

GRADUATE STUDENT GUIDE

BIOPHYSICS PROGRAM & DEPARTMENT OF STRUCTURAL BIOLOGY

2011-2012

Stanford University

Stanford University admits students of either sex and any race, color, religion, sexual orientation, or national and ethnic origin to all the rights, privileges, programs, and activities generally accorded or made available to students at the university. It does not discriminate against students on the basis of sex, race, color, handicap, religion, sexual orientation or national and ethnic origin in the administration of its educational policies, admissions policies, scholarship and loan programs, and athletic and other University-administered programs.

(While every effort is made to ensure the accuracy of the information available at the time copy is prepared for this guide, the Program does not guarantee its accuracy, and reserves the right to make changes at any time without notice.)

INTRODUCTION

Welcome to the Biophysics Program at Stanford. As you know by now, the Biophysics Program is an IDP (Interdisciplinary Program) that is not centralized in a single physical location. Thus, you are one of 30+ Biophysics graduate students who are spread over numerous research laboratories on both sides of Campus Drive.

GOALS

This guide is intended to provide you with critical information about the Biophysics Program and about the requirements for the Ph.D. degree. **PLEASE READ IT CAREFULLY AND ABSORB IT THOROUGHLY.** If you have any questions, please consult the Program Administrator, Kathleen Guan. She will refer you to the Program Director if necessary.

PROGRAM IN BIOPHYSICS COMMITTEE AND STAFF

Executive Committee on Biophysics

Pande, Vijay	Chemistry	Director
William Weis	Structural Biology	Executive committee
Doniach, Sebastian	Applied Physics	Executive Committee
KC Huang	Bioengineering	Executive Committee

Staff

Vijay Pande, Director

Clark Center, Room S295
Stanford, CA 94305-5080
Phone: (650) 723--3660
Fax: (650) 725-0259
E-Mail: pande@stanford.edu

THE PROGRAM - PHYSICAL LOCATION AND COMPOSITION**Offices**

The Biophysics Program office is located in the Fairchild Building, Room D118. This office is run by Kathleen Guan, Administrative Assistant to the Director. Kathleen is the person to see for all administrative questions and problems.

Enrollment

Approximately 30+ graduate students are enrolled in the Program at any given time (comprised of prospective Ph.D students and prospective M.D./Ph.D students).

Current Trainee Directory

Since our interdisciplinary approach leads to a scattering of students across campus, meeting your fellow students outside of Biophysics 250 may be difficult. To help, we have included a directory of currently-enrolled students and their office/lab addresses and telephone numbers beginning on the next page.

***First year students have mailboxes in the hall way of the Structural Biology Department (Fairchild Bldg. D-100) until they join a permanent research group.**

NOTE: Within the University, all telephone numbers begin with the prefix "723", "725", "497" or "498" may be dialed using only the "3", "5", "7" or "8" and the extension number shown in the Directory.

TRAINEE DIRECTORY

<u>Name</u> <u>E-Mail</u>	<u>Phone #</u>	<u>Lab</u> <u>ID mail</u>	<u>Degree</u>	<u>Advisor</u>	<u>Started</u>
Bacallado, Sergio sergiob@stanford.edu		Chemistry 5080	Ph.D.	Pande	2007
Barker, Jocelyn jbarker2@stanford.edu		Radiology	Ph.D.	Rao	2010
Beauchamp, Kyle kyleb@stanford.edu		Biochem/Chem 5307	Ph.D.	Das/Pande	2008
Beomkyu, Kim bki280@stanford.edu		Struct. Bio 5126	Ph.D.	Jardetzky	2007
Coey, Aaron coey@stanford.edu		rotation	Ph.D.		2011
Colavin, Alexandre acolavin@stanford.edu		rotation	Ph.D.		2011

Colbert, Karen kcolbert@stanford.edu	Struct. Bio 5126	Ph.D.	Weis	2007
Dalton, Kevin kmdalton@stanford.edu	Chem/Bio	Ph.D.	Pande/Frydman	2010
Deng, Patricia thdeng@stanford.edu	rotation	Ph.D.		2011
Eagen, Kyle keagen@stanford.edu	Struct. Bio 5126	MD/PhD	Kornberg	2010
Fernandes, Louis louisf@stanford.edu	Bioengineering 5444	Ph.D	Bryant	2007
Fung, Jian jyfung@stanford.edu	Biochem	Ph.D.	G. Chu	2009
Frieda, Kirsten frieda@stanford.edu	Biology 5020	Ph.D	Block	2006
Greenblatt, Ethan eigreen@stanford.edu	Chemistry 5020	Ph.D.	Kopito	2005
Harris, Leigh lharris@stanford.edu	Biochemistry	Ph.D.	Theriot	2010
Kaplan, Luke lkaplan2@stanford.edu	rotation	Ph.D.		2011
Karr, Jonathan jkarr@stanford.edu	Bioengineering 5444	Ph.D	Covert	2006
Kearnes, Steven kearnes@stanford.edu	rotation	Ph.D.		2010Sum
Kelly, Marcus mrkelly@stanford.edu	rotation	Ph.D.		2010Sum
Koslover, Daniel koslover@stanford.edu	Biology 5020	Ph.D.	Block	2007
Koslover, Elena lenafabr@stanford.edu	Chem Eng 5025	Ph.D.	Spakowitz	2007
Kruse, Andrew akruse@stanford.edu	MCP	Ph.D.	Kobilka	2009
Li, Ye (Henry) ywli@stanford.edu	Statistics	Ph.D.	W. Wong	2010
Nguyen, Van vknguyen@stanford.edu	Biology	Ph.D.	S. Block	2009
Parente, Angelica aparente@Stanford.edu	Chemitry	Ph.D.	Pande/Bryant	2010
Price, Andrew ajp1989@stanford.edu	rotation	Ph.D.		2011
Quinn, Jillynne JNQuinn@stanford.edu	Biology	Ph.D.	S. Long	2010

