

STANFORD
UNIVERSITY



Stanford Immunology
Graduate Program Handbook
2014-2015

The PhD Program in Immunology is one of fourteen Stanford Biosciences programs. The goal of the PhD Program in Immunology is to provide outstanding training and education for obtaining the PhD degree in Immunology and to develop young investigators who will carry out innovative research in the field. Our students benefit greatly from the long tradition of collaboration among the immunology laboratories, with an emphasis on the application of cutting edge approaches to problems in cellular, molecular, computational, and clinical immunology. Immunology faculty members are leaders in their respective areas of research, and often incorporate bench to bedside approaches. Our PhD core coursework requirements plus strong electives in related disciplines provide an integrated curriculum that spans basic and clinical immunology. Students can choose from either the Molecular, Cellular, and Translational Immunology (MCTI) track or the Computational and Systems Immunology (CSI) track. Graduate students in immunology actively participate in seminars, journal clubs, and the annual Stanford Immunology Scientific Conference at Asilomar. Students have access to state-of-the-art research facilities in the immunology laboratories, located in various departments in the School of Medicine, the Department of Biological Sciences, and the Palo Alto Veteran's Administration Medical Center.

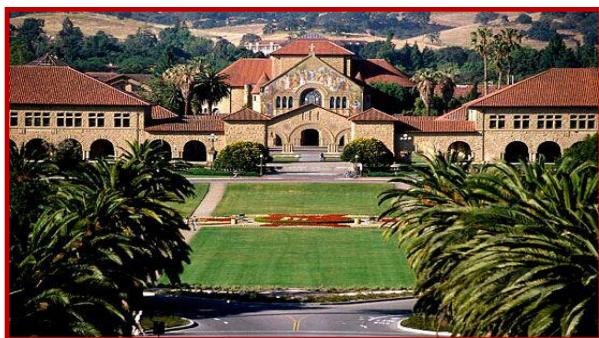


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Program Leadership and Administration

Welcome to Stanford University!

We are excited that you have chosen Stanford University's PhD Program in Immunology for your PhD studies. We hope this graduate handbook will be informative and provide you with information you need as you progress toward your PhD degree in Immunology.



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Graduate Program Committee:

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Edgar Engleman, MD, Pathology
K. Christopher Garcia, PhD, Molecular Cellular Physiology
Sheri Krams, PhD, Surgery/Abdominal Transplantation
William Robinson, MD, PhD, Medicine/Immunology & Rheumatology

The Graduate Program Committee is responsible for the selection, admission, education and degree achievement of all pre-doctoral students in Immunology at Stanford. The Committee also sets programmatic policies for the graduate program.

Program Manager:

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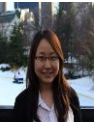
Immunology Program Office:

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Our Immunology Program faculty at Asilomar 2014

Immunology Graduate Student Directory

First Year	Name	Lab	Email
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	Phoebe (Ying) Yiu	Rotating	yingyiu@Stanford.edu
	Nancy (Qi) Zhao	Rotating	nqzhao@stanford.edu



Second Year	Name	Lab	Email
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Marvin Gee

Garcia






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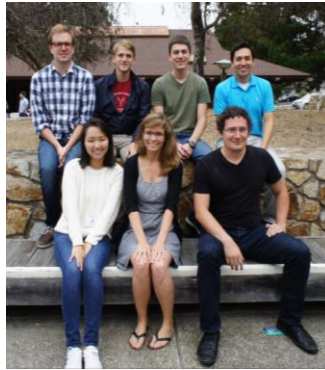
Zinaida Good





Bendall/
Nolan


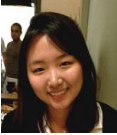

zinaida@Stanford.edu

Second Year	Name	Lab	Email
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	Leah Sibener	Garcia	lsibener@Stanford.edu
	Jonathan Wosen	Mellins	jwosen@Stanford.edu





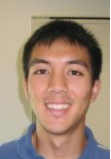













Third Year	Name	Lab	Email
	Nicholas Bayless	Blish	bayless@stanford.edu
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Fourth Year	Name	Lab	Email
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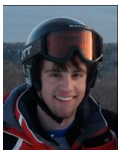
Sixth Year	Name	Lab	Email
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Seventh Year	Name	Lab	Email
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General Overview of Program Training

	Tasks	Research	Coursework	Teaching
YEAR 1	<ul style="list-style-type: none"> -Take required & elective classes -Apply for 2 external fellowships -Choose thesis advisor -Choose academic track 	<p>40%</p> <p>3 lab rotations</p>	<p>60%</p> <ul style="list-style-type: none"> -Annual Scientific Conference -Foundations -Immunology Core & CSI Core -Principles of Biological Technologies* (Imm 215) -Journal Club (Imm 305) -Scientific Conduct (Med 255) -Seminars (Imm 311) -Seminars Discussion (Imm 311a) -Rotations presentations (mid-June): End of year assessment of academic progress -CSI core: CS 106a, CS 109, Imm 206, Imm 310 	<p>0%</p>
YEAR 2	<ul style="list-style-type: none"> -Pass qualifying exam - Advance to PhD candidacy -Choose reading committee 	<p>70%</p> <p>Dissertation research</p>	<p>25%</p> <ul style="list-style-type: none"> -Qualifying Exam: General Oral Exam & Research Proposal, before Dec 17th; take TA training -Journal Club (Imm 305) -Pathogenesis (MI 210) -OR- -Advanced Cell Biology (Bio 214)* -Or- -Introduction to Applied Tools in Computational and Systems Immunology (Imm 206) -1 Elective course for MCTI -2 Elective courses for CSI -Continue with CSI core courses -Seminars (Imm 311) -Annual Scientific Conference (talk or poster) 	<p>5%</p> <p>2 Teaching assistantships*</p>
YEAR 3		<p>90%</p> <p>1 thesis committee mtg</p>	<p>5%</p> <ul style="list-style-type: none"> -Annual Scientific Conference (talk or poster) -Journal Club (Imm 305) -Seminars (Imm 311) -Science-in-Progress (SIP) – student seminars 	<p>5%</p> <p>Teaching assistantships**</p>
YEAR 4	<ul style="list-style-type: none"> -Attain TGR status 	<p>90%</p> <p>2 thesis committee mtgs</p>	<p>5%</p> <ul style="list-style-type: none"> -Annual Scientific Conference (talk or poster) -Seminars (Imm 311) -Science-in-Progress (SIP) – student seminars 	<p>5%</p> <p>Teaching assistantships**</p>

YEAR 5	<p><i>-PhD Orals Dissertation Defense</i></p>	<p>100%</p> <p>2 thesis committee mtgs (Grad. program committee member must be present)</p>	<p>0%</p> <p>-Research-in-Progress (RIP) – student seminars -Petition to defend -Dissertation defense -Submission of the Dissertation to the Registrar</p>	<p>0%</p>
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*MCTI track only

**only two TAs are required.

PhD Curriculum

Candidates for PhD degrees at Stanford must satisfactorily complete a program of study that includes 135 units of graduate course work and research. At least 3 units must be taken with each of four different Stanford faculty members. Dr. Martinez will discuss and approve your selection of courses in your quarterly advising meetings. Study lists are submitted quarterly through Student AXESS with a total 10 units of coursework. Study lists containing less than 9 units do not meet the university’s minimum degree progress or visa requirements for international students. Graduate students (including MD/PhD students in the graduate student phase of their training) must take all required courses for a letter grade. A letter grade of “C” is considered a failing grade. The University requires that you maintain a 3.0 GPA in order to remain enrolled at Stanford University. Written petitions for exemptions to core curriculum and lab rotation requirements are considered only in the first year. Approval is contingent upon special circumstances and is not routinely granted. Courses for the PhD degree in Immunology fall into 2 main areas: foundational and elective courses.

All students in the two tracks, Molecular, Cellular, and Translational Immunology (MCTI) and Computational and Systems Immunology (CSI) are required to enroll in the following core courses:

Foundational Courses for Both MCTI and CSI Tracks

PhD Curriculum in Immunology							
Qtr/ Yr	Advanced Undergraduate Course (if needed)						Notes
	Course	Dept	No.	Qtr	Units	Yr	
	Chemistry of Biological Processes	Bioch	220	Aut	4	1 st	
	Molecular & Cellular Immunology (Jones)	Biol	230	Aut	4	1 st	*
Required Foundational Courses							
	Course	Dept	No.	Qtr	Units	Yr	
	Molecular & Cellular Immunology Literature Review (Jones)	Biol	230a	Aut	1	1 st	
	Foundations in Experimental Biology	BIOS	200	Aut	6	1 st	
	Advanced Immunology I (Chien)	Imm	201	Win	3	1 st	
	Advanced Immunology II (Garcia)	Imm	202	Spr	3	1 st	
	Immunology Journal Club (Martinez)	Imm	305	AW S	1	1 st - 3 rd	
	Immunology Seminar Series (Alizadeh)	Imm	311	AW S	1	1 st	
	Immunology Seminar Discussions (Rothbard)	Imm	311a	AW S	1	1 st	
	Immunology Graduate Research	Imm	399	AW SS	1-18	1 st - 4 th	
	Teaching in Immunology	Imm	290	AW SS	1-15	1 st - 2 nd	
	Responsible Conduct in Research (Kazarkis)	Med	255	AW S	1	1 st	**

*For students who have not previously had an introductory Immunology course.

**The medical school course, "Responsible Conduct in Science," Med 255, must be completed before the end of the first year. Students supported by the NIH or NSF must send a scanned copy of the certificate to the Program Administrator, who will inform NIH and NSF that this requirement has been completed.

Track-Specific Foundational Courses

In addition to the general requirements listed above, students must also complete requirements within their track.

