



STANFORD

MCCP

MOLECULAR &
CELLULAR PHYSIOLOGY



Graduate Student Handbook
2020-21

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Molecular & Cellular Physiology Contact Information

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 - * Miriam Goodman
 - * Rich Lewis
 - * Georgios Skiniotis

MCP Faculty

The Department consists of 13 primary and jointly appointed faculty, 4 courtesy faculty, and 2 emeritus professors.

- Axel Brunger
- Steve Chu
- Liang Feng
- K. Chris Garcia
- Miriam B. Goodman
- Brian Kobilka
- Richard Lewis
- Daniel V. Madison
- Merritt Maduke
- Lucy O'Brien
- Georgios Skiniotis
- Thomas Sudhof
- William Weis

Courtesy Appointments

- Ron Dror
- John Huguenard
- Anthony Ricci

Link to current faculty and interests: <http://med.stanford.edu/mcp/research.html>

Program Overview

The Department of Molecular & Cellular Physiology offers a course of study leading to the Doctor of Philosophy (Ph.D.) degree. The program does not offer undergraduate (e.g. bachelor) degrees and does not offer a course of study intended to lead to a master's degree. The program of study is designed to prepare students for careers in research and allied fields. The major emphasis is training in research. Students work closely with a dissertation adviser and members of a research group on novel and important biological problems at the cellular and molecular level.

The Department maintains a series of events and policies to promote interaction among students, postdoctoral fellows, and faculty members, including a seminar series, an annual retreat, 'Science Fridays', which is a biweekly scientific and social gathering, and access to all labs and facilities. In addition to offering students access to all of the faculty members, these arrangements encourage collaboration between groups and have fostered the development of many new technologies. Predoctoral training begins in the fall of each year but occurs in all 4 quarters of the academic year.

The faculty teach courses in physiology, cell biology, neuroscience, biophysics, and molecular biology, and advanced courses in specialized areas are also offered. The program of study for individual students is created in consultation with the adviser to best fulfill each student's educational goals. Some opportunities for students to gain direct teaching experience may be available within the Department's offered courses, or the courses of other Departments.

For matters involving setting and implementing policy of the graduate program, **the Department has established a Graduate Program Committee (GPC), currently made up of Daniel Madison, Liang Feng, Brian Kobilka, Richard Lewis and Merritt Maduke.** The committee will also include a non-voting student representative who will be an enrolled Ph.D. Candidate in the MCP doctoral program. This representative may attend the committee meetings except at those times, in the interests of privacy and confidentiality, the committee may be required to discuss an individual student. This committee, and ultimately the Department Chair, will be the Departmental authority on matters of Ph.D. program requirements, policy, curriculum, student performance, and other matters related to the program. However, routine matters such as approval of particular courses in a student's program, the makeup of a qualifying examination committee, etc., can be approved by the DGS alone. For less routine matters, the committee as a whole may be consulted.

This guidebook may be taken as a guide but may not always be perfectly updated to reflect current policy, since committee decisions may occur, and update of the handbook may lag behind those decisions. The DGS will always make a good-faith effort to advise the student population when important updates occur, and when the handbook is updated, but students with policy questions should always consult the DGS when question of current policy arise. However, student should note that it is program policy that students are subject to the requirements as published in this handbook at the time they first register in the program (Autumn Quarter in year 1 of study). As requirements are updated, students may choose to follow the new requirements, or remain with their original requirements.

Graduate Advising

Before a dissertation advisor is chosen, Director of Graduate Study (DGS: Daniel Madison) will be a student's program advisor and remains available for counseling and advice throughout the studentship. Upon joining a laboratory for dissertation research at the end of the first year of study, the head of that laboratory will be the student's primary faculty advisor and the student's first resource for advising. Students at the end of their first year and beyond should also use their qualifying or dissertation committee for advice on matters of science. Students are encouraged to use any MCP faculty member as an advising resource on any issue, at any stage of their studentship.

All students will have a minimum of two formal advisory meetings annually: one with their advisor, to set plans and expectations for their scientific research, and to review progress and a meeting the DGS to review academic progress. Students must also meet with their qualifying or dissertation committee at least annually pre-TGR and at least semi-annually when TGR.

The role of primary/dissertation faculty advisors includes:

- Serve as intellectual and professional mentors to their graduate students
- Provide knowledgeable support concerning academic and non-academic policies that pertain to graduate students
- Help to prepare students to be competitive for their chosen careers
- Maintain a high level of professionalism in the relationship
- Establish and collaboratively maintain expectations of the work and of the advisor/advisee relationship

Each faculty member may have their own approach to mentoring and developing their graduate students and post-doctoral trainees, however faculty members are expected to meet routinely with and monitor the progress of their students, and actively facilitate their scientific growth.

Graduate students are also active partners in their own education. Graduate students are expected to:

- Foster their own scientific and academic growth, in collaboration with their primary advisor.
- Take primary responsibility for informing themselves about policies, requirements, and practices governing their financial support, degree and course requirements, research activities, and conflict resolution.
 - Monitor their progress relative to the milestones stated in this handbook, and document this in the Graduate Student Tracking (GST) system.
 - Seek help when issues arise in meeting any of the milestones.
 - Be aware of and take advantage of Stanford resources to meet their own goals.

- Exercise high professional standards in all aspects of their work, including both academic and social spheres.
- Seek advice from the DGS, the Chair or others if they need further help or wish to change advisors.

Individual Development Plans (IDP) and Annual Meetings

The student’s Individual Development Plan (IDP) and annual planning meeting with their advisor are intended to help the student:

- **Take ownership** of their training and professional development.
- **Pause and reflect!** Amidst daily research activities, it is easy to lose sight of longer-term goals.
- **Think intentionally** about the short-, mid- and long-term training and development goals.
- **Identify** and use resources to help the student achieve their goals.
- Have open and direct dialogue with their mentor(s).
- Establish clear expectations/steps.

As of March 31, 2014, the Committee on Graduate Admissions and Policy (CGAP) has adopted a new policy requiring all Biosciences PhD candidates and their mentors in the Schools of Medicine and H&S to create and discuss their Individual Development Plans (IDPs) on an annual basis. This annual IDP meeting is in addition to any required Committee Meetings (as noted above). Students and their advisors share responsibility for completing the IDP. The table below will assist you with key timelines in maintaining satisfactory compliance with these meeting requirements.