Ramallo Pardo, Diego ramallodf@stanford.edu	Chem Eng 5025	Ph.D	Dunn	2008
Savinov, Andrew asavinov@stanford.edu	rotation	Ph.D.		2011
Sinha, Sandhya sasinha@stanford.edu	Biochemistry 5444	Ph.D	Huang	2008
Sung, Kijung kjsung@drizzle.stanford.edu	Neuroscience 5489	Ph.D.	Mobley	2005
Tan, Jiongyi joogle.t@gmail.com	rotation	Ph.D.		2011
Tropini, Carolina Tropini@stanford.edu	Biochemistry 5444	Ph.D	Huang	2008
Weinstein, Joshua jaweinst@stanford.edu	Engineering 5432	Ph.D	Quake	2007
Winans, Amy awinans@stanford.edu	CSB 5439	Ph.D	Meyer	2008
Yablonovitch, Arielle ayablon@stanford.edu	Genetics	Ph.D.	B. Li	2010

UNIVERSITY REGISTRATION

Before registering for courses, all new students should consult with the Program Director/Advisor (Prof. Vijay Pande for Biophysics; Prof. Ted Jardezyk for Structural Biology) in order to plan a program for the first quarter and subsequent quarters until a permanent Faculty Advisor is decided upon. After one quarter of enrollment, you may petition for transfer of credits for any courses that you have completed elsewhere that may substitute for courses in the Program. Please pick up "Application for Graduate Residency Credit" at the Student Services Center (Tresidder 2nd floor). No more than 45 units can be transferred.

Registration at Stanford University is an internet e-mail-oriented system. **Stanford University assumes that all active students will return the following quarter and an "Intent to Enroll" form is now only required for financial aid purpose for the Autumn and Winter quarters.** Details are also explained in the University Time Schedule. Copies of the University Time Schedule and the Stanford Bulletin (course guide) are available several weeks before the end of the preceding quarter at the Information Window of the Registrar's Office.

Fees

You will receive a University bill in the mail after registering through Axess. Tuition credits for any support you have been awarded are entered on this bill. Please refer to the brochure "The University Bill" you were mailed out this Summer for practical details on how to read and pay your bill. **Be proactive about your bill balance as you would be subject to all applicable late fees. Holds could be put on your account preventing you from registering or using your library card. As you soon as you notice a hold or due amount, please contact the Student Financial Services at 3-2181.**

If for some reason your University bill does not show credit for your student aid (stipend and tuition) by the deadline, check with the Program office as to the status of your support (most likely it will be a problem with your on-line record not interfacing with the Student Financial Services' billing system in time, but you should check, just in case). ASSU and housing fees are not covered by student aid funds and will be automatically deducted from your quarterly stipend checks. If you do not wish to have these fees automatically deducted, it is your responsibility to make these arrangements with the Student Financial Services. Remember, no two people have identical fees, so there is no universal template to follow. **Timely registration will be required each quarter to qualify for health insurance subsidy for yourself and dependents.**

Program Required Research and Section Numbers

As a first-year Biophysics student, you will be paid by the program (unless you have obtained a fellowship) and should **register for 10 units each quarter**, as ALL the Biophysics students should register for 10 units (the University system has automatically set you up as a full-time student, so please be sure to make this adjustment via AXESS) the University's on-line system for student access to register, add/drop courses, apply for housing, update address, review grades and degree requirement status, request transcripts, etc. before, so you don't receive a bill for outstanding tuition. You must enroll in, and attend, the Biophysics 250 Seminar for Fall quarter. Beginning Fall quarter, you need to enroll in research course Biophysics 300 (Prof. Vijay Pande' section during your rotation in your first year). As soon as you have selected a "permanent" faculty advisor, you should enroll in Biophysics 300 (your adviser's section), or at any time you change your faculty advisor, please update your faculty section appropriately. If your advisor does not appear on the course list in Axess, you should call Kathleen at 3-7576. Please send Kathleen an email regarding which groups you are rotating in your first year and when you settle in a group.