Qtr/ Yr	Required Foundational Courses for Molecular, Cellular, and Translational Immunology Track (MCTI)						
	Course	Dept	No	Qtr	Units	Yr	Notes
	Advanced Immunology III (Krams)	Imm	203	Su m	3	1 st	
	Principles of Biological Technologies (Kirkegaard)	Imm	215	Win	2	1 st	
	Biostatistics (Baiocchi)	Bio	141	Aut	3-5	1 st - 2 nd	
<i>1 out of three possible courses</i>							
	Advanced Pathogenesis of Bacteria, Viruses, and Eukaryotic Viruses (Monack)	MI	210	Spr	4	1 st - 2 nd	
	Advanced Cell Biology (Jonikas, Kopito, et al)	Bio	214	Win	4	1 st	
	Introduction to Applied Tools in Computational and Systems Immunology (Maecker, Andorf)	Imm	206	Spr	2	1 st	
Qtr/ Yr	Elective Specialization Courses for Molecular, Cellular, and Translational Immunology Track (MCTI)						
	Course	Dept	No	Qtr	Units	Yr	Notes
	Tumor Immunology (Engleman, Rothbard)	Imm	275	Aut	3	1 st - 4 th	
	Cell Signaling (Meyer)	CSB	210	Win	4	1 st - 4 th	
	Biological Macromolecules (Das, Harbury et al)	SBIO	241	Aut	3-5	1 st - 4 th	
	Developmental Biology (Fuller)	DBIO	210	Spr	4	1 st - 4 th	
	Molecular, Cellular & Genetic Basis of Cancer (Giaccia)	CBIO	241	Aut	5	1 st - 4 th	
	Innate Immunity (Schneider)	Imm	204	Win	3	1 st - 4 th	
	Immunology in Human Health & Disease	Imm	205	Win	4	1 st - 4 th	
	Introduction to Applied Tools in Computational	Imm	206	Spr	3-4	1 st - 4 th	

and Systems Immunology (Maecker, Andorf)							
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CSI Track Purpose

The past decade has seen an explosion in the availability of high-throughput datasets spanning including information on everything from DNA sequences to RNA transcript abundances, single-cell protein profiles, protein variants and metabolite profiles. These multi-dimensional omics datasets are complex to integrate, visualize and analyze for those not well versed in systems biology and bioinformatics. A new generation of scientists is needed to take advantage of these resources to ask and answer novel important questions in immunology. Typical bioinformatics and systems biology programs are focused solely on the technical components of the challenge – suffix trees, inference methods, etc. Although a critical and required background, these students are unable to develop tools that are specifically targeted to the challenges faced in immunology. Likewise, they do not have the domain knowledge to perform independent research in immunology. It is hoped to generate a class of hybrid scientists who use a deep grounding in immunology, to identify important problems in immunology and to devise appropriate integrated computational/experimental plans for tackling them. These plans may require using existing computational approaches, but may also involve the development of entirely new approaches.

CSI students must ultimately be - first and foremost - translators capable of converting biologist-speak hypotheses into computer-speak discussions of algorithms and statistical models. This translation is challenging and only comes from exposure to a wide number of problems and their solutions. Towards this goal of developing exceptional translators, we will first introduce these students to the immunology core. Subsequently, they will learn existing approaches for sequence analysis, lineage tracing, transcript and protein analysis, etc. Next, we will dive deeply into the origins of those approaches, their technical underpinnings, and their limitations. Lastly, CSI students will take a series of elective courses to deepen their understanding of mathematical and computational principles and recipes that will be the foundation they use to develop the next generation of tools and approaches.

Students in the CSI track will be able to : 1) develop new computational tools that use multiple large-scale publicly available omics datasets to enhance the knowledge of immunology and immunobiology; 2) integrate of new computational omics analysis techniques into existing, well-established genomic data analysis pipelines/frameworks to better understand immunology and enable researchers/clinicians to rapidly leverage omics advancements and 3) develop new and innovative multi-omic simulation and / or visualization methods that make systems immunology accessible to research scientists with no

programming experience, thus bridging the gap between computational data mining and human knowledge to extend insight.

Qtr /Yr	Required Foundational Courses for Computational and Systems Immunology Track (CSI)						
	Course	Dept	No.	Qtr	Units	Yr	Notes
	Programming Abstractions (Accelerated) or <i>equivalent</i>	CS	106 X	Aut	3-5	1 st	
	Introduction to Probability for Computer Scientists (Plotkin)	CS	109	Spr	3-5	1 st or 2 nd	
	Design and Analysis of Algorithms (Sahami)	CS	161	Spr	3-5	1 st or 2 nd	
	Essential Methods in Computational and Systems Immunology (Mallick, Khatri)	Imm	207	Spr	3	1 st or 2 nd	
	Seminars in Computational and Systems Immunology (Kotecha)	Imm	310	Sp S	3-10	1 st - 2 nd	
	Biostatistics (Baiocchi)	Bio	141	Aut	3-5	1 st - 2 nd	
	Introduction to Biomedical Informatics Research Methodology	Biom edin	212	Spr	3	1 st - 2 nd	
	Representations and Algorithms for Computational Molecular Biology (Altman)	BioE	214	Aut	3-4	1 st - 2 nd	
Qtr/ Yr	Two CSI Electives for Specialization (see below)						
	Course	Dept	No.	Qtr	Units	Yr	Notes
	Introduction to Linear Dynamical Systems	CME	264	Aut	3	2 nd - 4 th	
	Randomized Algorithms and Probabilistic Analysis	CME	309	Aut	3	2 nd - 4 th	
	Introduction to Statistical Signal Processing	EE	278 B	Aut	3	2 nd - 4 th	
	Introduction to Numerical Methods	CME	206	Aut	3	2 nd - 4 th	
	Data Mining and Analysis	Stats	202	Aut	3	2 nd - 4 th	
	Advanced Methods in Numerical Optimization	CME	334	Aut	3	2 nd - 4 th	

	Introduction to Stochastic Processes	Stats	217	Win	2-3	2 nd -4 th	
	Convex Optimization	CME	364 A	Win	3	2 nd -4 th	
	Computational Genomics	BioMed	262	Win	3	2 nd -4 th	
	Applied Fourier Analysis and Elements of Modern Signal Processing	CME	372	Win	3	2 nd -4 th	
	Information Theory	EE	376 A	W	3	2 nd -4 th	
	Computational Methods for Biomedical Image Analysis and Interpretation	BioMed	260	Spr	3	2 nd -4 th	
	Algorithms in Biology	BioMed	374	Spr	3-4	2 nd -4 th	
	Introduction to Stochastic Processes	Stats	217	Sum	3	2 nd -4 th	

In order to build their computational skill sets, CSI students may be advised to take additional courses by their thesis committees. To see a description of the specific courses, please go to the *Explore Course* website and search for the course you are interested in. <http://explorecourses.stanford.edu/CourseSearch/>

In addition, students are encouraged to create and administer elective courses on a topic of their choosing, with funding provided by the program.

Financial Aid

Immunology graduate students are supported from a variety of sources: NIH training grant fellowships, nationally competitive individual fellowships, university fellowships, foreign fellowships, and research assistantships. For students funded by fellowships, quarterly stipends are directly deposited into the students' checking accounts usually on or before the first day of class (for direct deposit instructions, please go to: <https://axess.stanford.edu/>). These stipends are supplemented up to the approved stipend level for the academic year, either as a stipend or a bi-weekly payment. Bi-weekly payments usually have taxes withdrawn whereas stipends do not; a student will receive a bi-weekly paycheck as

either a supplement to a fellowship stipend or as a research assistantship in their 4th-5th years. Below is a typical funding schedule (Funding Timeline). In order to alleviate the stipend and tuition costs to the PhD advisor in the 4th and 5th years, immunology graduate students are encouraged to apply for both external (NIH, NSF) and internal fellowships (SGF, Mason Case, or BIO-X).

Year 1	<p>Immunology Training Grant (primary funding for 3 years) Immunology Program Flex Funds, stipend supplement SGF (3 years) NSF (3 years). First year students are allowed to re-apply. <i>Students are required to apply for at least 2 external fellowships (e.g., NSF, NIH, or NDSEG)</i></p>
Year 2	<p>Immunology Training Grant, 2nd year School of Medicine stipend and tuition supplements from non-NIH sources SGF, 2nd year NSF, 1st or 2nd year NIH NRSA Predoctoral Fellowship, 1st or 2nd year (apply after December 17th, the deadline to complete the Qualifying Examination Process. Parts I and II) <i>Students apply for external and internal fellowships</i></p>
Year 3	<p>Immunology Training Grant, 3rd and possibly last year School of Medicine stipend and tuition supplements from non-NIH sources SGF, 3rd and last year NSF, 2nd or 3rd year NIH NRSA Predoctoral Fellowship, 2nd or 3rd year <i>Students apply for external and internal fellowships</i></p>
Year 4	<p>Immunology Training Grant, possible 4th and last year School of Medicine stipend and tuition supplements from non-NIH sources NSF, 3rd and last year NIH NRSA Predoctoral Fellowship, 3rd or 4th year; internal fellowships (Mason Case, Lieberman Fellowships, BIO-X) Research Assistantships; School of Medicine tuition supplements from non-NIH sources</p>

	TGR in Spring or Summer quarter <i>Students apply for external and internal fellowships</i>
Year 5	Research Assistantships; Preceptor is responsible for both salary and TGR tuition. NIH NRSA Predoctoral Fellowship, 5 th and last year; internal fellowships (Mason Case, Lieberman Fellowships, BIO-X) TGR (Terminal graduate residence=lower tuition costs) Completion of other miscellaneous fellowships

More information regarding the Student Graduate Financial payroll systems can be found on:

<http://www.stanford.edu/group/fms/fingate/students/index.html>

This website provides information on how to read and understand your university bill, tax information, payroll for graduate students on research assistantships.

