

Genes & Development Student Handbook

www.mdanderson.org/departments/genesdev

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The information in this handbook is subject to change and corrections.
Please visit the Genes & Development and GSBS websites
for the most current information and forms.

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Message from the Director

Dear G&D Students,

This is the third edition of the G&D Student Handbook and should provide you with valuable information on the program, its policies and where to get answers to your questions. We have tried to also include resources available to you at the GSBS, the U.T. Health Science Center and M. D. Anderson. You should think of the handbook as a valuable first source on information.

We expect and hope that you will be active participants in your labs, your departments and the G&D program. The interactions you have with those around you, whether they result in collaborations or not, are key to your scientific development and success. Speak often with your colleagues, attend and participate in seminars and retreats, read the literature, work hard, think deeply about your work, and enjoy the new discoveries that make scientific research rewarding.

The handbook will also be posted on the G&D website, so that you can have ready access to its contents. We will also post updates and changes to the handbook on the website, so check there for any changes. You will also want to keep track of procedures, policies, and requirements through the GSBS website. The GSBS website is also your source for the most recent forms they require.

Welcome to G&D! I wish you great success and a life of discovery. If you have any suggestions for improving the handbook, or corrections, please send them to me, so that we can keep the handbook a current resource. Finally, let me thank Elisabeth Lindheim for continued efforts in support of the program and helping to keep this document up to date.

Sincerely,

Gregory S. May, Ph.D.
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G&D Intranet Site: <http://inside.mdanderson.org/departments/genes-and-development-graduate-program/index.html>

The G&D website is your resource for the annual retreat, event calendar, awards information, candidacy exam, and more. Bookmark it today!

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GSBS Website: <http://www.uthouston.edu/gsbs>

GSBS Forms: <http://www.uthouston.edu/gsbs/current-students/academics/forms/index.htm>

GSBS Room Reservations: <http://www.uthouston.edu/gsbs/current-students/information-technology/classroom/index.htm>

Requirements for Ph.D. Degree: <http://www.uthouston.edu/gsbs/current-students/academics/policies/policies/phd-requirements.htm>

Joining Genes & Development

Section Topics

- Who Can Join
 - When to Join
 - How to Join
 - Department Check-in
-

Who Can Join

There are four criteria, all of which need to be met, for joining the G&D Program.

- You are a Ph.D. student (per GSBS policy, the G&D Program is not open to Masters students).
- The advisor you select to supervise your dissertation research is a G&D faculty member.
- The Director of the Genes & Development Program approves your request to join.
- Your advisor approves your request to join the program.

When to Join

Students generally join the Genes & Development Program toward the end of their first year in graduate school, after they have completed their last rotation and joined a G&D lab.

How to Join

When you decide to join G&D, or even if you're not sure and have some questions, please meet with the Program Manager. She will tell you what you need to do, give you important program information, and tell you about the laptop program and other program activities. To join, you will need to fill out these two forms, which she will give you.

1. **“Notification of Ph.D. Program Affiliation”** (a GSBS form)
This form is also on the “Forms” page of the GSBS website under “Other Forms” at http://gsbs.uth.tmc.edu/current_forms.htm.
2. **“New Student Information”** (a G&D form)

Department Check-In

When you join a G&D lab at M. D. Anderson, either for a rotation or when permanently joining a lab, you need to go through a “check-in” process. The first step is to contact your advisor’s administrative support staff. This is very important! They will explain the process for their department, including academic appointments, badges, keys, lab coats, mailboxes, email accounts, orientation programs, etc.

Program Timeline and Requirements

Section Topics

- Year-by-Year Timeline
 - Course Requirements
 - Course Substitutions
 - Waiving a Required Course
 - Electives
 - Sample Coursework Timeline
 - Public Presentations
 - Committee Meetings
 - Annual Research Report
 - Participation in Seminars and Events
 - Candidacy Exam
 - Publications
 - G&D Affiliation on Publications
 - Dissertation
-

Overview

Requirements for the Ph.D. degree include a broad knowledge of gene regulation, biochemistry, molecular biology and developmental biology. These are acquired through coursework, three laboratory rotations during the first year, a candidacy exam, a dissertation research project and participation in research seminars and journal clubs.

