (M)
<b>YEAR 7 M.D.</b>			
Clinical Electives (M)	Clinical Electives (M)	Clinical Electives (M)	Clinical Electives (MD)

(M) = Registration in School of Medicine

(G) = Registration in Graduate Program

(M\*) = Full time laboratory work, but registration in the School of Medicine

\* = The elective courses may be taken at any time during graduate studies

The graduate program does not require registration during the summer; these quarters can be counted toward the School of Medicine 11 quarter registration minimum.

# GUIDELINES FOR BMS Pharm.D./Ph.D. CANDIDATES

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## I. ADMISSIONS REQUIREMENTS

PharmD/PhD applicants must meet the requirements established by the BMS Program for admission of PharmD/PhD applicants. GRE test scores are not required and Copies of Academic Records may be submitted by the School of Pharmacy. Students are evaluated during their second year of study for matriculation into the Ph.D. program during their third year.

## II. COURSE WORK AND ROTATIONS

- A. PharmD/PhD students are required to take the Fall seminar course (BIOM 201) and to complete all Biomedical Sciences advanced course work (electives) as required of other graduate students in the program. Graded core courses for first year graduate students in the Biomedical Science Program are not required for UC San Diego PharmD students. The applicability of previous course work toward the Biomedical Sciences Graduate Program course requirements will be evaluated on an *ad hoc* basis. However, elective requirements (15 units total; 8 for a letter grade) are the same for all students.
- B. PharmD/PhD students must have conducted research in at least two laboratories of UC San Diego faculty other than their thesis advisor. PharmD/PhD students will be guided to complete these laboratory rotations taken during the summers before the first year, between the first and second years, or between the second and third years of the pharmacy school curriculum to fulfill this requirement. At least one laboratory research experience must have been in the laboratory of a member of the BMS Program. The evaluations of student performance during these rotations will be an important part of the application file for acceptance into the BMS program.
- C. PharmD/PhD students are required to successfully complete the Research Proposition Exam during the Fall quarter of their first year of PhD training in the Biomedical Sciences Graduate Program. This is a requirement for further advancement in the graduate program. PharmD/PhD students are also expected to successfully complete the Advancement to Candidacy Exam by the end of their second year in Ph.D. training and must complete the exam by the end of the Fall quarter of their third year of Ph.D. training. Failure to complete these requirements on time will result in blockade of registration and financial support until the requirements are met.
- D. The significant teaching and outreach experience that is comprised within the PharmD curriculum will satisfy the 1-quarter Teaching/Outreach requirement as described in Section V of the general guidelines. Thus PharmD/PhD students will not be required to perform additional teaching or outreach during their research studies in the BMS program.

### **III. REGISTRATION REQUIREMENTS**

- A. The Graduate Council imposes the following requirements:
  - 1. If in any given quarter a student is spending the majority of his/her time within the graduate program the student must be registered as a graduate student that quarter.
  - 2. To receive the Ph.D. degree a student must be registered as a graduate student for a minimum of 6 academic quarters, three of which are continuous.
- B. The School of Pharmacy requires, for licensing, that students be registered for a minimum of 12 quarters in the pharmacy school.

### **IV. COMPLETION OF RESEARCH WORK/RETURN TO PHARMACY TRAINING**

All requirements for the Ph.D. degree must be completed prior to leaving the graduate program to return to pharmacy training. This includes completion of the Research Proposition and the Advancement to Candidacy examinations, writing and defense of the thesis, and submission of the completed thesis manuscript to the library, according to Graduate Division guidelines. With the above requirements in mind, a typical quarterly program of registration for a PharmD/PhD student in the Biomedical Sciences Graduate Program is shown below. The normal time to degree for PharmD/PhD students is 7-8 years.



## SCHEDULE FOR Pharm.D./Ph.D. STUDENTS

Summer	Fall	Winter	Spring
<b>YEARS 1 and 2</b>			
Full time registration (P) and course work in the Pharmacy School 2 or 3 laboratory rotations completed in summers between years 1-2 and years 2-3 (*P)			
<b>YEAR 3 (Year 1 of Ph.D.)</b> ☛			
Final Lab rotation (If necessary) (P*) Research Proposition (G)	Thesis Lab (G) BIOM 201 Research Proposition (G)	Thesis Lab (G)	Thesis Lab (G) BIOM 219 BIOM 285 Appointment of an Official Thesis Committee (G)
<b>YEAR 4 (Year 2 of Ph.D.)</b> ☛			
Thesis Lab (M*)	Thesis Lab (G)	Thesis Lab (G)	Thesis Lab (G) Advancement to Candidacy
<b>YEAR 5 (Year 3 of Ph.D.)</b> ☛			
Thesis Lab (M*)	Thesis Lab (G)	Thesis Lab (G)	Thesis Lab (G) Ph.D. Defense (G)
<b>YEAR 6 (Year 3 of Pharm. D.)</b>			
Pharmacy (P)	Year 3 Curriculum	Year 3 Curriculum	Year 3 Curriculum
<b>YEAR 7 (Year 4 of Pharm. D.)</b>			
Pharmacy (P)	Clinical Core		Clinical Core

- (P) = Registration in SKAGGS School of Pharmacy  
 (G) = Registration in Graduate Program  
 (P\*) = Full time laboratory work, but registration in the School of Medicine.

The graduate program does not require registration during the summer; these quarters can be counted toward the School of Pharmacy 12 quarter registration minimum.

## **UC San Diego Principles of Community**

The University of California, San Diego is dedicated to learning, teaching, and serving society through education, research, and public service. Our international reputation for excellence is due in large part to the cooperative and entrepreneurial nature of the UC San Diego community. UC San Diego faculty, staff, and students are encouraged to be creative and are rewarded for individual as well as collaborative achievements.

To foster the best possible working and learning environment, UC San Diego strives to maintain a climate of fairness, cooperation, and professionalism. These principles of community are vital to the success of the University and the well being of its constituents. UC San Diego faculty, staff, and students are expected to practice these basic principles as individuals and in groups.

- We value each member of the UC San Diego community for his or her individual and unique talents, and applaud all efforts to enhance the quality of campus life. We recognize that each individual's effort is vital to achieving the goals of the University.
- We affirm each individual's right to dignity and strive to maintain a climate of justice marked by mutual respect for each other.
- We value the cultural diversity of UC San Diego because it enriches our lives and the University. We celebrate this diversity and support respect for all cultures, by both individuals and the University as a whole.
- We are a university that adapts responsibly to cultural differences among the faculty, staff, students, and community.
- We acknowledge that our society carries historical and divisive biases based on race, ethnicity, sex, gender identity, age, disability, sexual orientation, religion, and political beliefs. Therefore, we seek to foster understanding and tolerance among individuals and groups, and we promote awareness through education and constructive strategies for resolving conflict.
- We reject acts of discrimination based on race, ethnicity, sex, gender identity, age, disability, sexual orientation, religion, and political beliefs, and, we will confront and appropriately respond to such acts.
- We affirm the right to freedom of expression at UC San Diego. We promote open expression of our individuality and our diversity within the bounds of courtesy, sensitivity, confidentiality, and respect.
- We are committed to the highest standards of civility and decency toward all. We are committed to promoting and supporting a community where all people can work and learn together in an atmosphere free of abusive or demeaning treatment.
- We are committed to the enforcement of policies that promote the fulfillment of these principles.

We represent diverse races, creeds, cultures, and social affiliations coming together for the good of the University and those communities we serve. By working together as members of the UC San Diego community, we can enhance the excellence of our institution.