Fellowships for Graduate Students

Students are required to apply for fellowships continuously throughout their graduate career. Writing for graduate fellowships is an excellent introduction to grant writing and provides a foundation for writing postdoctoral fellowships and faculty grants.

First year graduate students (including recipients of SGFs) are required to:

- Attend a writing workshop specifically focused on grant writing (both 4 week workshops and a 13 week academy will be offered)
- Meet Faculty writing mentors once a week to go over their fellowship application
- submit an NSF (November deadline)
- If applicable, first year students may apply for NGSEG fellowships (due January)

Second year graduate students are required to:

- Revise and resubmit their NSF fellowship if not awarded in their first year (November deadline)
- After the qualifying examination process is completed, second year students must apply for the NIH NRSA (4 rolling deadlines throughout the year)
- Attend the NIH workshop offered by the fellowship office, which will teach them to do a PDRF, NIH budgets and forms, etc. These workshops are offered once a quarter.
- Meet once a week with Faculty writing mentors to go over their fellowship applications
- Apply for other graduate fellowships as applicable.

Third and fourth -year graduate students must revise their NIH NRSA fellowship applications if they were not previously funded

The following is a list of many of the fellowships to which prospective and current graduate students may apply.

For a comprehensive listing of fellowships, please consult

http://med.stanford.edu/rmg/funding/grad_student.html

Fellowship	Deadline	Contact Information	Who's eligible
National Science Foundation Graduate Research Fellowship Program (GRFP) http://www.nsf.gov/grfp.org/	November	866-673-4737 (866-NSF-GRFP)	1) US Citizen 2) First year of Graduate school or first qtr of 2 nd year (must have completed no more than 12 months of full-time graduate study) 3) Field of Study – research-based master's and doctoral degrees in the fields of science and engineering
The Paul and Daisy Soros	November	Pdsoros_fello_ws@sorosny.	1) A New American (green card holder or

<p>Fellowships for New Americans http://www.pdsoros.org/</p>		<p>org 212-547-6926</p>	<p>naturalized citizen or child of naturalized citizens 2) Under 31 years old 3) A college senior or holder of a bachelor's degree 4) Not beyond 2nd year in graduate degree program</p>
<p>American Association of University Women (AAUW) http://www.aauw.org</p>	<p>American Fellowships – Nov International Fellowships – Dec</p>	<p>aauw@act.org 319-337-1716</p>	<p>AAUW Fellowships support women doctoral candidates completing dissertations. Candidates must be U.S. citizens or permanent residents. Candidates are evaluated on the basis of scholarly excellence, the quality and originality of project design, and active commitment to helping women and girls through service in their communities, professions, or fields of research. International Fellowships are awarded for full-time study or research in the United States to women who are not United States citizens or permanent residents. Several fellowships are available for study outside of the U.S.</p>
<p>National Defense Science and Engineering Graduate Fellowship (NDSEG) http://ndseg.assee.org</p>	<p>December</p>	<p>ndseg@asee.org 202-649-3831</p>	<ol style="list-style-type: none"> 1) US Citizen 2) One of 15 supported disciplines 3) Be enrolled in final year of undergraduate studies, or have completed less than two full-time years of graduate study 4) Start fellowship fall of the year awarded

UNCF Merck Science Initiative http://umsi.uncf.org	December	UNCF/Merck Science Initiative, United Negro College Fund, Inc. 8260 Willow Oaks Corporate Drive, Ste 110 Fairfax, VA 22031-4511 uncfmerck@uncf.org	<ol style="list-style-type: none"> 1) African American 2) Enrolled in a full-time Ph.D. or equivalent doctoral degree program majoring in a life or physical science, or engineering. M.D. /Ph.D. degree candidates Engaged in and within 1-3 years of completing dissertation research, having successfully completed all qualifying exams. 3) A citizen or permanent resident of the United States.
SDE/GWIS (Graduate Women in Science) Fellowships http://www.gwis.org/programs.html	January	fellowships@qwis.org 919-668-1439	Women holding a degree from a recognized institution of higher learning, of outstanding ability and promise in research, who are performing research at any institution in the U.S. or abroad.
Ruth L. Kirshstein National Research Service Award (NRSA) http://grants.nih.gov/training/nrsa.htm	April August December		F30 for MD/PhD F31 PhD
Alternatives Research and Development Foundation (ARDF) Research Grant http://www.ardf-online.org/	Please check website for grant deadlines.	info@ardf-online.org (215) 887-8076 801 Old York Road, Suite 316, Jenkintown, PA 19046	The mission of the ARDF is to fund and promote the development, validation and adoption of non-animal methods in biomedical research, product testing and education.
Bio-X Graduate Student Fellowships http://biox.stanford.edu	Applications for the 2015-2016 cycle will be		The Bio-X Graduate Fellowship Program at Stanford provides current graduate students whose

ford.edu/grant/fellowships.html	available on-line in early January 2015.		research interests are interdisciplinary in nature with three years of funding support.
Howard Hughes Medical Institute (HHMI) International Student Research Fellowships http://vpge.stanford.edu/hhmi.ht	Applicants must apply for an internal Stanford deadline. Nov 18, 2014 is the institutional nomination deadline.		<ul style="list-style-type: none"> • Have demonstrated exceptional talent for research • Be currently in the second (or third) year of doctoral study, enrolled full-time in a program in the biomedical or related sciences, including physical and mathematical sciences • Are NOT US citizens, noncitizen nationals or permanent residents of the United States

Tax Information

Graduate students are supported by fellowship stipends or research assistantships.

1. If you are primarily supported by a fellowship, you are receiving a quarterly stipend. Stipend checks are issued the day before classes. Stanford does not withhold tax on quarterly stipends. The amount of tax varies according to total income, dependency status, treaty status for international students, and individual circumstances. The student is responsible for making quarterly estimated tax payments to the IRS and California's state tax board. Students who are currently paying for their own tuition are issued a 1098T, which allows them to claim educational tax credits. You should NOT use the 1098T for tax purposes as your stipend and tuition are entirely covered by fellowship funds.
2. Students are paid on the 7th and 22nd of the month (or on the preceding work day if these dates fall on a weekend or holiday). Federal and state taxes from research assistantships should be filed on April 15th. Students can fill out an on-line W-4 application through Student AXESS. At the end of January, a W2 is sent annually to students supported by bi-weekly pay.
3. International students may receive tax assistance and may contact Bechtel to see what resources are available. Instead of a 1098-T,

international students will receive a 1099-T (stipend pay) or 1042-S (bi-weekly pay). Fellowship stipends paid to non-U.S. residents are subject to a 14% withholding, regardless of the number of dependents.

The Office of Student Financial Services offers more tax information through their website: <http://studentaffairs.stanford.edu/sfs/tax>. To determine the amount of taxes that you should pay, please go to the link <https://studentaffairs.stanford.edu/sfs/tax/resources-funding>. To be absolutely certain about how to file your taxes, please consult a tax professional.

The Journey Begins: First Year Advising

During the summer prior to enrolling for Autumn Quarter, first-year students are required to read Janeway's *Immunobiology*, 8th edition, in preparation for their graduate studies. The Graduate Program Chair, Dr. Olivia Martinez, assists each incoming student in selecting courses and lab rotations for the first year and in choosing a lab for the dissertation research (please use the degree progress form at the back of this handbook to keep track of your milestones.) In the first-year advising meeting, Dr. Martinez will determine if the student's undergraduate training in biology and cognate disciplines are equivalent to the required undergraduate Biology major curriculum at Stanford. If there are gaps in the undergraduate training, the first-year student and Dr. Martinez will design a specific first year curriculum. In the first year of graduate study only, Dr. Martinez will also consider petitions to waive or substitute courses for required courses. The advising schedule for the entering class is as follows:

First Year Advising and Orientation Time Line

Date	Event
September	Advising Meetings with Olivia Martinez; determine individuals' curriculum and autumn quarter lab rotations. Immunology Startup Asilomar Scientific Conference

	SBSA (Stanford Biosciences Student Association) camping trip with all First Years in the Biosciences
December	End of Quarter meetings with Dr. Martinez; final exams begin. Identify and arrange winter quarter rotations.
January	First day of Winter quarter
March	End of Quarter meetings with Dr. Martinez; final exams begin. Identify and arrange spring quarter rotations (Qualifying Examination Process Part I). First day of Spring quarter
June	End of Quarter meetings with Dr. Martinez; final exams begin. If necessary, identify and arrange summer quarter rotations. First Year Rotations Presentations and Graduate Program Committee Advising. Students will present a 15-minute talk on one of their first year rotations to the Graduate Program Committee and other first year students. In addition, students will meet individually with the Graduate Program Committee to review and discuss their academic progress and selection of a thesis lab.
August	Dr. Martinez will meet with the First years as a group, now rising Second Years, to go over the Qualifying General Oral Exam and Research Proposal Oral Exam (Qualifying Examination Process Part II), which must be completed before Wednesday, December 17, 2014. Teaching assistantships will also be discussed.

First Advisory Meeting

In the first meeting with Dr. Martinez, two main topics will be discussed: rotations and coursework. Rotations are a very important component of the first year, as they permit first-year students to assess possible labs to do their PhD thesis research. Below are typical questions that first year students ask about choosing lab rotations.

FAQS: Choosing Labs for Rotations and Thesis Research

1. How do you find a lab to rotate in?

The first step is to identify faculty members and labs where the research is of interest to you. You can get information on Immunology Faculty members and their research interests at:

<http://immunol.stanford.edu/research/faculty.html>. It is a good idea to identify 3-5 labs of interest as soon as possible. Current graduate students are a good source of information about the research interests and styles of individual labs. You'll hear research talks at the Asilomar retreat, but this is just a subset of the Faculty in the Program that are interested in having graduate students. You are encouraged to explore all your options for lab rotations. Finally, you can always contact members of the Graduate Program Committee or Dr. Martinez if you need guidance with identifying or choosing a lab to rotate in.