Year-by-Year Timeline*

- Yr 1:** Take required and elective courses, and complete your three lab rotations. Towards the end of your first year, select your advisor, join G&D, begin your thesis project, and form your Advisory Committee.
- Yr 2:** Continue your dissertation research and complete your coursework. Have your first Advisory Committee meeting in the fall and petition for candidacy in the late spring or summer. The timing of the petition depends on which term you started at GSBS.
- Yr 3:** Take your candidacy exam in the fall semester (or summer if you matriculated in the summer term), continue your dissertation research, and, upon advancing to candidacy, choose your Supervisory Committee. Meet with your Supervisory Committee in the spring.
- Yr 4+** Continue your dissertation research and meet with your Supervisory Committee at least once every six months until you write and defend your dissertation. The program expects that most students will finish in six years or less.

**see page 22 for a yearly schedule of committee meetings.*

Course Requirements

The G&D Program has modified GSBS Area course requirements that are satisfied by the courses below for the Molecular, Systems and Quantitative Areas. There is no Cellular Area requirement for the G&D Program.

In addition to these courses, GSBS requires all students to take a Biomedical Ethics Course (GS210051). See sample timeline on the next page and course descriptions starting on page 14 of this handbook and on the GSBS website: http://gsbs.uth.tmc.edu/current_courses.htm

Required Courses

- **Experimental Genetics** (GS040203 – fall annually)
- **Eukaryotic Gene Expression** (GS040123 – spring annually)
- **Developmental Biology** (GS040073 – fall annually) **OR** **Cancer Cell Signaling** (GS040133 – spring annually) **OR** **Structure and Function of Biological Macromolecules** (GS030013 – fall annually)
- **Current Topics in Genes and Development** (GS040801 – fall and spring). Both Fall (scientific writing skills) and Spring (scientific presentations) semesters are required.¹
- **Metabolic Biochemistry** (GS030014 – fall annually) **OR** **Topics in Biochemistry and Molecular Biology** (GS030024 – spring annually)

¹ The spring semester is required for students who enter GSBS on or after August 2003; the fall and spring semesters are required for students who enter GSBS on or after August 2006.

How G&D Requirements Fulfill GSBS Area Requirements

- **Systems Area:** Experimental Genetics
- **Molecular Area:** One of the Biochemistry courses above. G&D students with strong undergraduate biochemistry backgrounds may be able to use the Eukaryotic Gene Expression course as an alternative course to fulfill the GSBS molecular area breadth requirement. Approvals from the course directors, program director and GSBS Dean's office are required. See the GSBS website for more information.
- **Quantitative Area Requirement:** G&D recommends Biomedical Statistics (GS010014) **or** Current Methods in Molecular Research² (GS030102). However, any course that satisfies this area requirement is acceptable.
- **Cellular Area:** Not required for students in the G&D Program.

² Both semesters of Current Methods in Mol. Res. must be taken to satisfy the GSBS Quantitative Area Requirement.

Course Substitution

Students wishing to substitute another course for a program course requirement can do so provided they satisfy the following requirements:

1. It is of clear benefit to the student's education.
2. The new course fulfills the same GSBS area requirement as the original G&D course (i.e. a "systems" course must be substituted by another "systems" course).
3. All members of the student's advisory committee agree that the change will benefit the student and provide signature approval. If the student has not formed his/her advisory committee, then just the advisor's approval is required.
4. The G&D Program Director approves the change.

Waiving a Required Course

Students wishing to waive a G&D required course may do so with the approval of both their advisor and the course director, and only if the course director believes a course taken previously is equivalent to the G&D course. If the student wishes to waive the GSBS area requirement that this course would have satisfied, they must also get approval from Dr. Wiener at GSBS to waive the GSBS requirement.

Electives

In addition to the course requirements on the previous page, formal courses may be recommended to students by their committee based on their individual needs. You can find information about other GSBS courses at: http://gsbs.uth.tmc.edu/current_courses.htm

Sample G&D Coursework Timeline, Years One & Two

This is a sample timeline only. Depending on your academic background, interests and courses taken prior to joining G&D, you may want or need to adapt it.