Key Deadlines:

Actions	First Year Students	All Other Students
Schedule a planning and mentoring meeting with your advisor	Within 30 days of joining your thesis lab	Before June 1
Download and complete the appropriate IDP form.	Before your meeting	Before your meeting
Hold your annual planning/mentoring meeting with your advisor	Within 30 days of joining your thesis lab	August 1
Verify that you and advisor met to discuss your IDP	Within 30 days of joining your thesis lab	August 1

Academic Requirements

Course Requirements

The graduate program in the Department is highly oriented towards hands-on research; working within the group of the dissertation advisor, so required coursework is modest. The course requirements for the program are as follows:

- **MCP 207: MCP Boot camp (Aut)**
- **BIOS 200: Foundations in Experimental Biology (Aut)**
- **MCP 208: Journal Club and Professional Development (First 3 years, A/W/S quarters)**
- **MCP 256: How Cells Work: Energetics, Compartments, and Coupling in Cell Biology (Spr)**
- **MCP 221: Advanced Cell Biology (Win)**
- **Two of the following four courses**
 - **The Nervous System (NBIO 206) Or Neuroplasticity (Bio 204)**
 - **Advanced Genetics (GENE 205)**
 - **Biological Macromolecules (BIOC 241)**
 - **Molecular and Cellular Immunology (Bio 230)**
- **The Responsible Conduct of Research (MED 255).**
- **Advanced graduate courses or minicourses for a minimum of 6 units total. These courses do not need to be MCP courses but must be in a relevant scientific topic and approved by the Director of Graduate Studies.**
- **Attend MCP Seminar Series**
- **Attend MCP Annual Retreat**
- **Any additional courses required by your training grant, or Qualifying Committee.**

Students should complete their required courses within the first two years of study. Exceptions will be made for cases where it was impossible to schedule courses because they were not offered within a student's first two years. Students may petition the DGS for variances in the specific courses required, and such petitions may be granted in special circumstances, in cases where a student's progress is otherwise exemplary. The DGS may consult with the MCP Graduate Program Committee on these variances.

Students may, of course, choose to take more than the required number of courses as long as they remain within their number of allowed units/quarter (10), and so long as the number of courses taken does not become excessive to the point where it interferes with satisfactory progress in other aspects of the degree program. Students may no longer take classroom coursework for credit after attaining TGR status (usually in the spring of 4th year of study), except as may be allowed by University policy.

Covid Policy:

Due to the restrictions imposed by the Novel Corona Virus Pandemic, current University Policy will be followed by the MCP Ph.D. program, even in cases where the MCP policy may conflict or differ from that University policy. For example, though the program usually requires a letter grade in required classes, an "S" grade under S/NC grading will be accepted to fulfill program requirements, for as long as the University maintains that

policy. We will revert to policy as it appears in this handbook when the University ends of suspends these temporary changes in policy.

Academic Progress Milestones

Following are a list of milestones that Ph.D. students are expected to complete, as well as their corresponding deadline. All forms and papers must be turned in to Schantae Wright, Student Services Officer, in room B100. The benchmarks completed in the times indicated in this table illustrate what constitutes success and sufficient progress in the MCP Ph.D. Program.

Required courses must be taken for a letter grade and the minimum passing grade for a required course is a B. In addition, University policy requires that graduate students maintain a minimum of a 3.0 grade point average in all courses. Should a situation arise where a student finds themselves unable to meet one or more of these milestones, the student should schedule a meeting with the DGS to discuss potential routes of remediation.

<u>First Year</u>	
Boot camp and orientation	End of Summer Quarter
Department Scientific Meeting (retreat)	Upon Arrival
First Year advising with Director of Grad Studies	Before each rotation
Foundations Course (BIOS 200)	Autumn Quarter
Journal Club and Professional Development (MCP208)	Autumn/Winter/Spring Quarters
Lab rotation evaluation form	End of each rotation
Fellowship application (NSF GRFP, NDSEG)	NSF-Mid October, NDSEG early December
Lab rotations/thesis lab	End all rotations and join lab by May 15
Formation of Qualifying Exam Committee	End of Spring Quarter
Meet w/qualifying committee to discuss thesis project	End of Spring Quarter
<u>First or Second Year Course Work</u>	
How Cells Work (Energetics...) (MCP 256)	Spring Quarter (alternate years)
Advanced Cell Biology (MCP 221)	Winter Quarter
The Nervous System (NBIO 206) *#	Winter Quarter
Or Neuroplasticity, BIO 204) *#	Spring Quarter
Advanced Genetics Course (GENE 205) *	Winter Quarter
Biological Macromolecules (Bioc 241)*	Spring Quarter
Molecular and Cellular Immunology (Bio 230)*	Autumn Quarter
Advanced graduate courses or minicourses	Quarter varies
(* students must take two out of these four courses	
# Bio 204 may be substituted for NBIO 206)	
<u>Second Year</u>	
Department Scientific Meeting (Retreat)	Autumn Quarter
Journal Club and Professional Development (MCP208)	Autumn/Winter/Spring Quarters
Complete Required Coursework (except MCP208)	End of Spring Quarter
Dissertation Proposal Paper/Qual Exam	End of Autumn Quarter
Application for Candidacy form	End of Autumn Quarter
The Responsible Conduct of Research (MED 255)	Spring Quarter

Grant Writers Academy (GWA)	Spring Quarter
Submit grant application (NRSA, F31, NSF GRFP)**.	Dates vary
Formation of Dissertation Committee	End of Winter Quarter
Meet with Dissertation Committee	End of Spring Quarter
Dissertation Research	All 4 quarters
** NSF only if didn't apply in 1 st year. 1 st year application is encouraged.	
<u>Third Year</u>	
Department Scientific Meeting (Retreat)	Autumn Quarter
Journal Club and Professional Development (MCP208)	Autumn/Winter/Spring Quarters
Annual Committee Meeting	End of Autumn Quarter
Dissertation Research	All 4 quarters
<u>Fourth Year</u>	
Department Scientific Meeting (Retreat)	Autumn Quarter
Request for TGR status form (SPRING)	135 units and all requirements
Reading committee form	With TGR form
Annual Committee Meeting	End of Autumn Quarter
Path to Defense (1-page)	End of Spring Quarter
<u>Fifth Year</u>	
Department Scientific Meeting (Retreat)	Autumn Quarter
Annual Committee Meeting #1	End of Autumn Quarter
Annual Committee Meeting #2	End of Spring Quarter
Dissertation Research	All 4 quarters, up to defense.
<u>Thesis Defense</u>	
Draft of Dissertation	End of Spring Quarter, year 6, or earlier Due to committee at least 2 weeks prior to defense
University Orals Exam Form	At least 2 weeks prior to defense

Special note about Medical Scientist Training Program (MSTP) students: MSTP students who wish to earn their Ph.D. in the MCP program must, upon entering the program, schedule a meeting with the DGS to discuss course requirements. It will be the general policy that MSTP students must fulfill the same requirements as all MCP Ph.D. students, but in recognition that MSTP students usually have taken prior extensive coursework in Medical School, the DGS may waive some specific MCP course requirements where there is significant overlap with that prior Medical School course work. Such a waiver will be committed to a written form, signed by the DGS. MSTP students in MCP are not required to do laboratory rotations but may elect to do so if their MSTP advisor allows.

Courses offered in MCP:

MCP 207: MCP Boot Camp

Hands-on, week-long immersion in methods and concepts related to the physiology of cell signaling. Required of all first-year MCP students; other PhD students may enroll with consent of instructor.