2. When and how do you ask a faculty member if you can rotate in their lab?

It's easiest to email the Faculty member, tell them you are interested in rotating in their lab and ask if they are taking rotation students. If so, arrange to meet with the Faculty member to discuss a potential rotation. At the meeting you should discuss why you are interested in the lab and possible rotation projects. If you haven't already arranged your first rotation when you arrive for Orientation, you should start the process immediately. To arrange rotations for winter and spring quarters it is best to begin talking to Faculty members about rotating by week 8 or 9 of the prior Quarter.

3. What should you expect to accomplish in your rotation?

The lab rotation is a chance to get familiar with the lab and to help you determine if it is a good fit for you. During your rotation you should plan to spend most of the time that you are not in class, in the lab. If you do this, by the end of the Quarter you will have a good sense of the research going on in the lab and thesis projects you might be interested in as well as the culture and dynamics of the lab, and the mentorship style of the Faculty member. These are all important aspects of helping you choose a lab. As a guideline, you are expected to make sufficient progress on your rotation project to give a 15 minute presentation to the Graduate Program Committee on your rotation research-you will be asked to present the work from one of your rotations to the Graduate Program Committee in June. Your rotation advisor will also expect you to present your work to the lab at the end of your rotation.

4. *How many rotations should you do?*

We expect that students will rotate in 3 labs (one each quarter) so that by June of their first year they can choose a lab for their dissertation research. At least two of these rotations should be in Immunology labs. In some cases, students may wish to do a fourth rotation in the summer of their first year before choosing a lab.

5. *What if you know the lab you are rotating in isn't for you?*

Sometimes you know immediately that the lab just isn't a right fit for you and that is okay. In this case, it is important to advise Dr. Olivia Martinez and look for a new rotation. Rotations are for you to find the lab that is the best fit for you.

Rotation advice:

- Set up your rotations as early as possible.
- Talk to as many principal investigators (PIs) as possible, both about their work and the work of other potential labs.
- Attend multiple lab meetings in various labs of interest. This allows you to see the culture of the lab without committing to a full rotation. Also, you will be able to see the current status and future directions of many projects in the lab. Lab meetings are the best place to get the most current scoop on the PI's research.
- Get the scoop on that lab from the other students in the department.
- Don't be afraid to expose yourself to new and different areas of science that appeal to you.

Advice on choosing a thesis lab

Your thesis lab is where you'll be spending a lot of time over the next few years, so do your best to find a place that feels comfortable for you. Important components of finding a good fit include the mentorship style of the PI and the scientific questions being addressed in the lab. Gain information by talking to as many current and former lab members, other students, and PIs to get information about a lab.

Typical questions to ask others and yourself when choosing a lab include:

- What is the PI's mentoring style? PI's philosophy in dealing with people and publishing papers?
- How does the PI choose and distribute projects among lab members, and the role the student plays in decision-making?
- How much time does the PI spend with lab members?
- How much time is the PI away from the lab for travel?
- Does the PI help his/her people get good postdoc positions/jobs? Does s/he give career advice?
- How does the PI handle collaborations?
- What is the student: postdoc ratio? Few students and many postdocs have a different feel than many students and few post docs.
- What the lab's publication record, especially for graduate students? Have there been authorship conflicts? If so, why?
- How supportive is the PI of lifestyle choices (spouse, children, and other important non-lab commitments)?
- Are the people in the lab happy? Do they get along well and work together?
- How many hours do people work in the lab?
- What is the financial situation of the lab?
- What is the average time to completing a Ph.D. degree in the lab?

During 2 days in June, students will present their research in one lab rotation to the Graduate Program Committee. This event is Part I of the Qualifying Examination Process.

Student-Advisor Relationships

The Advisor-Advisee relationship is an important component of the graduate school experience. A description of the faculty and student roles from the Office of the Vice Provost of Graduate Education (VPGE) can be found on their website, <http://vpge.stanford.edu/>. When you have chosen a lab, you and your PI should fill out the Student Advisor

Expectation Scales form found on the VPGE webpage http://vpge.stanford.edu/docs/adv_expectations.pdf. This document will also be sent to your PI by the Immunology Program Office; this form can provide a basis for conversations between students and advisors to align their expectations. Students are encouraged to meet weekly with their advisor regarding their thesis project and at least annually regarding career development.

The VPGE offers workshops that provide guidance with issues like advisor-student relationships, imposter syndrome, career development, how to find a postdoctoral position, etc.

In August 2013, the NIH announced a new requirement, the Individual Career Development Plan (CDP) for every graduate student and postdoctoral fellow. Students will be expected to develop CDPs to assist them in shaping their graduate education and in considering plans for after they complete their PhD. The Immunology Graduate Program and Postdoctoral Committees are creating the format and structure of the CDPs and will make recommendations this year about implementing this requirement. NIH considers the CDPs to be a useful tool to help graduate students and postdocs identify their career goals and what they need to accomplish these goals. More importantly, these CDPs can facilitate conversations about career goals among faculty, graduate students and postdoctoral fellows.

Vacation Policy

Students may have up to 4 weeks of vacation a year. First Year students must check with Dr. Olivia Martinez before making travel arrangements as taking vacation for more than four weeks will impact your degree progress. Second year and above students must have permission of their PI to take vacation. Students should plan their personal vacation carefully. It is not advised to take vacation during the quarter if you are taking courses. Please do not plan vacation during the Rotation Presentations in June/July.

Requirements for Second Year

Students must complete all core course requirements by the end of their second year. Administration and evaluation of these requirements leading to PhD candidacy is the responsibility of the Graduate Program Committee; the student's dissertation committee is responsible for advising the student through the research and other courses as needed towards the completion of the PhD dissertation. Elective courses are agreed upon by the student, advisor and dissertation committee. These courses may be chosen from graduate courses and seminars in any of the biomedical science departments and programs.

To continue to foster exposure of graduate students to a breadth of sub-fields across immunology, graduate students beyond the first year are required to attend at least 50% of the Immunology Seminars each quarter.

Students interested in TAing during their second year should refer to the TAship information on page 40.

Qualifying Exam Process Part II (Autumn, Year 2)

The qualifying exam includes a written thesis proposal and an oral exam by the Thesis Committee. The members of the Thesis Committee are chosen by the student and the PhD advisor. At least two of the thesis committee must be members of the Immunology program faculty; this may include the thesis advisor. The Thesis advisor is not present for the qualifying examination. The deadline for completion of the qualifying examination is Wednesday, December 17th, 2014, in the autumn quarter of the second year. During the oral portion of the qualifying exam, questions outside the research proposal may be asked by the Thesis committee of the student, in addition to questions about the actual thesis proposal. The Thesis Committee will assign a grade for the Qualifying Exam and the Chair of the Committee will provide a written report. Upon successful completion of the examination, the student may apply for PhD candidacy.

To prepare for Part II of the Qualifying Examination Process, it is highly recommended that students visit the Center for Learning and Teaching (CTL). CTL instructors teach oral communications skills and provide

feedback on your presentation style. CTL will help you with your qualifying examination presentations, committee meetings, and thesis defenses. (<https://teachingcommons.stanford.edu>)

For the written proposal, the student will follow the instructions for an NIH research grant in terms of format, except that he/she may have only limited preliminary results. The written proposal should be 18 pages double-spaced, instead of the standard 13 page single-spaced NIH (RO1, PHS form 398) proposal. All tables, graphs, figures, diagrams, and charts must be included in the 18 page limit. Failure to follow the NIH format, including exceeding font size (Arial font, 11 pitch), 0.5" margins, or page limits may result in the Committee's decision to have the student rewrite the thesis before giving a passing grade. It is strongly recommended that the student work closely with the Committee, particularly the Thesis Advisor, in preparing a hypothesis-driven thesis proposal. Students should review successful NIH grants prepared by Faculty members as a template. These are available through the Immunology Program Administrator. Please see specific formatting instructions for the written version of the orals below:

- *Specific Aims.* List the broad, long-term objectives and what the specific research proposed is intended to accomplish. What is the problem you are trying to solve? Why is it important? Include the hypothesis. The hypothesis answers the questions: what is it that you intend to do? And why is the work important? The single, biggest mistake made in grant applications and thesis proposals is failure to succinctly state a testable hypothesis. PHS 398, Part I. Section 5.5.2: "State concisely the goals of the proposed research and summarize the expected outcome(s), including the impact that the results of the proposed research will exert on the research field(s) involved. List succinctly the specific objectives of the research proposed, e.g., to test a stated hypothesis, create a novel design, solve a specific problem, challenge an existing paradigm or clinical practice, address a critical barrier to progress in the field, or develop new technology."
- *Research Strategy.* The Research Strategy is composed of three distinct sections: Significance, Innovation, and Approach. Note that the Approach section also includes preliminary studies. What is the

current scientific background of the thesis project? The existing body of knowledge in the relevant areas of the thesis project should be critically evaluated. What gaps are there in this body of knowledge? Where does your thesis project fall? State concisely the importance of the research described by relating the specific aims to the broad long-term objectives. The Research Strategy should be organized in the specified order with appropriate headings: Significance, Innovation, and Approach. The following is excerpted from PHS 398, Section 5.5.3:

a) Significance

- Explain the importance of the problem or critical barrier to progress in the field that the proposed project addresses.
- Explain how the proposed project will improve scientific knowledge, technical capability, and/or clinical practice in one or more broad fields.
- Describe how the concepts, methods, technologies, treatments, services, or preventative interventions that drive this field will be changed if the proposed aims are achieved.

