

GUIDELINES FOR HUMAN GENETICS GRADUATE STUDENTS

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THE Ph.D. PROGRAM

A. General Requirements and Time Period. Graduate students are expected to obtain their Ph.D. degree before the end of their sixth year at the University of Utah (in other words, after five years in the Department of Human Genetics). The student is expected to devote all working time and energy to these studies. In order to encourage students to plan for an appropriate graduation date, those students who are still in the Department after seven years at the University will not receive a stipend from any source. This rule can be waived only in exceptional circumstances. Individual cases must be appealed directly to the Director of Graduate Studies and Departmental Chairman. A Ph.D. candidate must register for a minimum of 20 credit hours of thesis research (HGEN 7970). Graduate students in the Department of Human Genetics are expected to abide by the "Honor Code" and "Academic Standards" established by the Molecular Biology and Biological Chemistry Graduate Programs, signed by the students during their first year. Failure to do so can result in dismissal from the graduate program. Finally, all Human Genetics graduate students are expected to participate in the annual Human Genetics Department retreat. This meeting is held each year in the fall at a nearby ski resort. Students give either an oral presentation of their research or provide a poster. Students also are expected to attend and participate in the weekly Departmental Journal Club (JC) and Research In Progress (RIP) meetings each week. All Human Genetics students present one JC talk each year through at least their fourth year in graduate school. Thus, each student will give at least three JC talks during their stay in the Department. Presentation in subsequent years is encouraged and supported, particularly for students who are considering a future career in teaching. Students will present one RIP talk each year throughout their stay in the Department, with the exception of the final year before their defense. The University of Utah seeks to provide equal access for people with disabilities. If the student needs accommodations in class and/or lab, contact the Center for Disability Services, 581-5020, and alert Natalie to your needs.

B. Selection of Research Advisor. At the end of the first year of graduate study in the combined programs, a student who selects a Human Genetics faculty member as their advisor joins the Human Genetics Department. The student's graduate records and personnel forms are transferred from the Molecular Biology or Biochemistry Program to the Human Genetics Department office, Room 2100.

C. Teaching Responsibilities. All Ph.D. candidates in Human Genetics must complete one semester as a teaching assistant within their first two years in the Department – and are strongly encouraged to do this during their first year in the Department (2nd year of graduate study). These assignments shall be completed without regard to the source of support. International students must take ITA Workshop (held every August) and be cleared by the ITA Program through the Graduate School before they can TA. Note that teaching in a half-semester class fulfills only one half of the teaching requirement. Also, teaching in classes that are less than one-half semester in length needs to be approved by the faculty. Qualifying courses include: Full semester classes: Biology Department undergraduate courses (contact Shannon Nielsen for

specific course options), and MBIOL 6420 – Genetics & Genomes. Half semester classes: MBIOL 6440 – Gene Expression, MBIOL/BLCHM 6410 – Biochemistry, MBIOL 6480 – Cell Biology, BLCHM 6430 – Structural Methods, BLCHM 6450 – Biophysical Chemistry, BLCHM 6460 – Protein Chemistry, BLCHM 6420 – Advanced Biochemistry, BLCHM 6400 Genetic Engineering, and NEUSC 6250 – Molecular Biology Bootcamp Laboratory. In addition, a few students have tutored undergraduates while others have participated in teaching opportunities offered through the Genetics Science Learning Center. All final decisions on fulfilling the TA requirement are made by the student's advisory committee.

D. International Students.

All international students are required to check in with the International Center on campus within the first 15 days of the semester. This includes transfer students. New international students are required to attend an orientation. Please contact the International Center at 581-8876 (<http://www.sa.utah.edu/inter/default.asp>). Before international students can undertake a Teaching Assistantship, they must have clearance from the Graduate School's International Teaching Assistant Program. See <http://www.utah.edu/ita> for information.

E. Course Work.

Tuition Benefit Program. For the first 3-5 years in graduate school, most graduate student tuitions are paid for by the University through the Tuition Benefit Program. Students need to maintain at least 9 credit hours throughout the semester and a cumulative GPA of 3.0 in order to receive this benefit. The benefit lasts for five years (10 semesters) for most Ph.D. students. Students who enter with a Master's degree from the University of Utah receive 3 years (6 semesters) of tuition support, while students who enter with a Master's degree from another university receive 4 years (8 semesters) of tuition support. All non-international graduate students must apply for residency as soon as they have completed 40 graduate credit hours. Establishing residency in Utah should be done as soon as possible to be sure that the student qualifies for reduced in-state tuition. In addition, all formal coursework should be completed within the time covered by the Tuition Benefit Program. This is 4-5 years of graduate school for most students, depending on how they are classified – see Natalie to determine your deadline. When students no longer qualify for the Tuition Benefit Program, the Department will only pay for 3 credit hours of thesis research per semester up to the end of the 7th year in graduate school. Any additional charges (for example, for coursework not completed while on the Tuition Benefit Program) will be the student's responsibility. More details are available from Natalie.