REQUIRED REGISTRATION

Students being supported on the Program's NIH Training Grant **MUST** be enrolled for **10 units** until they qualify for TGR/TMR (Terminal Graduate Registration /Terminal Medical Registration), for each quarter in which a stipend is paid. **Students enrolling for 8-10 units (less than the full-time tuition rate) must make certain that their tuition assessment has been adjusted to reflect this status. To check status or to make this adjustment, use the REGISTRATION option on AXESS. IT IS VERY IMPORTANT THAT THIS BE DONE, OTHERWISE, YOUR TUITION WILL BE SET BY DEFAULT TO THE FULL TUITION RATE AND YOU WILL RECEIVE A BILL FOR THE OUTSTANDING TUITION.**

Terminal Graduate Registration (TGR) and Terminal Medical Registration (TMR)

TGR/TMR entitles students to all of the usual student benefits. Students in status may register to take courses but must pay the unit tuition rate. Doctoral students are eligible for TGR status when they have been admitted to candidacy, submitted the Doctoral Dissertation Reading Committee form, completed all required coursework and degree requirements other than the University oral exam and dissertation, accrued **135 academic units**. Please see Kathleen to obtain this form.

Students should be aware of the first quarter in which they are eligible to become TGR/TM; it is your responsibility to obtain and complete a request for TGR Status form. **Be sure to file this request before registration day of the first quarter of intended TGR status**, at the end of your 4th year. **TGR students can register TGR directly via AXESS. You need to have already taken 135 units to qualify for TGR status.**

Each quarter, a student in TGR/TMR status must enroll in the TGR course 802 in the degree department (Biophysics) for zero units with the appropriate adviser section number. Not enrolling in this course would have consequences on your library and housing privileges. An "N" grade signifies satisfactory progress in a continuing course, and must be received each quarter to maintain registration privileges. An "N-" grade indicates unsatisfactory progress. The first "N-" grade constitutes a warning. The advisor, Program Chair, and student should discuss the deficiencies and the steps necessary to correct them. A second consecutive "N-" grade will result in a hold placed by the Dean of Graduate Studies on future registration. The department is then obligated to review in writing the student's academic status. Future registration will only be permitted when a plan for completion of degree requirements has been reviewed and approved by the department and the Dean of Graduate Studies (Building 1).

WHERE IS MY ACADEMIC HOME IN THE PROGRAM

Advisor

While your first year academic advisor is Prof. Vijay Pande, and Prof. Ted Jardetzky for SBIO, ultimately, your academic home as a Biophysics Program student will be the laboratory of the faculty advisor with whom you will be pursuing your thesis related research. During the first year, students are encouraged to work in two labs (two rotations), or three if needed, in order to make an informed choice for their thesis research. Based on these rotations, you will select the lab in which you will do your thesis work. The rotation period is a critical part of graduate training, serving to expose every student to a range of possible thesis topics. The choice of an advisor should be done in consultation with the Director; any change of advisor must be approved by the Director

The process of choosing an area of research suitable for a Ph.D. in Biophysics and of finding a suitable academic environment in which to pursue this research requires careful thought. Do not feel rushed to accomplish these goals. Some of you may already have very clear ideas about what you propose to work on and under whose guidance. Others of you may be more uncertain about this. The best sources of information are your colleagues and the faculty themselves. Do not hesitate to make appointments with any of the faculty whose research activities you would like to know more about. They will all be delighted to talk with you and many may already have students in the Program.

In the following pages you will find the names, office and phone numbers of faculty in the Program.

Deadlines

To be sure that the choice of your thesis lab is made with the benefit of at least two rotations, no formal commitment to enter a lab can be made before April 1 of the first year. During this time please feel free to consult the Director for any help and advice you may require.

As soon as you have identified a research lab where you will be located, please notify the Program office (email Kathleen your lab location and its mail code at kguan@stanford.edu). Until such time, please supply the Program office with your home address, telephone number and e-mail address.

Departmental Relationships

The degree to which a student's day-to-day needs are met in the particular Department in which your research advisor has his/her primary academic appointment varies with the student and the department. In general, all Departments provide mailboxes or some other mechanism for delivery of your mail (during your first year of rotation, we'll arrange a mailbox for you in Fairchild Building). However, you should remember that while your fellow lab members and other students in the Department in which you do your research may well become your most immediate and significant peer group, that Department has limited responsibility for any of the administrative details that must constantly be transacted to retain your registration, ensure that you are paid your stipend, etc. If you have administrative problems, please email Kathleen.

Faculty Directory

Russ Altman

Associate Professor of Medicine (Medical Informatics)

russ.altman@stanford.edu

5-3394

Mail Code: 5479

MSOB X-215

<http://smi-web.stanford.edu/people/altman/>

Annelise Barron

Associate Professor of Bioengineering

aebarron@stanford.edu

1-1151

Mail Code: 5444

Clark Center W300B

Steven Block

Professor of Applied Physics and of Biological Sciences

sblock@stanford.edu

4-4046

Mail Code: 5020

Herrin Lab 029

<http://www.stanford.edu/group/blocklab/>

Steven Boxer

Professor of Chemistry

sboxer@stanford.edu

3-4482, 3-4817 Fax

Mail Code: 5080

Keck 325

<http://www.stanford.edu/group/boxer/>

Axel Brunger

Professor of Mol. and Cellular Physiology, Neurology and Neurological Sciences, Synchrotron Radiation Lab.