(b) Innovation

- Explain how the application challenges and seeks to shift current research or clinical practice paradigms.
- Describe any novel theoretical concepts, approaches or methodologies, instrumentation or intervention(s) to be developed or used, and any advantage over existing methodologies, instrumentation or intervention(s).
- Explain any refinements, improvements, or new applications of theoretical concepts, approaches or methodologies, instrumentation or interventions.

(c) Approach

- Describe the overall strategy, methodology, and analyses to be used to accomplish the specific aims of the project. Unless addressed separately in the Resource Sharing Plan, include how the data will be collected, analyzed, and interpreted as well as any resource sharing plans as appropriate.
- Discuss potential problems, alternative strategies, and benchmarks for success anticipated to achieve the aims.

- If the project is in the early stages of development, describe any strategy to establish feasibility, and address the management of any high risk aspects of the proposed work.
- Point out any procedures, situations, or materials that may be hazardous to personnel and precautions to be exercised. A full discussion on the use of Select Agents should appear in 5.5.11 below.
- If research on Human Embryonic Stem Cells (hESCs) is proposed but an approved cell line from the NIH hESC Registry cannot be identified, provide a strong justification for why an appropriate cell line cannot be chosen from the Registry at this time.

If the qualifying exam proposal has multiple Specific Aims, then the applicant may address Significance, Innovation and Approach for each Specific Aim individually, or may address Significance, Innovation and Approach for all of the Specific Aims collectively.

The student should include any preliminary studies that will help establish the appropriateness and feasibility of the thesis project. The student is expected to make use of the faculty advisor's preliminary results if he/she has not already obtained a significant amount of preliminary results. In light of the early deadline for the General Orals and Qualifying Examination, Dec 17th, a student's thesis project may change several months after the dissertation proposal is defended. If such a change occurs, the student should inform his/her Dissertation Proposal Committee by submitting a short, three-page written report describing the necessary changes. If no changes are necessary, then the student should proceed in a normal fashion, e.g., scheduling the annual dissertation committee meeting a year later.

- a. *Human Subjects.* Provide sufficient information for any human subjects studies.
- b. *Vertebrate Animals.* Provide sufficient information for any animal subject studies.
- c. *Literature Cited.* Literature citations should be listed at the end of the proposal. Each literature citation must include the title, names of all authors, book or journal, volume number, page numbers, and year of publication.

The Oral Examination is intended to test the student on the proposed research area but may also include an examination on general immunology knowledge. The format of the Oral Examination typically begins with a presentation of the thesis proposal. Students should prepare a presentation of 45-50 minutes on the proposed research focusing on experimental design, data interpretation and potential problems. Preliminary data should be included. Faculty will question the student about the work, its interpretation, the methods, and background questions relevant to the proposal. The thesis mentor is not allowed to be present at the Oral Examination.

After the Oral Examination is completed the designated Chair of the Dissertation Proposal Committee and the thesis advisor will both provide a written evaluation (paragraph) and grade of the dissertation proposal. The Dissertation Proposal Form should be signed by all of the committee members

(<http://immunol.stanford.edu/phd/forms/second/DissProposalForm.doc>). The evaluation will describe the strengths and weakness of the proposal. The letter grade will be entered into the university's system and appear on the student's transcript. A student receiving a grade lower than B, may be asked to rewrite the dissertation proposal. If the Dissertation Proposal Committee does not give a passing grade to the student's rewritten version, then the Graduate Program Committee will meet to consider whether extenuating circumstances warrant permitting the student to be examined a second time. The second opportunity to take the Qualifying Exam should occur before the student's third year begins. If so, the Graduate Program Committee will permit a second examination, or if he or she is given such an opportunity and fails the second examination, he or she will be dismissed from the Program. The dismissal shall be made in writing.

After successful completion of the Qualifying Examination, the student may apply for admission to Ph.D. candidacy (<http://immunol.stanford.edu/phd/forms/second/appdoc.pdf>). Admission to Ph.D. candidacy means that the student has completed the Qualifying Examination and most of the course requirements of the Immunology Program and is now ready to begin thesis research leading to a

dissertation and University oral exam. The Application for Candidacy for Doctoral Degree form must be filled out and submitted to the Program Administrator at the end of the winter quarter of the second year; timely submission of graduate paperwork is required for certifying satisfactory degree progress for many fellowships, in particular the NSF and the SGF. The schedule will be adjusted to fit the needs of MOM, MSTP and MD/PhD students, or students who transfer from another program.

Requirements for Third Year and Above

Committee Meetings

Students are required by the University and Program to hold annual committee meetings. Best practices for arranging committee meetings are:

- Send a doodle calendar request to your committee members
- Take into account and avoid the following reasons that may cause delay: committee members' travel schedules, NIH grant deadlines, major program events such as admissions interview weekend, holidays, etc.
- The University Registrar encourages graduate students to meet with their thesis committees as a group and not one-on-one. This best practice avoids miscommunication.
- Annual meetings should be held regardless of obstacles in research progress.

The Annual Committee Meeting Form should be filled out and signed by all of the committee members in attendance at each meeting (http://immunol.stanford.edu/phd/forms/Annual_Committee_Meeting_Form.docx)

In the fourth and fifth years, students are expected to meet with their committees twice a year. In the fifth year, a faculty member of the Graduate Program Committee should be present at these committee meetings. Dates of committee meetings for all immunology graduate students are reported to the Registrar.

Teaching Assistantships

To gain teaching experience, students are required to serve as teaching assistants in two immunology courses offered at the School of Medicine or in the Department of Biology. TAs are typically completed in Years 2-4. Before fulfilling their teaching assistantships, immunology graduate students must attend a teaching assistantship orientation offered at the beginning of every quarter by the Center for Teaching and Learning. MSTP students may submit one of their medical school TAs as a partial fulfillment of the TA requirement for the PhD in Immunology. After completion of 2 TAs, immunology graduate students may TA for outside courses and earn TA income.

The process for the TA matching system is described below:

1. The Chair of the Immunology Graduate Committee reviews both sets of applications and selects and matches the students to the appropriate courses based on the following criteria:
 - a. Completion of the CTL teaching assistantship orientation, through workshop or on-line course
 - b. Faculty need
 - c. Students' ranked preferences.
2. TAs must be completed in 2nd through 4th years of graduate student. Fifth year will be dedicated mainly to completing PhD research and submitting a required first author publication.
3. Results of the TA match system will be announced in August for students and their PhD advisors, and the course directors.

Teaching Assistantships are available for the following courses:

Molecular and Cellular Immunology (4), Bio 230 and Bio 230a

Computational and Systems Immunology (1), Imm 206a

Advanced Immunology I (2), Imm 201

Advanced Immunology II (2), Imm 202

Advanced Immunology III (2), Imm 203

Immunology in Human Health and Disease, required course for medical

students (6-7), Imm 205

Seminars in Immunology (1), Imm 311

Tumor Immunology (2), Imm 275

Neuroimmunity (1), Imm 286

Immunology Journal Club (3 total, 1 TA per quarter), Imm 305

Introduction to Applied Tools in Computational and Systems Immunology
Imm 206

Essential Methods in Computational and Systems Immunology, Imm 207

Seminars in Computational and Systems Immunology, Imm 310

PhD Thesis Defense

In preparation for the dissertation defense proposal, students are required to submit a Petition to Defend to Dr. Olivia Martinez. Once approved, students may proceed with the dissertation defense process.

Students are required to present their Ph.D. research and submit a written dissertation. The presentation is the equivalent of the required University oral examination, and is taken only after the student has substantially completed his or her research. The petition to defend should be submitted to the Chair of the Graduate Program Committee. The examination is preceded by a public seminar in which the candidate presents the research. The oral examination is conducted by a five-member dissertation reading committee. Before a graduate student can schedule his/her dissertation defense, s/he must have a first-author manuscript that has been submitted, is in press, or has been published. Dissertation defenses are serious scientific presentations of a student's dissertation research, similar to a postdoc interview talk, rather than a talk aimed at a lay audience. Students are expected to identify a chair for their oral defenses. At the end of their PhD oral defense, students should limit acknowledgements to 1 slide.

The McDevitt Prize

The Hugh McDevitt Prize recognizes and awards a graduating Ph.D. candidate in the Immunology Program for excellence in his or her doctoral dissertation research. The McDevitt Prize Award winner is chosen from a group of candidates who have defended and submitted their thesis to the Registrar in a given academic year. The criteria for

selection are that the candidate's doctoral research is judged by the Graduate Program Committee to be of the highest quality in immunological research. The winner is announced at the annual Scientific Conference in Asilomar; he or she will receive a certificate and \$1,000 honorarium.

Leadership Opportunities

Immunology encourages student involvement and feedback to improve the quality of academic and social experiences. The following positions are held by students, and elections are held annually at the last Journal Club meeting before the summer term.

- Student Representative for the Annual Scientific Conference Committee – **Dan Lu**
- Student Director for Seminars – **Dara Strauss-Albee**
- Student Representatives to the Executive Committee- **Matthew Spitzer**
- Student Representatives to the Graduate Program Committee – **Thomas Keller**
- Student Representatives to the Admissions Committee: **TBA**
- First-year Advising Committee: **Sarah Kongpachith, Erika Bongen, Marvin Gee, and Jonathan Wosen**
- Social Chairs: **Marta Andres Torres, Leah Sibener, and Justin Jarrell**

Program Activities/Events

Stanford Immunology Seminar Series: The Stanford Immunology Program Seminar Series is held on Tuesday at 4:15pm. Nationally and internationally recognized speakers present research seminars to the Stanford Immunology community. Graduate students participate in extending invitations to speakers and in hosting speakers.