Terms: Aut | Units: 1-3 | Grading: Medical Satisfactory/No Credit

Instructors: [Feng, O'Brien \(PI\)](#)

MCP 208: MCP Journal Club and Professional Development Series

Required of all MCP graduate students in their first 3 years of study, open to all MCP graduate students and postdoctoral scholars. This course will consist of a mixture of student presentations of papers in the primarily literature, and critiques, and presentations on topics important for student's professional development. Instructors: Madison, D. (PI)

MCP 221: Advanced Cell Biology (BIO 214, BIOC 224) For Ph.D. students. Current research on cell structure, function, and dynamics. Topics include complex cell phenomena such as cell division, apoptosis, compartmentalization, transport and trafficking, motility and adhesion, differentiation, and multicellularity. Current papers from the primary literature. Prerequisite for advanced undergraduates: BIO 129A, B, and consent of instructor.

Terms: Win | Units: 2-5 | Grading: Medical Option (Med-Ltr-CR/NC)

Instructors: Kopito, R. (PI); Jonikas, M. (PI); Pfeffer, S. (PI); Theriot, J. (PI)

MCP 222: Imaging: Biological Light Microscopy (BIO 152, CSB 222)

This intensive laboratory and discussion course will provide participants with the theoretical and practical knowledge to utilize emerging imaging technologies based on light microscopy. Topics include microscope optics, resolution limits, Köhler illumination, confocal fluorescence, two-photon, TIRF, FRET, photobleaching, super-resolution (SIM, STED, STORM/PALM), tissue clearing/CLARITY/light-sheet microscopy, and live-cell imaging. Applications include using fluorescent probes to analyze subcellular localization and live cell-translocation dynamics. We will be using a flipped classroom for the course in that students will watch iBiology lectures before class, and class time will be used for engaging in extensive discussion. Lab portion involves extensive in-class use of microscopes in the CSIF and NMS core microscopy facilities.

Terms: Aut, Win | Units: 3 | Grading: Medical Option (Med-Ltr-CR/NC)

Instructors: [Lewis, R. \(PI\)](#)

MCP 256: How Cells Work: Energetics, Compartments, and Coupling in Cell Biology (MCP 156)

Open to graduate and medical students, and advanced undergraduates. Dynamic aspects of cell behavior and function, including cellular energetics, homeostasis, heterogeneity of membranes, structure and function of organelles, solute and water transport, signaling and motility.

Emphasis is on the principles of how coupling of molecular processes gives rise to essential functions at the cellular level. Mathematical models of cell function. Student presentations.

Alternate years: offered Spring 2018-19

Terms: Aut | Units: 4 | Grading: Medical Option (Med-Ltr-CR/NC)

Instructors: Lewis, R. (PI); Maduke, M. (PI); Feng, L. (PI)

MCP 299: Directed Reading in Molecular and Cellular Physiology

Prerequisite: consent of instructor.

Terms: Aut, Win, Spr, Sum | Units: 1-18 | Repeatable for credit | Grading: Medical Option (Med-Ltr-CR/NC)

MCP 370: Medical Scholars Research

Provides an opportunity for student and faculty interaction, as well as academic credit and financial support, to medical students who undertake original research. Enrollment is limited to students with approved projects.

Terms: Aut, Win, Spr, Sum | Units: 4-18 | Repeatable for credit | Grading: Medical School MD Grades

MCP 399: Graduate Research

Students undertake investigations sponsored by individual faculty members. Research fields include a variety of topics in molecular and cellular physiology. Prerequisite: consent of instructor. (Staff)

Terms: Aut, Win, Spr, Sum | Units: 1-18 | Repeatable for credit | Grading: Medical Option (Med-Ltr-CR/NC)

MCP 801: TGR Project

Terms: Aut, Win, Spr, Sum | Units: 0 | Repeatable for credit | Grading: TGR

MCP 802: TGR Dissertation

Terms: Aut, Win, Spr, Sum | Units: 0 | Repeatable for credit | Grading: TGR

Laboratory Rotations

In addition to the course requirements detailed above, a student is expected to complete laboratory rotations during the first year. While students typically explore three rotations, a student may opt to do a greater number of shorter rotations, as long as the rotation process is completed by May 15 of the first academic year of study. The first two of these rotations must be in a laboratory within the Department, while subsequent rotations may be in any laboratory within the Stanford Biosciences Program. The first rotation should last 8 to 10 weeks and each subsequent rotation shall last no longer than 8 weeks. Shorter rotations are encouraged, as long as the total length of the rotations is between 20 and 26 weeks. MCP requires a lab rotation evaluation to be completed by faculty member and student at the end of the rotation. Continuation of rotations beyond May 15 will require the approval of the Director of Graduate Studies. Additional rotations and/or time for rotations will be considered in special circumstances, but in all cases, students should plan to join a dissertation lab no later than the beginning of Fall Quarter of the second year.

External Fellowships

Students are strongly encouraged to apply for predoctoral fellowships during their graduate years, and the skills for grant application writing are developed in the BIOS 200 Foundations course. Fellowship applications to the National Science Foundation are available in October and due in November of their first year in residence. You can apply both *before* you begin your graduate studies *and* as an early graduate student. Students are also encouraged to apply for other outside fellowship, which can be found at the following link:

<https://financialaid.stanford.edu/grad/funding/outside.html>

The SOM Research Management Group maintains a list of fellowship opportunities at this link: http://med.stanford.edu/rmg/funding/grad_student.html. In the second year of study, students can apply for an NIH NRSA.

Qualifying Examinations

All students in the program must pass a Qualifying Examination to advance to candidacy for the Ph.D. It is expected that students will take the qualifying examination by the end of the Autumn quarter in the second year of study. In any case where a student believes they need additional time to schedule and take their exam, a request must be submitted in writing to the Director of Graduate Studies (DGS) by November 15 of the Fall quarter. The DGS may opt to grant additional time in compelling circumstances that do not indicate poor progress or may refer the matter to the Graduate Program Committee. Students will be given two chances to unconditionally pass the qualifying examination. In cases where a student is not able reach candidacy, the Graduate Program Committee may consider if there is a feasible path to a terminal master's degree.

Students should form a qualifying examination committee, consisting of at least 3 faculty members (members of the academic council, including the dissertation advisor), at least one of whom must be a member of MCP. This committee should be formed by the end of Spring Quarter of the first year of study. The composition of this committee should be approved by the Director of Graduate Studies. Students should also check with the Coordinator of Student Services for the Department (Schantae Wright) to make sure to file all required paperwork, by the end of Spring Quarter. The University maintains certain deadlines for filing for candidacy, and it is the student's responsibility to be aware of these deadlines.