axel.brunger@stanford.edu

650-736-1031, 650-745-1463 Fax

Mail Code: 5432

Clark Center E300

<http://atb.slac.stanford.edu/>

Zev Bryant

Assistant Professor of Bioengineering, and by courtesy, of Struct. Bio

zevry@stanford.edu

650-724-3090

Mail Code: 5444

Clark Center E302

Manish Butte

Assistant Professor of Pediatrics

mjbutte@stanford.edu

650-206-2990, 650-721-1324

300 Pasteur Dr.

Grant Building, Room H307A

Lynette Cegelski

Assistant Professor of Chemistry

cegelski@stanford.edu

650-725-3527

Keck Building, Room 351

Gilbert Chu

Professor of Medicine (Oncology) and Biochemistry

chu@cmgm.stanford.edu

5-6442, 5-1420 Fax

Mail Code: 5151

CCSR 1145b

<http://cmgm.stanford.edu/~chu/index.html>

Jennifer Cochran

Assistant Professor of Bioengineering

4-7808, 5-2952 Fax

Clark Center W250

Bianxiao Cui

Assistant Professor of Chemistry

650-725-9573

bcui@stanford.edu

Keck Building, Room 313

Rhiju Das

Assistant professor of Biochemistry

Rhiju@stanford.edu

Mail Code: 5307

Mark Davis

Professor of Microbiology and Immunology

mdavis@cmgm.stanford.edu

3-7962, 5-4755 Fax

Mail Code: 5124

Fairchild D241

<http://cmgm.stanford.edu/micro/fac/davis.html>

Sebastian Doniach

Professor of Applied Physics, Physics and Synchrotron

sxdwc@slac.stanford.edu

3-4786, 5-2189 Fax

Mail Code: 4045

McCullough 356

http://www.stanford.edu/dept/physics/people/faculty/doniach_sebastian.html

Alex Dunn

Assistant Professor of Chemical Engineering

alex.dunn@stanford.edu

Mail code: 5025

Stauffer III, 381 North-South Mall

Jim Ferrell

Reed-Hodgson Professor in Human Biology and Associate Professor of Molecular Pharmacology and of Biochemistry

james.ferrell@stanford.edu

(650) 725-0765, 3-2253 Fax

Mail Code: 5174

CCSR, Room 3155A

<http://www.stanford.edu/dept/molepharm/faculty/homepages/ferrell.html>

Daniel Fisher

Professor of Applied Physics

dsfisher@stanford.edu

3-4643

Mail Code: 4045

McCullough 336

Judith Frydman

Associate Professor of Biological Sciences

jfrydman@stanford.edu

5-7833, 3-6132 Fax

Mail Code: 5020

Gilbert Hall 306 B

<http://www.stanford.edu/group/frydman/>

Christopher Garcia

Professor of Molecular & Cellular Physiology and of Structural Biology

kcgarcia@stanford.edu

650-498-7332, 5-6757 Fax

Mail Code: 5124

Fairchild D319

<http://www-med3.stanford.edu/frd/biosci.lasso?-database=bluebook2.fmp&-layout=profile&-response=profile.lasso&-recordID=33617&-search>

Gary Glover

Professor of Radiology and, by courtesy, of Electrical Engineering and of Psychology

Gary.Glover@stanford.edu

(650) 723-7577

(650) 723-5795

Mail Code: 5488

Lucas MRS Bldg. P264

<http://www.stanford.edu/people/Gary.Glover>

Miriam Goodman

Assistant Professor of Molecular and Cellular Physiology

mbgoodman@stanford.edu

(650) 723-3100 Fax: 5-8021

Mail Code: 5345

B111 Beckman

<http://frd.stanford.edu/frd.lasso?-database=bluebook2.fmp&-layout=profile&-response=profile.lasso&-recordID=33729&-search>

William Greenleaf

Assistant Professor-acting of Genetics

wig@stanford.edu

(650)725-8696

Mail Code: 5120

Beckman B257A

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

Philip Hanawalt

Professor of Biological Sciences

hanawalt@stanford.edu

3-2424, 5-1848 Fax

Mail Code: 5020

Herrin Labs 394

<http://www.stanford.edu/~hanawalt>

Pehr Harbury

Associate Professor of Biochemistry

pehr.harbury@stanford.edu

5-7989, 3-6783 Fax

Mail Code: 5307

Beckman B437 A

<http://cmgm.stanford.edu/biochem/faculty/harbury.html>

Daniel Herschlag

Professor of Biochemistry

daniel.herschlag@stanford.edu

3-9442, 3-6783 Fax

Mail Code: 5307

Beckman B471 A

<http://cmgm.stanford.edu/biochem/herschlag/>

Keith Hodgson

Professor of Chemistry, Assoc Director of SSRL Division

hodgson@ssrl.slac.stanford.edu

3-1328, 3-4817 Fax

Mail Code: 5080

Keck 327 A

<http://www-chem.stanford.edu/group/hodgson>

KC Huang

Assistant professor of Bioengineering

kchuang@stanford.edu

1-2483

Mail code: 5444

Ted Jardetzky

Professor of Structural Biology

tjardetz@stanford.edu

8-4179

Mail code: 5126

Chaitan Khosla

Professor of Chemical Engineering and of Chemistry and, by courtesy, of Biochemistry