Science-in-Progress Talks (SIP): The SIP format features research presentations by both senior graduate students and postdoctoral fellows to the immunology community, followed by a Happy Hour. The SIP

Talks will begin in the Autumn quarter 2014 and will continue until the end of Summer quarter 2015.

Graduate Student Journal Club (Imm 305) are held on Tuesdays, 5:30-6:30 pm immediately after the Immunology Seminar Series.

Stanford Immunology Summer Barbeque: The Summer Barbeque is held in late June or early July of each year on the LKSC lawn. It is traditionally organized by First Year students and is attended by graduate students, post-docs, faculty and staff of Stanford Immunology.

Annual Scientific Conference: The Annual Scientific Conference is held on the California coast at the Asilomar Conference Center in Pacific Grove and is attended by students, staff, postdocs and program faculty of Stanford Immunology. Immunology graduate students are required to give one poster and one scientific presentation at Asilomar during their years in the Program.

The Immunology Program Faculty

The research interests of our faculty cover the major areas of modern immunology, including cellular immunology, molecular immunology, clinical immunology, structural immunology, and systems immunology. Research includes studies of the development and function of T- and B-lymphocytes, natural killer cells, regulatory T-cells, dendritic cells and the specific tissues and organs that contribute to host defenses. The program has a strong molecular component, and many of the laboratories have focused on key molecules in the induction and expression of immune responsiveness. These include the molecules encoded by the major histocompatibility complex, T cell receptors, immunoglobulins, costimulatory and accessory molecules, adhesion molecules, (including selectins and integrins), chemokines and chemoattractant receptors, and cytokines and their receptors. Studies in progress include analysis of gene regulation using microarrays and robotic sequencers and studies of the 3-dimensional structure of important immune system molecules by protein crystallography. A number of faculty are focusing on the cellular interactions involving cells

of the immune system during their development, activation, and regulation, from the architecture of the "immunological synapses" to the specific receptors, molecular interactions, signaling cascades, and transcription factors involved. Another major strength of the program is the development and application of new tools and technologies available to immunologists that are well supported by key laboratories and core facilities available to the Immunology Program. These include the CyTOF Mass Cytometer, confocal microscopy for cell imaging, cDNA microarrays of both mouse and human genes for expression profiling, large scale antibody arrays for detection proteins, lipids and carbohydrates, MHC-peptide tetramers for identification of antigen specific T cells, and innovative computational and systems approaches to immunological problems. Important core facilities include the FACS Facility, the Protein and Nucleic Acid Facility, the Cell Imaging Facility, and the Human Immune Monitoring Core for state-of-the-art immune monitoring in clinical and translational studies.

Leveraging Stanford's strength in basic immunology, many *Stanford Immunology* faculty apply basic findings to clinical diseases, including autoimmune diseases such as type I diabetes mellitus, multiple sclerosis, lupus, and rheumatoid arthritis, infectious diseases, allergy, transplant rejection, and cancer. Array methodologies for autoantibody detection in autoimmune patients and functional T-cell profiling in vaccine studies have also been pioneered at Stanford. Finally, *Stanford Immunology* faculty have demonstrated unanticipated roles for immune-derived cells and factors fields ranging from metabolism to neuroscience to aging, thereby opening new areas of investigation.

Immunology PhD Program Faculty are affiliated with the following departments, divisions, and institutes:

Departments:

Biology	Developmental Biology
Biochemistry	Genetics
Bioengineering	Health Research and Policy –
Biophysics	Biostatistics
Chemical and Systems Biology	Infectious Diseases and Geographic
Computer Science	Medicine
	Microbiology and Immunology

Molecular and Cellular Physiology
 Neurology and Neurological Sciences
 Neurosurgery
 Otolaryngology
 Pathology
 Psychiatry and Behavioral Sciences
 Structural Biology
 Surgery
 Urology

Department of Medicine/Divisions:

Blood and Bone Marrow
 Transplantation
 Cardiovascular Medicine
 Endocrinology, Gerontology and
 Metabolism
 Gastroenterology and Hepatology
 Hematology
 Oncology
 Immunology and Rheumatology
 Infectious Diseases

Pulmonary and Critical Care
 Radiology

Department of Pediatrics/Divisions:

Human Gene Therapy
 Immunology and Allergy
 Infectious Diseases
 Neonatology
 Stem Cell and Regenerative Medicine
 Systems Medicine

Institutes:









Stanford Cancer Institute
 Institute of Immunity, Transplantation,
 and Infection
 Stanford Institute for NeuroInnovation
 and Translational Neuroscience
 Institute for Stem Cell Biology and
 Regenerative Medicine








Immunology PhD Faculty Profiles and Contact Information









For more detailed information on each of the following faculty members, please visit their Stanford Community Academic Profile (<http://med.stanford.edu/profiles/>) or go to the faculty directory on the Immunology website (<http://immunol.stanford.edu/faculty/index.html>).








Our Immunology program faculty are UTL (University Tenure Line and on the Academic Council), NTL-R, (Non-Tenure Line, Research and on the Academic Council), or MCL (Medical Clinical Line and non-Academic Council). MCL faculty primarily have clinical responsibilities and may or may not be eligible to act as graduate student advisors. Students seeking to include MCL faculty as members of their theses committees must first obtain approval from the Graduate Program Chair, Dr. Olivia Martinez.









MCTI	CSI	Name	Dept	Email	Research
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MCTI	CSI		Name	Dept	Email	Research
X	X		Alizadeh, Arasha, MD, PhD	Medicine/Oncology	arasha@stanford.edu	Systems Immunology & Oncogenomics of B-cell Lymphomas
	X		Altman, Russ, PhD	Bioengineering	Russ.Altman@stanford.edu	Computational technologies applied to molecular biology problems of medical relevance.
X			Bendall, Sean, PhD	Pathology	bendall@stanford.edu	Human hematopoietic and immune hierarchies in human health and disease
X			Blish, Catherine, MD, PhD	Medicine – Infectious Diseases	cblish@stanford.edu	Immunity to HIV and other viral pathogens; immune regulation during pregnancy
X			Bollyky, Paul, MD, PhD	Medicine – Infectious Diseases	pbollyky@stanford.edu	Matrix Immunology
X	X		Boothroyd, John, PhD	Microbiology & Immunology	jboothr@stanford.edu	How Toxoplasma manipulates the host's immune response and avoids clearance.
X	X		Boyd, Scott, MD, PhD	Pathology, MCL	Sboyd1@stanford.edu	High-throughput characterization of B cells and T cells in immune disorders.
X			Butcher, Eugene, MD	Pathology	ebutcher@stanford.edu	Cellular trafficking in lymphoid development, immune homeostasis, immunity and









MCTI	CSI		Name	Dept	Email	Research
						immunopathogenesis
X	X		Butte, Atul, MD, PhD	Pediatrics/Sytems Medicine; Computer Science; Medicine/Immunology and Rheumatology	abutte@stanford.edu	Convert the world's 300 billion points of data into diagnostics and drugs
X			Butte, Manish, MD, PhD	Pediatrics/Immunology and Allergy	mibutte@stanford.edu	Mechanobiology, atomic force microscopy, T cell activation
X			Chien, Yueh-hsiu, PhD	Microbiology & Immunology	chien@stanford.edu	Antigen recognition and function of lymphocytes in health and disease
X			Chu, Gilbert, MD, PhD	Medicine/Oncology; Biochemistry	chu@stanford.edu	Molecular basis for DNA repair by non-homologous end joining
X			Cleary, Michael, MD	Pathology; Pediatrics	mcleary@stanford.edu	Role of oncoproteins in cancer and development; molecular and cellular biology of hematologic malignancies
X			Contag, Chris, PhD	Pediatrics/Neonatology Microbiology & Immunology Radiology	Ccontag@stanford.edu	Refining immunotherapy through imaging and combination biotherapies
X			Crabtree, Gerald, PhD	Pathology (and HHMI) and Developmental Biology	crabtree@stanford.edu	The interface of signaling and chromatin in lymphocyte









MCTI	CSI		Name	Dept	Email	Research
						development and function
X	X		Davis, Mark M, PhD	Microbiology & Immunology (and HHMI)	mmdavis@stanford.edu	Lymphocyte recognition and human immunology
	X		Davis, Ronald, PhD	Biochemistry	rdavis@stanford.edu	Large-scale studies of relationship between immune repertoire, HLA & diseases.
X			Dhabhar, Firdaus, PhD	Psychiatry and Behavioral Sciences – Psychosocial	dhabhar@gmail.com	Protective versus harmful effects of stress on immune function
X			Engleman, Edgar, MD	Pathology; Medicine/ Immunology and Rheumatology	Edgareng@stanford.edu	Immune mechanisms in pathogenesis and treatment of cancer and autoimmune disease
X			Felsher, Dean, MD, PhD	Medicine/Oncology; Pathology	Dfelsher@stanford.edu	Immune regulation of tumorigenesis
	X		Fire, Andrew, PhD	Genetics	afire@stanford.edu	Diversity of antibody and small RNA responses in infection and genome defense
X			Galli, Stephen, MD	Pathology; Microbiology & Immunology	Sgalli@stanford.edu	The development of mast cells and basophils, and their roles in health & disease
X			Garcia, K. Chris, PhD	Molecular and Cellular Physiology; Structural	Kcgarcia@stanford.edu	Receptor signaling and structure