The qualifying examination consists of written and oral components. For the written portion, the student will compose a dissertation research proposal in the format of an NIH NRSA grant application (6 pages not including citations, 11-point Arial font, single spaced, minimum 0.5 in. margins). This proposal should include a thorough treatment of the background in the field of the proposal, a detailed rationale for the topic and experiment chosen for the proposal, and a detailed proposal of the experiments themselves. Students are not required to present preliminary data as part of the qualifying examination. However, the student should include a section arguing the feasibility of the proposed experiments. Of course, if the student has relevant preliminary data, it should be included, **but preliminary data are not required to go forward with the examination**, and the examination will not be postponed for lack of such data.

The student will submit the written proposal to their qualifying committee at least 10 days before the scheduled oral examination.

The oral portion of the examination will consist of the student giving an oral presentation of the dissertation proposal to their committee, and fielding questions about it from the committee. While these questions will center on the topic of the proposal, the student is responsible for general scientific knowledge that is relevant to the field of the proposal. The range of questions is the purview of the examination committee. In no case can the oral portion of the examination last for more than three hours, per University rules.

Before the examination begins, the dissertation advisor, who is normally a member of the committee, will have the opportunity to speak to the rest of the committee without the student

present. Likewise, the student will have the opportunity to speak to the committee without the advisor present before the oral exam begins. This will not constitute part of the exam but is an opportunity for the student to express any thoughts or concerns to the committee without the advisor present.

At the end of the oral examination, the committee will meet briefly in private (without the student present) to render a decision. There are four general possible outcomes:

- 1) An Unconditional Pass may be granted at the exam, but only if the student has also fulfilled all of the course requirements at that time. With an Unconditional Pass, the student advances to candidacy.
- 2) A Conditional Pass is contingent on the completion of additional work assigned by the exam committee and/or the satisfactory completion of the usual required course work. While the scope of that additional work is the purview of the committee, and typically might be something like additional course work beyond the usual requirements, a special project, a re-written proposal, or other. The student will be given a time frame in which they must complete the additional requirements. This time frame should be reasonable, with the final arbiter of that reasonableness, being the DGS. In the case of a conditional pass, the exam does not need to be retaken. Once the additional requirements (and/or the usual required courses are completed satisfactorily), the student will progress to an Unconditional Pass and Candidacy.
- 3) Fail with option to retake. The oral exam must be retaken. The committee may also require an extensive rewrite of the proposal, up to and including a new proposal. The second taking of the Qualifying exam must occur by the end of the Spring Quarter of the 2nd year of study. At the second exam, the student may progress to a Conditional or Unconditional Pass, or an Unconditional Fail.
- 4) Unconditional Fail. If the judgement of the committee is that performance on the exam was so poor that passing on a second try within the required time frame is unlikely, then an Unconditional Fail may be given, and the student may not retake the exam. In such cases, the student may petition to program to be awarded a terminal master's degree. Such a degree will normally be granted only after the student submits an acceptable written master's thesis, which may be based on the written qualifying exam proposal. The Graduate Program Committee and the Department Chair must approve the petition and the final master's thesis. MCP does not guarantee to award a master's degree to students who fail the qualifying examination, and it will only be awarded in the case that the committee and Chair find that it has been earned.

Students who have passed their qualifying examination but who subsequently decide to resign from the program for any reason before receiving the Ph.D., may also petition the program to be awarded a master's degree. The procedure for approving a masters-degree for a Ph.D. candidate will be the same, except that the passing of the qualifying exam will generally be taken as evidence of having earned the master's degree. However, a petition for a terminal master's degree must be made and granted before the student officially withdraws from the program, and the student must be registered in the quarter it is awarded. If a student leaves the program and/or the university or fails to maintain their registration, no degree can be issued. MCP does not award

master's degrees, except for this terminal master's degree in these special circumstances.

Dissertation Committee Meetings

Upon successful completion of your qualifying exam, the student will assemble a Dissertation Committee. Like the qualifying exam committee, the Dissertation Committee will include your advisor, at least one faculty member from MCP (may be your advisor) with a total of at least four (4) faculty members in the Stanford Biosciences. Members of the Stanford Faculty who are not members of the Biosciences, or Faculty from other accredited Universities may serve on the committee with approval of the DGS. Many students choose to retain the members of their qualifying committee on their dissertation committee, but they are under no obligation to do so, except for their dissertation advisor.

The purpose of the Dissertation Committee is to offer each student a tailored and independent panel of advisors who can provide constructive feedback on the dissertation project and progress in general toward the completion of the degree. The student must arrange (with the help of the Student Officer Schantae Wright) to meet with a quorum of your Dissertation Committee at least once a year in the third and fourth year and twice a year in the fifth year and beyond. A quorum is defined as your thesis advisor plus at least two members of Dissertation Committee. The frequency of committee meetings is mandated by CGAP (Committee on Graduate Admissions and Policy – the official steering committee of the Biosciences) and enforced by the Dean of Graduate Education. The student should expect to meet once a year with the DGS as well.

Dissertation Research

The MCP program allows any of its graduate students in good standing to join and conduct their dissertation research in the laboratory of any Stanford faculty member having an official affiliation with a Stanford Biosciences Ph.D. program. Even if a student chooses a non-MCP faculty for their dissertation advisor, they remain a student in the MCP program. In extraordinary circumstances, a student may petition of transfer out of the MCP program into another Stanford Biosciences Ph.D. program. MCP will generally allow these transfers, as long as the student is in good standing, and otherwise making good progress, and when there is a program that agrees to receive them as a transfer. MCP cannot guarantee that the proposed receiving program will agree to accept the transfer, so students wishing to make such a transfer should take care to maintain good progress in the MCP program until the transfer is complete, and they become subject to the receiving programs requirements. It is entirely up to the receiving Program whether to accept 'credits' for work completed while an MCP student.

During the dissertation work, the student will work closely with their advisor, with the support of their dissertation committee. The current Stanford funding model guarantees that students will be funded through a combination of outside fellowships, Department funds, and Dean's campaign funds through their first four years of study. After that, responsibility for their student's financial support there is the responsibility of the dissertation advisor.

Publication Requirement

MCP has a publication requirement for the conferral of the degree of Ph.D. The student must be the first author on a paper containing the results of their original scientific research. To meet the graduation requirement, this paper must be complete, and at least under review at a legitimate peer-reviewed journal (having an ISSN number).

Teaching

Opportunities exist for students to gain teaching experience as teaching assistants (TA) in various courses. However, there is no formal teaching requirement that needs to be completed to earn the Ph.D. degree.

Language

There is no language requirement for earning the Ph.D. degree. However, students will be expected to be familiar with the relevant literature in their chosen field, regardless of the language of publication.

Applying to Candidacy (CAND)

Admission to candidacy acknowledges the successful completion of all departmental and university requirements for the doctoral degree, apart from the doctoral dissertation. Forms can be found on the registrar's website (<http://www.stanford.edu/dept/registrar/shared/forms.htm>) and submitted to MCP Student Services Officer.