ck@chemeng.stanford.edu

(650) 723-6538, 3-9780 Fax

Mail Code: 5025

Keck 389

<http://chemeng.stanford.edu/html/khosla.html>

Brian Kobilka

Professor of Molecular and Cellular Physiology and of Medicine (Cardiovascular)

kobilka@stanford.edu

(650) 723-7069

Mail Code: 5345

Beckman B157

Eric Kool

Professor of Chemistry

eric.kool@stanford.edu

4-4741, 5-0259 Fax

Mail Code: 5080

Stauffer I, 103

<http://www.stanford.edu/group/kool/>

Ron Kopito

Professor of Biological Sciences

kopito@stanford.edu

3-7581, 3-8475 Fax

Mail Code: 5020

Gilbert 304 A

<http://www-kopitolab.stanford.edu/>

Roger Kornberg

Professor of Structural Biology

kornberg@stanford.edu

3-6988, 3-8464 Fax

Mail Code: 5126

Fairchild D123

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

Craig Levin

Associate Professor (Research) of Radiology

cslevin@stanford.edu

6-7211, 6-0234 Fax

Mail Code: 5344

Edwards Building, Rm 354

300 Pasteur Dr.

<http://mips.stanford.edu/public/faculty-info?personnel%5fid=1937>

Michael Levitt

Professor of Structural Biology

michael.levitt@stanford.edu

3-6800, 3-8464 Fax

Mail Code: 5126

Fairchild D109

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

Richard Lewis

Professor of Molecular and Cellular Physiology

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3-9615

Mail Code: 5345

Beckman B121A

Sharon Long

Professor of Biology

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Mail Code: 5020

Gilbert 216A

<http://cmgm.stanford.edu/biology/long/>

Merritt Maduke

Assistant Professor of Molecular & Cellular Physiology

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3-9075

Mailcode:

Beckman B 155

<http://www.stanford.edu/%7Emaduke/>

Tobias Meyer

Professor of Molecular Pharmacology

tobias.meyer@stanford.edu

5-6926, 5-2952 Fax

Mail Code: 5174

CCSR Rm 3215a

<http://www.stanford.edu/group/meyerlab/>

W. E. Moerner

Professor of Chemistry

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3-1727, 5-0259 Fax

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Stauffer II, Rm 12

<http://www.stanford.edu/group/moerner/>

Vijay Pande

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3-3660, 5-0259 Fax

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KECK Rm 315

<http://www.stanford.edu/group/pandegroup/>

Norbert Pelc

Professor of Radiology and Electrical Engineering

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3-8205, 3-0435 Fax

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Lucas MRS P263

http://www-radiology.stanford.edu/people/Pelc_Norbert.html

Beth Pruitt

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3-4133, fax 5-1587

Durand 213

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Joseph Puglisi

Professor of Structural Biology

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Fairchild D106

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Stephen Quake

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Clark Center E350Q

Jianghong Rao

Assistant Professor of Radiology and Bio-X Program

<http://mips.stanford.edu/public/faculty-info?personnel%5fid=103>

650) 736-8563

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300 Pasteur Drive, Edwards R356

Ingmar Riedel-Kruse

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Fairchild D243

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Mark Schnitzer

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Gilbert Biology Building, Dept of Biological Sciences

Jan Skotheim

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skotheim@stanford.edu

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Mail code: 5020

137 Lokay Building

<http://www.stanford.edu/group/skotheim/Site/Welcome.html>

Stephen Smith

Professor of Molecular and Cellular Physiology

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Mail Code: 5345

Beckman B141

Edward Solomon

Professor of Chemistry

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3-9104, 5-0259 Fax

Mail Code: 5080

MUDD Rm 141

<http://www.stanford.edu/group/solomon/>

Andrew Spakowitz

Assistant professor of Chemical Engineering

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6-8733

Mail Code: 5025

James Spudich

Professor of Biochemistry (Cardiovascular Disease)

jspudich@cmgm.stanford.edu

3-7634

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Beckman B400

<http://biochem.stanford.edu/spudich/>

Julie Theriot

Associate Professor of Biochemistry and of Microbiology and Immunology

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5-7968, 3-6783 Fax

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Beckman B473

<http://cmgm.stanford.edu/theriot/>

William Weis

Professor of Structural Biology and of Molecular and Cellular Physiology

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5-4623, 3-8464 Fax

Mail Code: 5126

Fairchild D139

<http://alpha1.stanford.edu/weis/>

Richard Zare

Professor of Chemistry

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3-3062, 3-9262 Fax

Mail Code: 5080

Mudd Building, RM 133

ACADEMIC REQUIREMENTS FOR THE PH.D. DEGREE IN BIOPHYSICS

Stanford University Academic Regulations

The Ph.D. degree is conferred on candidates who have demonstrated substantial scholarship, high attainment in their field of knowledge, and the ability to do independent investigation and present the results of such research. The Program and the University Committee on Graduate Studies make such recommendations to the Senate of the Academic Council.