Human Genetics Departmental Program. During their first year in the Biological Chemistry or Molecular Biology Program, students are expected to pass the required "core" lecture courses (a grade of B- or higher) and other classes. Classes with lower grades need to be retaken as soon as possible. In addition, once they join the Human Genetics department, students are required to successfully complete at least 1.5 semesters of upper level courses. These should be done during the second year of graduate study if at all possible, and no later than the third year in order to qualify for tuition benefits. A listing of advanced graduate classes can be found at:

<http://www.bioscience.utah.edu/curriculum/electives.html>

These courses must include:

- at least one half semester advanced seminar ("special topics") course. These are designed for advanced graduate students. Format is generally similar to that of a "directed reading journal club", that is, a syllabus is designed by the instructor and students take turns presenting the material. Please note that participation in the weekly Departmental Journal Club does not fulfill this requirement.
- at least one half semester graded lecture course. These are usually designed for advanced graduate students and are generally 2 credit hours, about 8 weeks in the semester system. Acceptable courses are 600 level and higher (undergraduate classes do not qualify). If appropriate, 500 level courses can be approved by the Supervisory Committee.

All other student course work will be arranged through discussions with the Supervisory Committee. One class to consider is Greg Stoddard's Introduction to Biostatistics class in the fall: MDCRC 6000 Statistics for Basic Science, 1-2 credit hours. Problems will be solved using the Stata statistical software. Topics include: descriptive statistics, significance testing, multiple comparison adjustment, data management and presentation, sample size determination, and analysis of clustered data. Animal and bench experiment datasets will be used.

The above course requirements must all be met in order for the student to obtain a Ph.D. degree.

Required Hours : Students who have not passed their prelims are required to register for a total of 9-12 hours, HGEN 7960 (towards graduate degree) per semester, unless told otherwise by Natalie. Once the student has passed their prelim and has been at the University for five or more years, they should register for HGEN 7970 for 3 hours. Students receiving financial aid are required to register for a minimum of 5 credit hours.

Required Thesis Hours: The Graduate School requires that each student fulfill 20 hours of Thesis Research (HGEN 7970) for the minimum graduation requirement.

Summer Semester: Natalie will contact those students eligible for the Summer Tuition Benefit Program with instructions for summer semester registration. Not all students are eligible for this summer program and should not register unless instructed to do so.

Journal Club and RIP: All Human Genetics students are required to participate in the Departmental Genetics Journal Club (Tuesdays at noon) and Research-In-Progress meetings (Fridays at 4 PM). Contact Patty Lisieski (pattyl@genetics.utah.edu) for more information.

F. Supervisory Committee. A student's Supervisory Committee should be selected during the first year in the Human Genetics Department. The student, in consultation with their research advisor, will choose a committee of five members with the Research Advisor as head. Of those five, at least 3 and no more than 4 members must be from the Department of Human Genetics. From 1-2 faculty must be from another department on campus, with either a primary or adjunct appointment in a Ph.D.-degree granting department. At least one member of the committee must be a full-time Human Genetics faculty member, not Adjunct faculty and not on the Research track (i.e. non-tenure track). All University of Utah faculty members are eligible to serve as supervisory committee members. The student's first meeting with the Supervisory Committee is at the start of the Ph.D. preliminary exam – when the student selects an abstract to develop as a

prelim exam topic. All members of the student's Supervisory Committee participate in the Preliminary exam with the exception of the student's Research Advisor who should only attend the prelim exam if they wish to observe the student's performance. This attendance is optional and the advisor cannot participate in the prelim exam in any capacity.

G. The Ph.D. Preliminary Exam. A separate set of guidelines are available that describe the Preliminary Exam process. The Ph.D. preliminary exam must be initiated by the end of the second year at the University of Utah (i.e. the end of the first year in the Human Genetics Department). Failure to abide by this guideline will result in automatic failure of the exam. Ask your committee to sign the form entitled, "Request for Supervisory Committee" at your first meeting. This form is available in, and should be returned to, the Human Genetics Office (see Natalie). The Supervisory Committee should designate one member to write up a synopsis of the exam, including the outcome. This will be sent to the student, their supervisor, the other committee members and Natalie. Once Natalie receives the synopsis, she will enter the exam date into the online graduate tracking system and the advisor will confirm that the prelims were passed. Note that it is the student's responsibility to be sure that this completed form is given to Natalie. Failure to hand in this form will result in no credit for the prelim exam.