Terminal Graduate Registration (TGR)

Doctoral students are eligible for TGR status when they have been admitted to candidacy, completed all required coursework, completed 135 units, and submitted the Doctoral Dissertation Reading Committee form. Students registered in TGR status must enroll each quarter in a TGR course (#802 for doctoral programs) in their department, with their advisor as the instructor. There are zero units for this course selection, and you will not be eligible to take classes for credit. TGR students also enroll in MCP 399 for 3 research units with their advisor as the instructor, unless you are in a non-MCP thesis lab. The purpose is to work on the thesis, dissertation, or other remaining requirements that must be evaluated each quarter for academic progress and graded as follows: "N" indicating satisfactory progress, "N-" for unsatisfactory progress, and "P" for a final grade when all requirements have been completed. A hold is placed on the registration of a student who receives an "N-" grade for two consecutive quarters. Further registration is contingent on approval of an agreement for completing degree requirements by the adviser and the department.

Conferral of Degrees

The goal of the PhD in Molecular and Cellular Physiology is to train its students in the thought processes, methods, ways, means on how to effectively and ethically conduct research with the broader aim of making an original contribution in the student's area of specialization. Such a contribution typically takes the form of peer-reviewed publications and each student is required to be the lead author on at least one such publication arising from their dissertation research before the degree can be conferred. Under exceptional circumstances (e.g., factors beyond the control of the student), the Graduate Committee may grant an exception to this requirement. Completing the PhD also requires a written dissertation and an oral exam. The

dissertation can include manuscripts submitted or accepted for publication, modified to fit dissertation form, and can also include chapters reporting work that has not yet been prepared for publication. In cases where some of the work has been conducted as part of a team, the student should draft a brief paragraph preceding the manuscript detailing their individual contribution to the study. The dissertation should also include an introductory chapter, placing the work in context and a significant final chapter discussing in detail the importance, limitations and implications of the research described.

The University Requirements for the form and content of the written Dissertation may be found here:

https://registrar.stanford.edu/students/dissertation-and-thesis-submission/preparing-dissertations-electronic-submission/format#order_and_content

The MCP Ph.D. program does not have an exact requirement for the chapter organization of the Dissertation, beyond the University requirements. But the following illustrates the scientific content of a typical Dissertation. These points may be used as a general guide, but beyond the University requirements, your dissertation committee will have the authority as to what constitutes a finally acceptable document.

- 1) An abstract
- 2) An introductory chapter which contains a strong review of the relevant literature in the field of your work, and the rationale for the project/experiments you did
- 3) Usually 3 'science chapters' - in format very similar to a scientific paper, but with the chapter introduction and discussion truncated - in that the intro and discussion of these chapters should be limited to just the results in the chapter - leaving the more general issues to the dissertation introduction and summary/discussion. Thus, the intro and discussion of each science chapter does not need to repeat things that are in your general intro (or general summary/discussion). There is no hard rule that there has to be 3 such chapters; the work and the dissertation committee will ultimately dictate this.
- 4) A chapter on methods - basically all the Materials and Methods for the Science Chapters, gathered into one chapter. There is also leeway here. If an organization where the methods are parsed out into each science chapter, works better, that is acceptable. But gathering the methods into a single chapter is usually a simpler form to write and to read.
- 5) A general summary and discussion - unlike the mini- and more specific discussions in the science chapters, this discussion should tackle the larger issues that are addressed by your entire project, your overall conclusions, the general advance in science represented by the dissertation project as a whole, etc...

Published papers or manuscripts prepared for publication, may be used as science chapters, but you should adapt them to the dissertation style (i.e. parse out the intro, methods and discussions in those papers into the general and specific intro and discussions of your dissertation, as appropriate). The results can generally just go into the chapter as they are in the paper. We do not generally support just using a paper exactly in its published form as a

chapter. In all cases, if an MCP requirement conflicts with a University requirement, the University requirement must be followed.

The Notice of Intention to Complete Advanced Degree Requirements form is submitted to the Graduate Degree Support Section to initiate approval for conferral of all graduate degrees. It should be submitted preferably in the second week, but no later than the last day of classes of the degree quarter, as listed in the University Calendar. Requests for conferral are reviewed by the Graduate Degree Support Section and the department to verify completion of degree requirements. In summer, autumn, and winter Quarters degree certificates are sent to students within two weeks of the conferral date.

The Graduate Degree Support Section should be notified in writing when conferral plans change. Students who withdraw their conferral request or who fail to complete degree requirements must file a new Notice of Intention for a subsequent quarter. A new Notice of Intention must be filed for each degree and conferral quarter.

Spring Commencement

Commencement ceremonies are held each June for students who have received degrees in the previous summer, autumn, winter and spring quarters. Students who wish to receive their diplomas at June commencement must submit a Notice of Intention by February 1 to allow adequate time for preparation of the diploma. Information on Commencement activities and distribution of diplomas is sent by the Registrar's Office in early April to addresses provided on the Notice of Intention. Students who wish to participate in commencement activities in advance of conferral of their degree may obtain a Graduate Student Petition to Walk Through Commencement Exercises from the Graduate Program Office from May 1 until the day before commencement. A Walk-Through petition should be requested when the student is reasonably certain of completing the dissertation requirements shortly after commencement, and only if there is no possibility of completing degree requirements for June conferral.

Student Services

Registration

Graduate students are required to register for autumn, winter, and spring and summer quarters at 10 units (or TGR & Research at 3 units) until the degree is received.

Access to Stanford student privileges (funding, housing, financial aid, access to courses and facilities, etc.) is contingent upon timely and accurate completion of the following:

1. File your study list (the list of courses in which you wish to enroll) and maintain that study list throughout the term, via Axess.
2. Ensure that your University bill is paid (housing, late fees, etc.).
3. Clear all holds if any that may block your ability to enroll in classes.

Deadlines are set for each of these activities and can be found on the Registrar's website, the Stanford Academic Calendar or Axess. Holds will cause a delay of payment.

Stanford Biosciences Website

- The Stanford Biosciences Website is an up-to-date resource listing faculty mentors, information for incoming and current students as well as a calendar of seminars, thesis defense and other events on campus.
- Link: <http://biosciences.stanford.edu>

Stanford Bulletin/Explore Courses

- The Stanford Bulletin is the official statement of degree programs and courses of instruction for Stanford University. For degree requirements and University regulations and requirements, see the Bulletin's Explore Degrees web site.
- The Bulletin's Explore Courses site presents all active courses, whether or not offered in the current academic year, in the Catalog View, and all scheduled classes for the current year in the Schedule View. Link: <http://explorecourses.stanford.edu>

Graduate Student Tracking (GST) System

The Biosciences Graduate Student Tracking System (GST) is a secure online resource for Ph.D. students, faculty, and student services administrators (SSAs); its ultimate goal is to provide support in the related areas of student academic progress, alumni tracking, admissions and training grant application/renewal. It can be accessed via this link: <https://med.stanford.edu/gst/> with SUNet ID authentication. Information on the system is provided <https://biosciences.stanford.edu/current/gst/index.html>. Students are asked to enter their Lab Rotations as well as IDP and Thesis Committee Meetings into this system.