Mandatory Course Requirements

Students must complete Biochemistry/Structural Biology 241, “Macromolecules” (offered Fall quarter) or BIOE 300, and Structural Biology 242 “Methods in Molecular Biophysics” (offered Winter quarter in alternate years). In addition, every new student is required to enroll in Biophysics Seminar 250 with Program faculty in the Fall quarter of their first year. In addition, you must also complete the course “Medicine 255 Ethics: The Responsible Conduct of Research”, sponsored by the Medical School (The program will be officially notified if you have completed all requirements for this course). If you are not able to graduate from this course during your first year, you will have to take the course again until all requirements are met.

Please be advised to choose “Letter grade” for grading option for ALL required courses.

Other Courses

Along with the courses described above, all students are required to complete for credit at least four other courses of at least 3 units each. **A “C” grade is not acceptable for a graduate student in the Program in Biophysics.** Students are advised to consult the annual **Stanford University** for a complete listing of available courses and should consult with their research advisor or the Director (if you do not yet have an advisor) concerning selection of courses.

Research Rotation

During the first year, students are encouraged to work in two labs (research rotations), or three if needed in order to make an informed choice for their thesis research. Based on these rotations, you will select the lab in which you will do your thesis work. The rotation period is a critical part of graduate training, serving to expose every student to a range of possible thesis topics. Such rotations are arranged by mutual agreement of the student and faculty member. For rotations, you should register for Biophysics 300 - Research followed by the name of Prof. Vijay Pande until you settle in a group.

A typical program for the first three quarters might include Biophysics 250 (1 unit), two 3 unit courses and 3 units of a research rotation. The number of units assigned to a research rotation is flexible and can vary to accommodate courses that have more or less than 3 units.

Unit Requirements for Minimal Progress

Students enrolling at the 10 unit tuition rate (required during Fall, Winter and Spring quarters of your first year) must complete a minimum of 20 units in three quarters.

Graduate students who are eligible to register in Terminal Graduate Registration (TGR) status are subject to the following special TGR progress requirements: each quarter, a student in TGR status must enroll in the TGR course 802 for zero units with the appropriate advisor section number.

Advising Committee

During your first year, the Program Director serves as your advisor. You should arrange a meeting with the Director when you arrive, in order to discuss course and research rotation selections. At the end of the first year, another meeting with the Director is required in order to assess progress and discuss choice of dissertation laboratory. You are encouraged to meet more frequently as you deem necessary to further discuss course and research choices.

Once you have chosen a research advisor and have begun your thesis-related research, you are required to select an Advising Committee. **You are required to have an Advising Committee in place no later than Fall quarter of your 2nd year in the Program and you need to COMPLETE THE "DOCTORAL DISSERTATION READING COMMITTEE FORM" AND THE "APPLICATION FOR CANDIDACY FOR DOCTORAL DEGREE" FORM, AND RETURN IT TO THE PROGRAM OFFICE. Please come and see Kathleen Guan to obtain these forms.** Choice of the members of this Committee is very important. The individuals you select will serve as an advising and consultative group for the duration of your graduate studies. They will evaluate your dissertation proposal and constitute the core of your thesis defense committee. You should consult with your research advisor on the selection of your Advising Committee. Besides your principal advisor (the Professor with whom you are doing your thesis-related research and who will serve as Chairperson on your Committee), the Committee should consist of two other faculty members whose areas of research interest and expertise overlaps with your proposed research topic.

If you choose to have a committee member who is not a member of the Stanford Academic Council, you must complete a "Petition for Doctoral Committee Member" form and return it to the Program Office. If, at any time, you change your advisor or a member of your Reading Committee, please complete a "Change of Advisor or Reading Committee Member" form and return it to the Program Office.

Qualifying Exam: You are required to arrange a meeting of your Advising Committee to present to them your proposed thesis related research project (Dissertation Proposal) **by the end of Fall quarter of your 2nd year.** In anticipation of this meeting, you should prepare an approximately 10 page summary of your proposed research and/or any progress you have made at that time. The precise format (e.g. inclusion of a timeline, methods section, etc.) is flexible and naturally can conform to the particular style of papers or proposals coming from your thesis lab. The main goal of the written portion is to briefly summarize your progress so far and carefully plan out our future thesis research plans. It is our hope that this process will be useful in crystallizing a research plan, on which your committee can give feedback and advice.

At the meeting, you should be prepared to make a 30-45 minute presentation of your research in which you discuss your results to date and propose further experiments. Audio-visual aids are not required, but may be useful if available. Following this meeting, the Chairperson of your Advising Committee must communicate to the Program office in writing whether or not your proposal was approved by the Committee. This will serve as your qualifying exam. After this meeting, you should arrange a meeting with your Committee once a year on your academia progress.

Relevant Courses 2011-12 Academic Year **Please see Stanford Bulletin 2011-12 for details.**

Programs are listed alphabetically within the School section they belong to. Biophysics and Biology are part of the School of Humanities and Sciences. Structural Biology, Biochemistry and Molecular and Cellular Physiology (and other PhD programs in Biosciences) are part of the School of Medicine.