MCTI	CSI		Name	Dept	Email	Research
				Biology		
X			Goronzy, Jorg J, MD	Medicine/ Immunology and Rheumatol- ogy	jgoronzy@stanford.edu	T cell homeostasis and function with age
X			Habtezion, Aida, MD	Medicine/ Gastroenterology and Hepatology	Aida.habtezion@stanford.edu	Leukocyte recruitment and immune responses in diseases affecting digestive organs
X			Han, May, MD	Neurology and Neurological Sciences	mayhan@stanford.edu	Multiple Sclerosis
X			Herzenberg Leonore (Lee), D.Sci.	Genetics	leeherz@stanford.edu	B-cell development, Ig rearrangement and repertoire analysis, T regulation of antibody responses, FACs
X			Idoyaga, Juliana, PhD	Microbiology & Immunology	jidoyaga@stanford.edu	“Commanding the commanders: steering immune responses by antigen targeting to dendritic cells in vivo”
X			Jardetzky, Theodore, PhD	Structural Biology, Biophysics	tjardetz@stanford.edu	Structures and mechanisms of macromolecular complexes important in viral pathogenesis, allergic hypersensitivities
X			Jones, Patricia, PhD	Biology	pajones@stanford.edu	Mechanisms regulating immune responses, especially innate immunity






MCTI	CSI		Name	Dept	Email	Research
	X		Khatri, Purvesh, PhD	Medicine - Biomedical Informatics Research	pkhatri@stanford.edu	Cancer Biology, Cardiovascular-Pulmonary Sciences, Global Health, Immunology, Informatics & Data-Driven Medicine, Molecular Basis of Medicine
X			Kim, Peter, PhD	Biochemistry	kimpeter@stanford.edu	Viral Membrane fusion and its inhibition
	X		Kirkegaard, Karla, PhD	Microbiology & Immunology	karlak@stanford.edu	Using SHAPE, ChIRP, other deep sequencing approaches to fathom pathogen-host interactions.
X			Krams, Sheri, PhD	Surgery/Multi-organ Transplantation	smkrams@stanford.edu	Transplant Immunology, MicroRNAs, NK cell activation receptors
X			Kuo, Calvin, MD, PhD	Medicine/Hematology	cjkuo@stanford.edu	Cancer organoids, stem cells, vascular biology
X			Levy, Ron, MD	Medicine/Oncology	levy@stanford.edu	The immune system and cancer
X			Levy, Shoshana, PhD	Medicine/Oncology	slevy@stanford.edu	Role of the tetraspanin CD81 in the immune system and disease pathogenesis
X			Lewis, David B., MD	Pediatrics/Immunology and Allergy	dbLewis@stanford.edu	Identification and characterization of newly recent

MCTI	CSI		Name	Dept	Email	Research
						thymic emigrants or RTEs), and novel adjuvants for respiratory viruses
X			Lewis, Richard, PhD	Molecular and Cellular Physiology	Rslewis@stanford.edu	Mechanisms and functions of store-operated calcium channels
X	X		Maecker, Holden, PhD	Microbiology & Immunology	maecker@stanford.edu	Immune profiling: T cell response signatures to chronic pathogens and cancer
X			Majeti, Ravi, MD, PhD	Medicine/ Hematology Institute for Stem Cell Biology and Regenerative Medicine	rmajeti@stanford.edu	Development of therapeutic antibodies directed against CD47 and/or additional protein markers present in much larger amounts on the external surface of the LSC compared to the normal blood forming stem cells.
X			Mallick, Parag, PhD	Radiology	smajidi@stanford.edu	Insight into the relationship between molecular phenomena and organismic phenomena.
X			Martinez, Olivia, PhD	Surgery/Multi-organ Transplantation	omm@stanford.edu	Transplant immunology; immune regulation in host-pathogen interactions and alloactivation
X			Mellins, Elizabeth, MD	Pediatrics – Human Gene Therapy	Mellins@stanford.edu	Regulation of immunity by MHC class II in health/disease

MCTI	CSI		Name	Dept	Email	Research
X			Meyer, Everett, MD, PhD	Med/Bone Marrow Transplantation, MCL	evmeyer@stanford.edu	Bone marrow transplantation and immunotherapeutics
X			Michie, Sara A., MD	Pathology	smichie@stanford.edu	Lymphocyte migration in autoimmune diseases
X			Mignot, Emmanuel, MD	Psychiatry and Behavioral Sciences - Sleep Center	mignot@stanford.edu	Autoimmunity of the brain and narcolepsy
X			Miklos, David, MD, PhD	Medicine/ Blood and Marrow Transplantation, MCL	dmiklos@stanford.edu	Hematopoietic cell transplantation and alloimmunity
X			Monack, Denise, PhD	Microbiology & Immunology	dmonack@stanford.edu	Co-evolution of immune systems and bacterial pathogen virulence strategies
X			Nadeau, Kari, MD, PhD	Pediatrics – Immunology and Allergy, MCL	knadeau@stanford.edu	Mechanisms of immune dysfunction in primary immune disease (PID), allergy, and asthma.
X			Nayak, Jayankar, MD, PhD	Otolaryngology	inayak@ohns.stanford.edu	Head and neck cancer
X			Negrin, Robert, MD	Medicine/ Blood & Marrow Transplantation	negrs@stanford.edu	Hematopoietic cell transplantation, immune regulation and cellular immunotherapy

MCTI	CSI		Name	Dept	Email	Research
X			Nicolls, Mark, MD	Medicine/ Pulmonary and Critical Care Medicine	mnicolis@stanford.edu	Lung immunology in pulmonary hypertension and transplantation.
X	X		Nolan, Garry, PhD	Microbiology & Immunology	gnolan@stanford.edu	Single cell proteomics and genomics of cancer, stem cells, & autoimmunity
X			Palmer, Theo, PhD	Neurosurgery	tpalmer@stanford.edu	Neural stem cells and inflammation
X			Parham, Peter, PhD	Structural Biology; Microbiology & Immunology	peropa@stanford.edu	Evolution of human immune system diversity
	X		Quake, Stephen, PhD	Bioengineering	quake@stanford.edu	Computational studies of integrated microfluidics and large scale biological automation in immunology
X			Robinson, William, MD, PhD	Medicine/ Immunology and Rheumatology	wrobins@stanford.edu	Translational research in autoimmunity, with a focus on rheumatoid arthritis
X			Roncarolo, Maria Grazia, PhD	Pediatrics- Translational & Regenerative Medicine	Mg1@stanford.edu	Regulatory T cells and tolerance mechanisms in transplantation, allergy and other conditions
X			Schneider, David,	Microbiology & Immunology	Dschneider@stanford.edu	Balancing tolerance and

MCTI	CSI		Name	Dept	Email	Research
			PhD			resistance of infections
X			Shizuru, Judith, MD, PhD	Medicine/Blood and Marrow Transplantation	ishizuru@stanford.edu	Cellular and molecular basis of resistance to transplanted to engraftment of transplanted allogeneic bone marrow (BM) cells
	X		Snyder, Michael, PhD	Genetics	mpsynder@stanford.edu	Large scale functional genomics and proteomics
X			Sobel, Raymond, MD	Pathology	Raysobel@stanford.edu	Immunopathogenetic mechanisms in CNS diseases
X			Steinman, Lawrence, MD	Neurology and Neurological Sciences; Pediatrics	Steinman@stanford.edu	Genetic basis of autoimmune neural disease
X			Strober, Samuel, MD	Medicine/ Immunology and Rheumatology	sstrober@stanford.edu	Immune tolerance in transplantation and autoimmunity
X			Sunwoo, John, MD, PhD	Otolaryngology	johnsunwoo@stanford.edu	Understanding how NK cells, in the broader context of the host immune system, protect against developing and metastasizing tumor cells
	X		Tibshirani, Robert, PhD	Health Research and Policy – Biostatistics	Robert.tibshirani@stanford.edu	Applied statistics and biostatistics in immunological research

MCTI	CSI		Name	Dept	Email	Research
X	X		Utz, Paul (PJ), MD	Medicine/ Immunology and Rheumatology	Pputz@stanford.edu	Protein and peptide arrays, biomarkers, autoantibodies, and autoimmunity
X			Weissman, Irving, MD	Institute of Stem Cell Biology and Regenerative Medicine, Developmental Biology; Biology; Pathology	Irv@stanford.edu	Stem cell biology and regenerative medicine
X			Weyand, Cornelia, MD, PhD	Medicine/ Immunology and Rheumatology	cweyand@stanford.edu	Telomere biology and genomic stress in autoimmunity and inflammation
X			Wu, Joseph, MD, PhD	Medicine/Radiology	joewu@stanford.edu	Stem cell biology -- ESC, iPSC, immunology
X			Wu, Joy, MD, PhD	Medicine – Endocrinology, Gerontology and Metabolism	jyw1@stanford.edu	Mechanisms guiding the differentiation of mesenchymal stem cells, and how mesenchymal lineages support hematopoiesis in the bone marrow
X			Wyss-Coray, Tony, PhD	Neurology and Neurological Sciences	twc@stanford.edu	Neuro-immune interactions in aging and neurodegeneration

Graduate Student Life

Personal Support Services

Dr. Olivia Martinez is always available to discuss personal concerns of students, and to recommend further conversations with the Advising Deans and/or one of the organizations or services below.

Graduate Life Office (GLO)

<http://glo.stanford.edu/>; (650) 736-7078 for appointments; (650) 723-8222 Ext. 25085 for 24/7 crisis assistance

The Graduate Life Office (GLO), a unit in the Student Affairs division, is here for you as a source of comprehensive and impartial guidance and information about all aspects of life as a graduate student. We can help you with many personal, academic, and financial issues, or direct you to someone who can.

Counseling and Psychological Services (CAPS)

CAPS, located on the second floor of Vaden Health Center, offers, without charge, evaluations and brief counseling to any registered Stanford student who has paid the health fee, regardless of what insurance they have. Short-term counseling is defined as evaluation and treatment up to 10 visits a year. For couples counseling, only one person needs to be a registered student. Only students requesting or requiring longer, ongoing, psychotherapy incur fees. An initial assessment to determine whether medication is appropriate is free of charge; medication management is charged on a co-pay or fee for service basis.