Study List

Preliminary Study Lists are due on the first day of classes. Final Study Lists are due approximately three weeks after the start of the quarter. Students should complete this carefully and submit it by the listed deadlines (otherwise late fees may be assessed, and the course grades possibly delayed). Students submit their study lists through AXESS.

Student Record in Axess System

Axess is a student information system available via the web. It is regular available weekdays 8:00 am to 11:59 pm and weekends 9:00 a.m. to 11:59 p.m. Using Axess, you will be able to complete the following tasks:

- File your quarterly registration commitments
- File or adjust your study list and elect grading options
- Review your grades
- Request and official transcript
- Print a history of your courses and grades
- Apply to graduate
- Apply for housing
- Waive health insurance
- Update personal information

New students may use Axxess at any time after receipt of the registration packet from the Registrar's office. You will need a SuNET ID and password to use Axxess.

Student ID Number

Your Stanford University ID is a number assigned to our academic record and is required for any inquiries you make. The ID number is printed on your registration commitment letter, your Stanford University ID card, and all enrollment/grading related documents distributed by the registrar's office. Your ID number is unique and considered directory information. Once you have received your number, you need to bring some form of picture ID with you to the ID office located at the Student Center at Tressider Union.

University Bill

After submitting a Registration Commitment, students may receive a University bill. Tuition credits are entered on this bill. Also entered are other University charges such as rent, student fees, late fees, loans, etc. Students receiving a fellowship paid through Stanford may elect to have these charges deducted from their stipend checks and automatically applied to their bill. If your bill is incorrect or incomplete, it is your responsibility to ensure that the bill is corrected or to pay the correct amount by the payment deadline.

Vaden Student Health Center

The Vaden Student Health Center provides medical care, including a range of counseling and mental health services, to regularly enrolled Stanford students. The center is located at 866 Campus Drive and has a full-time staff of physicians, mental health professionals and nurses. It provides, for free or for modest fees, a program of medical and psychological services to students holding current student I.D. cards. For hours of operation see <https://vaden.stanford.edu/about/hours>. Call 650-498-2336 for information and appointments. Stanford University requires all new students to have completed an Entrance Medical Record. Information on entrance requirements and forms is provided at <https://vaden.stanford.edu/about/entrance-health-requirements>

Health Insurance

Stanford students are required to enroll in the Stanford health insurance plan, Cardinal Care, paid along with registration or tuition fees, or provide evidence of satisfactory coverage with an external carrier. Cardinal Care is the comprehensive student health insurance plan sponsored by Stanford University featuring access to Stanford Medical Center. Coverage information for the current academic year can be found at <https://vaden.stanford.edu/insurance/cardinal-care-overview-and-benefits>.

Students are automatically enrolled in Cardinal Care unless they waive coverage and have other health insurance. Students must waive coverage before the first quarter in which they are enrolled each academic year (normally this is Autumn quarter). Cardinal Care is waived in Axxess by the deadlines listed at <https://vaden.stanford.edu/insurance/choosing-your-insurance/important-deadlines>. Stanford health insurance charges appear on quarterly University bills (autumn, winter, spring quarters). The phone number for the Insurance Desk at Vaden is 723-2135.

Dental benefits are now available through the Cardinal Care insurance plan. Benefits are administered by Delta Dental of California. Coverage includes diagnostic and preventive services at 100% with no deductible when an in-network Delta Dental PPO dentist is used. Consult your Cardinal Care insurance plan for more information. Information is available on the Vaden website at <https://vaden.stanford.edu/insurance/dental-and-vision-insurance-options>

Campus Service Health Fee

This is a mandatory fee that applies to all undergraduate and graduate students enrolled on the Stanford campus (\$232/qtr, 2020-21). It covers many services provided by Vaden Health Center, including primary care medical visits, psychological evaluation and short-term therapy at Counseling and Psychological Services (CAPS), and access to health and wellness programs. Specific details regarding this fee and its implementation may be found at <https://vaden.stanford.edu/insurance/health-insurance-overview/insurance-vs-campus-health-service-fee>. Information about the services provided by Vaden Health Center may be found at <http://vaden.stanford.edu>.

Stipends

Entering students are offered research assistantships, fellowships, or traineeships that include payment of a stipend and tuition. Departmental funds are used to supplement support from all sources to the university annual required level and to pay for health insurance. **Student fees, late fees, etc. are the responsibility of each student.**

Students may receive stipends quarterly or semi-monthly depending on their funding source. For those students on fellowships who are paid quarterly, the stipend checks are usually issued the day before classes begin. Checks are sent to the "mailing address" listed in Axess.

Students who are paid semi-monthly (RA salary) will be paid on the 7th and the 22nd of the month (or on the preceding workday if these dates fall on a weekend or holiday). Checks are sent to the department. Semi-monthly paychecks may be directly deposited in bank accounts via Axess.

The Department endeavors to provide tuition and stipend support to its doctoral students as needed through the completion of their degree, provided that student maintains satisfactory progress toward the degree. The first four years of that financial support are guaranteed through a combination of outside fellowships, Training Grants, Departmental funds and Dean's Office Campaign funds. No one student is likely to receive support from all of these mechanisms, but successful student applications for outside funding are important because the other sources of funding are insufficient to fund the entire student body in the composite. Financial support after the 4th year is the responsibility of the dissertation advisor's research funding. The Department/Advisor (as appropriate) cannot however guarantee such support beyond the middle of the 5th year of study. Students should thus strive to complete their degree requirements by the middle of the 5th year, and the program is designed to make this an achievable goal.

Outside employment while a registered student in the MCP Ph.D. program is prohibited.

Leaves of Absence

Students in the program are expected to remain continuously enrolled for all quarters, including summer, from their initial matriculation through the completion of their degree. However, in extraordinary circumstances, a student may request a leave of absence from the program and the University. In cases where the reason for the request is medical, the student should visit the Office of Accessible Education (OAE) to obtain an evaluation and recommendation for leave. This is done for the privacy of the student, so that they do not need to reveal the nature of their condition to members of the program or Department. Upon presentation of a recommendation for leave from the OAE, the DGS will sign the leave request form for the student. The student will then file that form with the appropriate University Office who will grant the leave from the University. If the leave is requested for non-medical reasons, the student may petition the Graduate Committee for a leave of absence.

Students may request a leave of absence for the period of time ranging from one quarter to one calendar year (4 quarters). If a student requests a leave for a period shorter than a year, and before the expiration of that leave, wishes to request more, up to a cumulative year, that request will be granted by the Program/Department, but a new form must be filed with the University to extend the leave. A second year of leave will be considered in extraordinary circumstances, but the granting of that 2nd year is not guaranteed. Leaves of absence longer than 2 years duration are not granted.