H. Annual Supervisory Committee Meetings. Within 4-6 months after the successful completion of the Ph.D. Preliminary Exam, the student should have their first Supervisory Committee meeting to discuss their thesis research. A 10-15 page double-spaced description of their research, in NIH grant format, will be provided to the committee members one week before this meeting (see Preliminary Exam guidelines for more detail).

After this initial meeting, the Supervisory Committee must meet with the student at least once a year. Students must meet this requirement in order to receive their tuition waivers. Committee meetings provide an ideal opportunity for students to gain new perspectives and directions in their research. These meetings also help students progress through their research in a timely manner. Students are encouraged to seek the advice of their committees as often as they feel necessary, either in individual or group settings. Furthermore, committee meetings must be held every four months during, and after, the seventh year of graduate study (sixth year in the Department). It is the student's responsibility to schedule these meetings. If there are scheduling difficulties, remember that not all committee members have to be present at each meeting (or you can select a temporary replacement). A "Report of Progress" form should be picked up from the Department Office (Room 2100) before each meeting and returned with the signatures of the committee members. The Report of Progress will be kept in the student's personal file in the graduate office (Room 2100) and provide a written record that the annual requirement for a committee meeting has been met. At the start of each meeting, the student should be prepared to leave the room briefly. This allows the committee to discuss their impressions of the student's progress over the past year.

I. Program of Study. The student should sit down with Natalie to fill out the "Program of Study" on the graduate tracking system after ~75% of course work has been completed. This is due no later than one year prior to graduation, failure to meet this deadline will delay the formal graduation date. All members of the Supervisory Committee will sign this form electronically.

J. Thesis Defense. Students must contact Natalie at least one year prior to defending their Ph.D. thesis to review the online student progress report. The student must fill out and submit an application for graduation to the Registrar's office which is due several months in advance of the graduation date. <http://www.sa.utah.edu/regist/graduation/applying.htm>

Thesis Writing: The thesis must conform to University rules. The Thesis Editor, located in Building 44 on lower campus, is available for consultation. The 'Handbook for Theses and Dissertations' is available on the Thesis Office website to assist with formatting. Style guides, the calendar of cutoff dates for submissions, and necessary forms are also available. The University Copy Center provides expert copying, including reduction and reproduction of published manuscripts to thesis specifications. Please be sure to review the guidelines on the thesis office website for the most recent submission process. <http://www.gradschool.utah.edu/thesis/index.php>

Oral Defense: The written thesis is presented to the Ph.D. Supervisory Committee at least two weeks before the defense date. Please see Natalie and Elaine in the graduate office as early as possible to schedule the auditorium and go over necessary forms. On the defense day, the student presents an open one-hour seminar on their research. The Supervisory Committee meets with the student after this talk to discuss any aspects of the student's writing, research, or other aspects of the student's progress. The results are recorded by Natalie on the "Report of the Final Oral Examination for Ph.D." through the online graduate tracking system. Remember to bring the appropriate papers for signing along with several black pens. The University requires that the candidate must be regularly enrolled for three or more credit hours during the semester in which the final oral examination is taken.

K. Master's Degree. Students occasionally leave the program prior to completion of a doctoral degree. A Thesis Master's is offered at the discretion of the advisor and Supervisory committee if there is sufficient data to warrant writing a master's thesis. Otherwise, no thesis is needed. University rules govern the awarding of the M.S. degree. See the current University of Utah General Catalog for requirements. A student must have achieved a B or better grade in all core courses, and have at least 20 hours of course work (semester system). Any student who has passed their prelim exam has qualified for a Master's degree. A student who has not taken a prelim exam or failed their prelim exam may choose to defend a Masters degree in front of a committee of three department faculty members (one of whom is the graduate research advisor), as evidence of having completed a significant body of independent research. No thesis is needed for this Master's Degree.

The following forms must be completed for all doctoral candidates:

1. Request for Supervisory Committee. Must be completed at the first prelim committee meeting.
2. Report of Progress. Must be completed at least once a year.
3. Ph.D. Preliminary Exam. Must be initiated before the end of the second year at the University.
4. Program of Study for the Ph.D. Must be completed after 75% of course work has been completed, and must be filed one year before graduating.
5. Report of the Final Oral Examination. Must be completed on the day of the thesis defense.

L. Transfer from Another Department or University

Students who transfer from another institution need to directly apply to the University of Utah and pay a minimal application fee. They are allowed to transfer up to six semester credit hours, but can petition the Dean of the Graduate School and the Graduate Admissions office if they want to transfer more credits. Any student transferring to the Human Genetics Department from another department of the University of Utah will be considered as a new student with regard to the Ph.D. graduate program, and should contact Carl Thummel directly. The student's new Supervisory Committee in the Human Genetics Department shall have the right to determine: 1) further course work that the student must take, and 2) whether or not a qualifying examination taken in another department will be accepted in whole or in part as satisfying the Human Genetics Departmental requirements.