The Dissertation Proposal

You will not be formally admitted to candidacy for the Ph.D. in Biophysics until:

- 1) You have completed the course requirements in the Program.
- 2) You have obtained approval from your Advising Committee of a dissertation proposal

Admission to Candidacy

After your Dissertation Proposal is approved, you must file an "Application for Candidacy" form (available in the Program office or from the Registrar's Office web site) to be admitted by Stanford University to candidacy for the Ph.D. degree. **Candidacy applications must be filed by the end Fall quarter of your third year in the Program, or the beginning of your 10th quarter. The Dean of Graduate Studies and Research has chosen to enforce this requirement by placing a "hold" on registration and/or stipend payments of delinquent students beginning your 10th quarter.** PLEASE COMPLETE AN "APPLICATION FOR CANDIDACY FOR DOCTORAL DEGREE" FORM AND RETURN TO THE PROGRAM OFFICE.

This completed form is submitted to the Program office and indicates that you are formally qualified to pursue the Ph.D. degree and are in good standing. It implies that the Program has made a careful review of your progress and that you are removed from probationary status. The form will list all courses that you have completed, will indicate that you have completed the dissertation proposal and will show that you are still required to complete your Dissertation.

Once you have been admitted to candidacy, the status is valid for five years subject to termination by the Program if progress is unsatisfactory. In special circumstances, it may be renewed by completing an "Application for Extension of Candidacy or Master's Program" form and returning it to the Program Office.

Any interruption of graduate work must be by official leave of absence (M.D./Ph.D. students take special note). Please complete a "Leave of Absence Petition-Graduate Student Only" form and return it to the Program Office.

THE DISSERTATION

Procedures

The University requires that the Dissertation be a contribution to knowledge and the result of independent work, expressed in satisfactory form. The work for the Dissertation will be in progress from the time you choose a lab in which to work. The Dissertation must be typed according to a specific format. This format includes instructions regarding form, preparation, title and signature pages, abstract instructions, copyright instructions, etc. If a typist is hired, you must be sure that the typist understands these instructions. The submitted Dissertation must conform to all requirements, including margins, size of type, etc. This will be strictly enforced. Obtain a copy of "Directions for Preparing Doctoral Dissertations" from the Program Office or from the Registrar's Office's web site. You must make an appointment to see the Graduate Degree Progress Officer at the Registrar's Office before you submit your dissertation.

The Dissertation Committee must sign all copies of the signature pages. Signatures are optional on the personal copies. One member of the Dissertation Committee (usually your research advisor) must read the Dissertation in its final form. He/she must then sign the "Certificate of Final Reading" that will be submitted with the Dissertation. An Abstract of the Dissertation must be approved for publication by the Program Chair and requires his signature.

It is your responsibility to obtain all required signatures on all forms and on the Dissertation. Students are strongly advised to remain in the Stanford area until the Dissertation has been turned in to the Graduate Degree Progress office.

The Dissertation and copies, plus the required accompanying papers, must be filed at the GDP office on or before the last day of instruction in the final quarter in which the degree is to be conferred. The dates are always printed on the University Calendar and no extensions are allowed. The following must be turned in:

- a) Dissertation: four unbound copies with original signature pages;
- b) Any additional copies of the Dissertation the student wishes to have Bound, or to be paid for by him/her;
- c) "Survey of Earned Doctorates" (pick up at the Graduate Office);
- d) Publication Agreement (pick up at the Graduate Office);
- e) "Notice of Intention to Complete Doctoral Requirements";
- f) Three additional copies of the title page of the Dissertation;
- g) Signed "Certificate of Final Reading";
- h) Signed Abstract (original and 1 copy); and
- i) Receipt from University cashier for binding, copyright, and publishing fee.

After handing in these materials, and having fulfilled all other degree requirements, the student can be recommended for the Ph.D. at the end of the quarter.

The Dissertation will be microfilmed and bound. GDP requires four copies and the Program office requires one copy of the Dissertation. You should order copies for yourself and your advisor, if desired. It is your responsibility to make sure these copies are prepared. GDP distributes their copies to the University Library, Archives, the department, and University Microfilms International. Bound dissertations are available within three months of submission to GDP. The author must make arrangements for picking them up within one quarter of binding; there is no mailing service.

Dissertation Expenses

The expenses to be anticipated in preparation of the Dissertation are typing, photocopying, binding, publishing fees, copyright fee, graphs, charts, photographs, etc. The Program does not have funds to cover these expenses and students are expected to cover these expenses themselves.

THE ORAL EXAMINATION

Request for An Oral Exam

A Dissertation defense consists of an oral examination that can be held any time after a complete draft (though not necessarily the final form) of the Dissertation has been submitted to and approved by the Dissertation Committee. At least 3 weeks before the proposed date for the oral Examination you should arrange a time that is agreeable to all oral Exam Committee members, schedule a room, and contact the Program Office. **PLEASE OBTAIN A "UNIVERSITY ORAL EXAMINATION SCHEDULE" FORM FROM LUCIE, COMPLETE AND RETURN TO THE PROGRAM OFFICE.** The Program Office will arrange for an announcement of the Oral to be sent to other departments.

Any audiovisual aids needed should be requested when the room is reserved. An abstract should be submitted to the GDP office with the request.