During an official leave of absence, a student will not receive a stipend and student medical coverage is suspended until the student returns from leave. Tuition is not charged during leave. Students should check with the Office of Student Affairs to determine what options exist to maintain medical insurance coverage during a leave of absence. If the maximum period of leave is utilized and the student does not register with the University back to active status, and/or chooses not to return to the program at the end of that leave, it will be considered by the program as a resignation from the program.

Tax

Stipends are subject to income tax, but not withholding, so the student must pay estimated taxes (form 1040ES). Please view information found at <https://sfs.stanford.edu/taxes> should you have a question regarding tax status or payments.

Tuition

Tuition is fully covered by research assistantships or traineeships at 10 units. Tuition paid by the department, school or external funding source is paid directly to the University. Students will receive tuition credit on their University bill.

I-9 Requirement

Any individual receiving salaried compensation must have on file a correctly completed I-9 form (Employment Eligibility) prior to commencement of work. International students who are not U.S. permanent residents must have a valid passport and visa with either an I-94 card or an I-20

ID card carrying an employment authorization stamp in order to file an I-9. See the Student Services Officer for completion of this form.

Housing: On and Off Campus

On Campus

Graduate Housing at Stanford accommodates single students as well as those coming to Stanford with a spouse, same-gender or opposite-gender domestic partner, and/or children. Graduate residences include studios and apartments with up to four bedrooms. All Stanford student housing is smoke-free, and pets are not allowed. All housing assignments are made through a lottery system. If you are new to Stanford and enrolled in a graduate degree program, you are guaranteed housing for your first year of study if you apply by the Lottery deadline and indicate as the final choice on your application that you are willing to live in any residence for which you are eligible. Housing information can be found at:

<http://studenthousing.stanford.edu>.

Off Campus

Many students live off-campus. Community Housing Services provides helpful information on their website at <https://rde.stanford.edu/studenthousing/community-housing/>, including listings of rentals available in the local area.

The following web sites are also good sources for off-campus housing.

Short term housing:

<https://rde.stanford.edu/conferences/interim-grad-housing-pre-autumn-how-apply>

Palo Alto Weekly:

<https://www.paloaltoonline.com/index.php>

Sf Bay Area Craigslist:

<https://sfbay.craigslist.org/>

Department Events

Departmental Scientific Retreat

The Department holds its annual scientific research conference in the September. All laboratory groups present talks or posters on current research, and attendance is mandatory. The 2018 conference was on September 9-10, 2018; and the 2019 retreat will be on October 17 and 18, 2019 at Hotel Paradox in Santa Cruz, CA.

MCP Seminar Series

Each year the Department of Molecular and Cellular Physiology (MCP) hosts academic seminars presented by speakers renowned in their areas of study and open to all of the Stanford and general research community. These seminars are coordinated by a representative from each of the MCP labs, along with a Faculty mentor and administrative support.

MCP Science Friday

Bi-weekly presentations of research-in-progress by postdocs and graduate students, followed by discussion, socializing and refreshments are presented Friday afternoons, in B100 at 4:30.

Health and Safety

Stanford University's health and safety mission is to provide a safe and healthy environment for faculty, students and staff and to assure compliance with federal, state and local regulations. The University Environmental Health and Safety (EH&S) office manages health and safety programs for the School of Medicine such as:

- Health Physics
- Biosafety
- Industrial Hygiene & Fire Safety
- Chemical Safety

Each person working in a lab is required to be trained in the specific hazards of his or her job. Laboratory safety is a component of the orientation to a research lab. It is the Principal Investigator's responsibility to provide training for lab equipment, procedures and chemicals. EH&S provides two mandatory training sessions.

EH&S, through the Health Physics Department, provides mandatory training for use of radioisotopes as part of Stanford's licensing agreement with the State of California. New students need to contact Health Physics and complete the following before they can work with any radioactive material:

- "Statement of Training and Experience"
- "Authorization to Obtain Radiation Exposure Records"
- "Film badge request"
- Take class and/or test depending on previous training

In conjunction with the Medical School's Health and Safety Program office, EH&S provides mandatory Lab Safety Training. The office also assists in resolving safety problems and provides each department Safety Team with safety information and regulatory compliance strategies. EH&S provides a variety of environmental health and safety services:

- The on-line Chemical Safety Database
- Emergency Response Team available 24 hours a day
- Hazardous waste pick up
- Safety related reference material (books and videos)

Transportation

Cars: Permits are required for parking on campus. Three types are available: "Resident" permits that allow you to park at your campus dorm or apartment. "A" permits entitle you to park in any lot. "C" permits enable you to park only in "C" lots which are further away. Both A&C permits are available to commuters (students not living on campus). Carpool and vanpools permits are also available to eligible persons. Beginning in Autumn of 2018, Stanford will be

transitioning to a permit system that does not use a physical permit – but rather students must register their car's license plate number, which will serve as their permit upon payment of parking fees.

For more information call the Parking & Transportation office at 723-9637 or visit their website <http://transportation.stanford.edu/>

- **Additional automobile resources included:**

1. The Dept. of Motor Vehicles in Redwood City: 300 Brewster, (650) 368-2837
2. California State Automobile Association: 430 Forest Ave, Palo Alto, (650) 321-0470

Bicycles: The California Vehicle Code requires registration bicycles to aid in identification and recovery if stolen. Tressider Recreation center registers bicycles Mon-Thur afternoons. Call 723-4361 for information. Engravers are available at the Police Station to engrave a license number or Stanford student ID number on bicycle frames. Stolen bicycles should be reported to the Police station (723-9633).

- Bicyclists must follow the same rules of the road as automobile drivers, not pedestrians. Palo Alto and other nearby cities have established a network of bike lanes and paths marked with signs and painted lines to make biking safer.
- Safety classes are encouraged.

Marguerite Shuttle: The Marguerite is the main campus public transport and is free. It operates Mon- Fri all year except on University holidays.

- Maps and time schedules are available at <http://transportation.stanford.edu/> or by calling (650) 723-9362.

Caltrain: This train has many convenient stops from San Francisco to Gilroy. The marguerite can shuttle from both Palo Alto stations into Stanford. See website for updated schedule: <http://www.caltrain.com/site3.aspx>

Departmental Facilities

The Department of Molecular & Cellular Physiology, located on the main floor of the Beckman Center, is part of the Medical Center Complex. The Beckman Center houses a Protein and Nucleic (PAN) core facility equipped for the synthesis and characterization of macromolecules. The Fluorescence Activated Cell Sorter Facility is located on the ground floor along with Munzer Auditorium, PAN facility, Cell Sciences Imaging Facility and the Bistro Café.

Computer Resources:

- The Bioinformatics Resource Lab in Beckman Center provides both SUN SparServers for analysts of biological data and sequences and Silicon Graphics servers for molecular modeling. The resource also provides connection to the Internet and WWW, email, file and printing services.
- Every desk in the Beckman Center is wired for high speed Ethernet-connection to SUNET. The network allows each computer to access University and medical school card catalogs, Medline, bookstore and a wide variety of other information.