Assistance is available for students experiencing personal problems or difficult situations while at Stanford, including stress, anxiety, depression, relationship distress, low self-esteem, procrastination, sexual concerns, sexual assault/harassment, or family problems. Emergency response is available 24/7. Workshops and groups to support student adjustment at Stanford and to help with personal and social difficulties that interfere with academic and social functioning are also offered. African American,

Asian American, Chicano/Latino, and gay counselors are available upon request. Services are confidential. The School of Medicine is not informed about students using CAPS without the student's explicit permission.

If longer-term treatment is indicated it may be available through CAPS under certain circumstances or through community providers. The School of Medicine Financial Aid Office can assist students by helping to arrange for a special loan to meet the financial need for such treatment.

Students can be seen on an urgent basis the same day. A clinician is on-call 24 hours a day for emergencies and can be reached by calling (650) 723-3785; or, for sexual harassment and sexual assault counseling, (650) 725-9955.

Wellness and Health Promotion Services (HPS)

HPS helps students to make informed, healthy decisions about their lifestyle and behavior through education and support. Areas of expertise include alcohol, tobacco, and other drug use; nutrition, weight management, body image and eating disorders, sexual assault and harassment; sexual health, relationships, intimacy, and gender issues.

Services include individual preventive counseling and resource referral, speakers, programs, events and workshops at student residences, community centers, student organizations, and for new students. HPS also trains student volunteers and sponsors a variety of health outreach projects and events. Most services are free. Please call (650) 723-0821 for further information.

University Ombudsperson

David Rasch, Stanford University Ombuds Mariposa House, 585 Capistrano Way, Room 210 (650) 723-3682 rasch@stanford.edu
<http://www.stanford.edu/dept/ombuds/>

The Ombudsperson's task is to protect the interests and rights of members of the Stanford community from injustices or abuses of discretion, from gross inefficiency, from unnecessary delay and complication in the administration of University rules and regulations, and from inconsistency, unfairness, unresponsiveness, and prejudice in the individual's experience with University activities. The Ombudsperson's office exists to receive, examine, and channel the complaints and grievances of members of the Stanford community, and to secure expeditious and impartial redress.¶

Any troublesome matter in the University community may be discussed in confidence with the University Ombuds. Services of the office are available to students, staff, and faculty. Although possessing no decision-making authority, the Ombuds has wide powers of inquiry. The Ombuds can refer matters to the proper person or office expeditiously and also provides conflict resolution services.

The Bridge Peer Counseling Center

581 Capistrano Way, (650) 723-3392 (24 hours a day),
<http://www.stanford.edu/group/bridge/>

The Bridge is a group of trained student counselors providing free, confidential, 24-hour peer counseling services to Stanford and the neighboring community. As peer counselors, they are there to listen, to explore feelings or just to talk. Their goal is to help you to develop your own solutions to problems or uncertainties that you may be dealing with. All services are free and confidential.

During the academic year, The Bridge takes calls 24 hours a day by phone, and is open for drop-in visitors from 9 a.m. to 12 a.m. midnight. The schedule may vary when classes are not in session.

Disabilities: Office of Accessible Education (OAE)

The Office of Accessible Education (OAE) is the campus office designated to work with Stanford students with disabilities, at both the undergraduate and graduate levels (including the professional schools).

The OAE provides a wide array of support services, accommodations, and programs to remove barriers to full participation in the life of the university.

Working collaboratively, the student and OAE staff members develop and implement an accommodation plan tailored to the student's disability-related needs. Accommodations include, but are not limited to:

- Note taking
- Oral or sign language interpretation
- Steno captioning
- Examination accommodations Modifications in course load Braille embossing
- Electronic text (e-text) Housing accommodations
- For more information, visit our website: <http://studentaffairs.stanford.edu/oea>.
- Students with disabilities for which they may need accommodations should call and register with the OAE as soon as possible by phoning the main office at (650) 723-1066.
- Each student bears the responsibility of initiating a disability-related request for accommodations with the OAE prior to the time such an accommodation is needed. In addition, it is the responsibility of the student to: as early as possible register with the OAE and submit documentation of disability as a prerequisite to receiving accommodation, and to notify the OAE immediately if an accommodation is not being provided correctly or in a timely fashion.

DISGO - The OAE operates a free Disability Golf Cart service, DisGo, for all members of the Stanford community. It is open to anyone with a disability or medical condition that makes it difficult to travel around campus. For more information on hours of operation and how to arrange for on-campus rides, please visit our website: <http://studentaffairs.stanford.edu/oea/disgo>

Schwab Learning Center - Through a generous endowment from Charles and Helen Schwab, the Schwab Learning Center (SLC) was established

to provide Stanford students with Learning Disabilities and Attention Deficit Hyperactivity Disorder (ADHD) a supportive academic environment through enhanced programs and service. SLC programs and services are offered on both the main campus and at the Stanford School of Medicine. Among the services offered are:

- Consultation and referral for students with suspected learning differences
- One-on-one learning strategies
- Academic tutoring

Assistive Technology - The OAE provides trainings and screenings on a variety of assistive computer technologies and software applications. Screenings create an opportunity for students and the OAE staff to review and discuss various assistive technologies and software applications that may prove useful. Services include:

- One-on-one training for assistive technology and adaptive software
- Software for speech recognition, text-to-speech applications, screen readers and screen magnification. Alternative input devices such as specialized keyboards and mouse substitutes
- Whiteboards capture devices to enhance studying
- Ergonomic computer workstations
- Refreshable Braille display
- CCTV video magnifiers
- The Alternate Format Production Facility has the capacity to convert print text to electronic text (e-text), large print, or Braille using high-speed scanners, specialized software applications, and Braille embossers.

For more information, visit our website:

<http://studentaffairs.stanford.edu/oea/at>

Voice: (650) 723-1066

FAX: (650) 723-5301

Email: oea-getinfo@lists.stanford.edu

URL: <http://studentaffairs.stanford.edu/oea>

Address: 563 Salvatierra Walk, Stanford, CA 94305

Sexual Assault and Relationship Abuse Prevention and Support

<http://www.stanford.edu/group/svab/>; (650) 736-7088 for non-urgent calls; (650) 725-9955 to report an incident.

“Do you think you've been [sexually assaulted](#), [harassed](#) or [stalked](#)? Do you think you may be in an [abusive or controlling relationship](#)? Would you like to [help a friend](#)? Just want to talk to somebody? Stanford has resources that can help. Please call the [YWCA Sexual Assault Center](#) at Stanford's 24-hour hotline for confidential counseling, support, and information.”

Health Care

While at Stanford, your health care resources include the following:

- Access to Vaden Health Center – All students can access Vaden Health Center services during their academic careers at Stanford. As a member of the Stanford campus community all services are geared to your well-being. Vaden Health Center services include primary care, counseling and psychological care, radiology, lab, pharmacy, physical therapy and nutrition.
- Insurance – You will need health insurance when accessing health care outside of Vaden. Examples of services that require health insurance are referrals to specialists, inpatient care, emergency care, and services while away from campus (such as when traveling within the US or internationally).

Cardinal Care is a comprehensive health plan specifically designed for Stanford students. Coverage is worldwide. It includes medical, surgical, mental health care, hospitalization, emergency care and pharmaceuticals. Cardinal Care is administered and insured by Health Net of California (for medical benefits) and MHN (for mental health benefits).

<http://www.stanford.edu/group/vaden/insurance/cardinalcare.html>.

The Cardinal Care health plan does not cover dental or vision.

You can learn more about Stanford Health Care at:

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

Student Organizations

Stanford Biosciences Association (SBSA) is an organization created by graduate students enrolled in the Biosciences programs. SBSA organizes seminars, career fairs and other meetings that address areas of particular interest to graduate students. This student-led organization has sponsored presentations on employment opportunities and trends in academia as well as in business. SBSA hosts an array of social gatherings, from ski trips to barbecues – all designed to bring graduate students together in relaxed and informal surroundings.

Biomedical Association in the Interest of Minority Students (BioAIMS) is an organization that aims to provide a welcoming environment and a platform from which graduate students of multiple backgrounds and identities can share their unique perspectives and experiences. Furthermore, they work to promote student diversity at Stanford with particular emphasis on the recruitment, retention and well-being of underrepresented minorities (URMs) in the sciences. BioAIMS has organized retreats for team-building and networking (Biosciences and Genetics Diversity Retreat), and held events that allowed students to explore job opportunities in the public and private sectors with regard to policy (Diversifying Academia and Beyond Career Development Trip).

Student Housing

Graduate students live in various apartment communities:

- Escondido Village – Apartments on eastside of campus - largest graduate community on campus
- Escondido South – Townhouses
- Rains Houses – Apartments
- Munger Graduate Residences – Apartments – priority given to Law School students

- Off-campus subsidized – Apartment complexes in Menlo Park, Mountain View and Palo Alto.

Couples housing and housing for students with children is also available. Housing applications for Autumn Quarter are due in the spring prior. For information on student housing, please visit the Student Housing website: <http://www.stanford.edu/dept/rde/cgi-bin/drupal/housing/>.

Housing rents and fees will be deducted directly from a fellowship stipend at the beginning of every quarter. If you are paid bi-weekly and wish to deduct a monthly amount directly from your check, please contact the Student Services Center (Tressider) to set up this arrangement.

Career Advice

The School of Medicine Career Center provides critical support for the exploration of career options, development of professional skill sets, and connections to opportunities. For more information, please visit their website at: <http://med.stanford.edu/careercenter/>.

The Career Development Center, or CDC, is a division of Student Affairs supporting the career development of undergraduates and graduate students. Limited services are also available to student spouses and domestic partners. For more information, please visit their website at: <http://studentaffairs.stanford.edu/cdc>.