Examiners for Oral Exam

The Committee of Examiners for the Oral Exam consists of your three-person Advising Committee and a fourth non-reader, plus a Chairperson. The Chairperson must be from outside the Program but can be from a Department already represented on the Committee.

The Exam

The oral Examination in Biophysics is comprised of a 50-minute seminar, open to the public, after which there is a public discussion period. The candidate and the Committee of Examiners then hold a closed session during which the candidate answers questions pertaining to the Dissertation. The seminar and questions will assess the candidate's work within the broader context of the field of Biophysics.

Voting, by secret ballot, takes place after the candidate has been questioned and dismissed. Only members of the Committee of Examiners may vote. The candidate will pass the orals if at least 3/4 of those voting are in favor of a pass. The report of the results, along with the candidate's folder, is turned in to the Program office by the Chair of the Committee of Examiners.

In the event that the committee votes to fail a student, the committee will review the results. The Chair of the Committee will transmit to the Program Director a written evaluation of the student's performance. The Committee may recommend the length of time that should intervene before the student may retake the orals and any conditions to be met before it may be retaken. The Committee may recommend that the student not be permitted to repeat the Orals. The Program Director will discuss the recommendation with the student and his/her Advisor to decide on the action to be taken. The student will receive a written statement indicating a final action within 30 days of the orals. The statement will include a reference to the academic grievance procedures available to all students as stated in the Stanford University Bulletin.

Conferral of Degrees

The "Notice of Intention to Complete Advanced Degree Requirements" is required for conferral of all graduate degrees. The "Notice of Intention" should be submitted to the GDP office, preferably in the second week, but no later than the last day of classes of the degree quarter. (See special deadline below for spring commencement.) A Recommending List of students who have applied for conferral of graduate degrees is reviewed by the GDP office and the Program office to verify completion of degree requirements. Students who wish to defer their conferral date must file another "Notice of Intention" form for a later quarter. A "Notice of Intention" form must be submitted for each degree and conferral quarter.

Within two weeks of Conferral in Summer, Autumn, and Winter Quarters, degree certificates are sent to students who have been awarded degrees. Transcripts verifying conferral of degrees may also be obtained from the Registrar's office.

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 the addresses provided on the "Notice of Intention". Students indicate whether they would like to receive their diplomas at commencement ceremonies or have it mailed to them.

Students who expect to complete their degree requirements in Summer Quarter but wish to participate in commencement activities in advance of a conferral of their degree, may obtain a Walk-through Petition Form from the Program office after May 1. Walk-through petitions are approved for students who are in good standing in their department and are not on the June degree list. Students must personally walk the petition around to each office for required signatures.

FINANCIAL INFORMATION

Period of Funding and Research Assistantships

All students must be registered in any quarter in which they are receiving training grant or assistantship support, including summer quarter. Students supported by the Training Grant will receive a basic stipend and tuition supplemented by a Research Assistantship. Students are responsible for discussing supplemental Research Assistantships with prospective Advisors.

Financial awards that provide tuition and a living stipend are given so students may work exclusively on their studies. Additional concurrent employment is limited to eight hours per week. Exceptions, which are rarely made, must be approved in advance by the Program and the Graduate Dean.

NIH Training Grant Support

Graduate students supported by the NIH Training Grant receive a maximum of 2 years of NIH funding. **The level of stipend support in year 2011-12 will be \$30,500 per year.** During the first year (Fall, Winter, and Spring quarters) before a student has joined a research group, the difference between the annual stipend and funds from the NIH Training Grant will be provided by the Biophysics Program. The health insurance is subsidized by the university. Normally the Biophysics Program will pay for you while you are on the training grant or have a fellowship. After the training grant, all stipend and tuition support is provided by the research advisor, as well as health insurance.

The Biophysics Program encourages students to obtain outside graduate fellowships (e.g., NSF, HHMI, etc.) if possible. The Graduate Financial Aids office has forms and addresses to assist you in applying and can provide advice. Such fellowships benefit both the student and the Program. Fellowships are a significant recognition of outstanding achievement and potential. It is to your advantage to have achieved such recognition when applying for post-doctoral positions or employment. Often the stipend rate of fellowship support is greater than the current stipend provided by the Program, and this may be a financial incentive. If a fellowship is obtained which is less than the then current level of stipend support from the Biophysics Program, the Program will supplement the stipend up to the current level. The Program benefits from outside support because it liberates a slot on the training grant for support of added students in the Program and/or students beginning their fourth year. This has a direct benefit on the resources available for research in individual laboratories with direct benefit for the people working in those labs.

Stipend Payments

Students should receive the stipend checks at the beginning of each quarter. Because some paperwork needs to be filled out before checks can be issued, the first check for new students may be delayed a bit. Please let the Program Director know if this presents a major financial hardship.

Students paid on quarterly stipends will not have taxes deducted from their checks and, therefore, need to file quarterly estimated tax forms with the IRS to report moneys earned. Additionally, you will not receive any W-4 statement at the beginning of the following calendar year.

Tuition Payment

You will receive a tuition credit on your University bill for any support from the Program Training Grant or other sources. If a credit does not appear, and you believe it should, immediately contact the Program office at 3-7576 or kguan@stanford.edu