Mail

- Department mailboxes are arranged in the hall across from room B100 by alpha/faculty with boxes below for each faculty member's lab.
- Mail moves between departments and offices at Stanford by Interdepartmental (ID) mail. All ID mail should include the four digit Stanford mail code. There is a complete list of mail codes in the Stanford directory.
- MCP mail code is 5345

Kitchen

Located in B100. It includes a 2 microwaves, refrigerator, toaster oven, instant hot water, sink, and cabinets.

Card Key Security System

- A card key security system has been installed in the Beckman Center and other external buildings within the Medical Center. The Beckman Center has six ground floor doors plus the RAF tunnel door keyed. These doors are also equipped with closed circuit cameras. There is a telephone outside the main front doors to accommodate visitors without card keys. No access card is needed between 7 AM- 7 PM, Monday through Friday (not including holidays). See the Lab Manager or Assistant, to obtain a card key as well as keys to the lab and shared rooms.

Department Conference Rooms

The department has 2 conference rooms located on the 1st floor of Beckman.

- B181 is used for study, small group sessions, and lab group meetings. Audiovisual equipment is available for use.
- B100 large conference room is used for group meetings, classes, seminars and social events. Additionally, it is open daily from 12:00-1:30pm as a lunchroom.

AV equipment is available in both rooms.

RESERVATIONS: See any admin or Schantae. Please turn off overhead projectors after use.

Outside of Department Resources

Post Office

- The post office at Stanford is a branch of the Palo Alto U.S. Postal Service and is located at White Plaza. The hours are 9-5, Monday-Friday. Post Office boxes are available for annual or semi-annual rental, in a variety of sizes. The zip code for post office boxes at the Stanford University branch is 94309. The zip code for all other addresses on campus is 94305. The zip code for the MCP Department is 94305-5345

Banking

- The Wells Fargo Bank in Tresidder Memorial Union and the Stanford Federal Credit Union at Tresidder and on Pampas Lane, or across from the Hospital gift shop, are conveniently located on campus. Automatic Teller Machines for Bank of America, Stanford Federal Credit Union, and Wells Fargo Bank are on the second floor of Tresidder and near the Hospital Emergency entrance. An SFCU ATM is located at the branch across from the gift shop and is the closest ATM to the Beckman Center.

Tresidder Memorial Union

- Tresidder Memorial Union is a center of community activity on the Stanford campus. It is located at White Plaza and houses food services; meeting rooms; two pleasant patios; a campus information center; the American Express Travel service; a ticket office for campus and Bay Area events (including BASS); banking services including automatic tellers for Stanford Federal Credit Union and Bank of America, a Wells Fargo branch office with express stops and walk-up windows, an office for account handling and loan applications; Pulse, the University Copy Center and a hairstyling shop. Tresidder Express carries groceries, magazines and sundries. TMU is also the home of the Associated Students of Stanford University, and Student Organization Services.

Bechtel International Center

- Staff at the Bechtel International Center provides support not just to international students but also to their spouses and to American students. Informal English classes, English conversation practice and language exchanges are among the many programs and services offered to students and their spouses. Counseling on immigration concerns, intercultural adjustment and administrative support for visa processing (in liaison with departments and other campus offices) are also part of the ICenter's service to international students. The I-Center is also the campus administrative office for awards enabling American students to study and conduct research overseas.

Stanford Bookstore

- The Stanford Bookstore, consisting of three branches, was incorporated as a nonprofit cooperative in 1987. The main branch is located at White Plaza. New and used textbooks are shelved by courses under the school or department. Also sold are general books, paperbacks, clothing, souvenirs, stationery, supplies, art prints, and gifts; and there is a photocopying service.

Lane Medical Library

- Lane Medical Library is in the Medical Center and online at <http://www.med.stanford.edu/lane/>. Services include general reference, in-depth consulting in all aspects of literature research, journal article file management, or any other information access/management needs (e.g., database design); training programs in bibliographic database searching (e.g. Medline), microcomputer/telecommunication based information access support, and training in general library skills. Lane Medical Library's research collections cover clinical medicine and its specialties, basic sciences, public health, nursing and related fields. With over 3,000 journal titles and approximately 300,000 volumes, the collections rank among the best in the West. Access to bibliographic information was greatly improved with the introduction of Lane's Online Information System (LOIS). Since it is an integrated system, patrons can see if a title is on the shelf, if it is checked out, and when it is due back. LOIS can be accessed 24 hours a day from labs, wards, offices and homes. Access to journal article information is available through online databases of ovid, mdconsult, pubmed, lane catalog, shine, e-journal's <http://www.med.stanford.edu/lane/> as well as at Socrates, <http://www-sul.stanford.edu/search/socii/>, Stanford's online library database. A list of Stanford libraries can be accessed at: <http://library.stanford.edu/>

Fleischmann Learning Resource Center

- The Fleischmann Learning Center, located in M202 in the School of Medicine offers a collection of media and computer-based programs. It houses approximately 1,000

individual programs in a variety of collections which include general audiovisuals in basic and clinical science, preclinical required course lectures on videotape, educational videodiscs, Macintosh educational and general application software, and the DxTER videodisc/computer simulations in Trauma. The FLRC's Macintosh cluster includes Apple Macintosh computers and one LaserWriter.

Other Resource Links:

- Associated Students of Stanford University's (ASSU): <http://assu.stanford.edu>
- Biomedical Association of the Interest of Minority Students (BioAIMS): <http://bioaims.stanford.edu>
- Center for Teaching and Learning: <http://ctl.stanford.edu>
- CMGM, Bioinformatics Resource: <http://cmgm.stanford.edu>
- Green Library: <http://www-sul.stanford.edu/depts/green>
- Graduate Student Academic Policy: <http://gap.stanford.edu>
- HelpSU: <https://remedyweb.stanford.edu/helpsu/helpsu> How To:
- HRP 214: Scientific Writing Course: <http://www.stanford.edu/~kcobb/>
- SOM Career Center: <http://med.stanford.edu/careercenter>
- Stanford University Student Services Center: <https://studentservicescenter.stanford.edu>

Student Wellness:

Graduate School can be a very rewarding time but can also present challenges to student wellness. While we always hope that our students will feel comfortable approaching our Faculty or Staff when such challenges arise, we also understand that this can be difficult to do. The Stanford Biosciences and the University maintain a variety of resources for students facing challenges to their wellness. We encourage our students to make use of these resources whenever a need may arise.

The Stanford Biosciences maintains a webpage with Wellness Resources at:

<https://Biosciences.stanford.edu/wellness>

and a guide to general current resources for Support, organized by level of confidentiality, may be found at:

https://biosciences.stanford.edu/current/resources/docs/SupportResources_08.31.16.pdf