Credit Hours Note

To be considered fulltime, you must register for a minimum of nine credit hours for the Fall and Spring terms, and a minimum of six hours for the summer term. As a result, in addition to the courses listed below, first year students should be aware that additional courses may be required to meet the graduate school's minimum credit hour requirement. In addition, please note that Research in Biomedical Sciences carries a default credit value of 9. This is a variable credit, i.e., you can register for 1 to 9 hours for this.

			Add for Program Track Choice		
		All G&D Students	Developmental Biology	Cancer Biology	Structural Biology
Year 1	Fall ¹	Experimental Genetics Biomedical Ethics Lab Tutorial #1			
	Spring	Eukaryotic Gene Expression Lab Tutorials #2 and #3 Elective			
	Summer	Biomedical Statistics			
Year 2	Fall ¹	Current Topics in G&D Metabolic Biochemistry ¹	Developmental Biology ¹ (if not taken in first year)		Structure and Function of Biological Macromolecules (if not taken in first year)
	Spring	Current Topics in G&D and Optional Elective		Cancer Cell Signaling (if not taken in first year)	

¹ Metabolic Biochemistry and Developmental Biology are currently offered during the same time slot. If you plan to take both courses, then plan to take one of them in the fall of your first year.

Timeline Notes

- Developmental Biology, Experimental Genetics & Eukaryotic Gene Expression can be taken in the first or second year.
- One Biochemistry class is required: either Metabolic Biochemistry, or Topics in Biochemistry and Molecular Biology. Introductory Biochemistry does not fulfill this requirement. The biochemistry class selected to fulfill this requirement can be taken in the first or second year.
- Research continues year-round once you join a lab at the end of the first year.

Offered Fall Only

Experimental Genetics
Developmental Biology¹
Metabolic Biochemistry¹
Biomedical Ethics
Current Topics in G&D (Writing)
Structure and Function of Biological
Macromolecules

Offered Spring Only

Eukaryotic Gene Expression
Cancer Cell Signaling
Topics in Biochemistry and Molecular Biology
Current Topics in G&D (Oral Presentations)

¹ If you plan to take both courses, then plan to take one of them in the fall of your first year.

Public Presentation Requirement

Before graduation, G&D students are required to participate in at least five seminar courses that require them to make an oral presentation. With the approval of their supervisory committee, students may be able to satisfy this requirement through a combination of the seminar courses and oral presentations at other venues (see below). Please note that rotation talks do not qualify.

Suggested Seminar Courses*

- GS040731 Seminar in Developmental Biology
- GS040801 Current Topics in Genes and Development (*can be repeated*)
- GS110631 Current Topics in Human and Molecular Genetics
- GS040721 Seminar in Tumor Suppressor Genes
- GS040761 Current Topics in Oncogene Research
- GS040771 Current Topics in Tumor Progression
- GS040791 Topics in Programmed Cell Death
- GS040812 Seminar in Molecular Mechanism of Human Cancer

* see course descriptions at: http://gsbs.uth.tmc.edu/current_courses.htm

Other Presentation Venues (advisory/supervisory committee approval needed)

- Departmental research seminar or journal club presentation.
- Area interest group presentation (e.g. Center for Cancer Epigenetics, fly, worm or mouse club).

Committee Meetings Requirement

All G&D Ph.D. students are required to meet with their advisory, examining or supervisory committee two times per year, usually in six-month intervals. You will find a detailed description of the different committee meetings, how to set them up, how to prepare, what to bring, what to expect, etc. in the “Committee Meetings” section starting on page 18.

All G&D students should form their advisory committee within one month of joining a G&D lab and the program, and schedule their first advisory committee meeting within four months of joining.

The purpose of your first advisory committee meeting is to meet everyone, discuss coursework, and get feedback on your experimental approaches, interpretations, and goals. Don't worry if you don't have results to present; the first meeting is to get advice that will help you plan your future directions. Don't delay your first meeting because you lack preliminary data.

Annual Research Report Requirement

Each summer, all G&D students are required to submit a research report, a program checklist and an NIH-style biosketch (biographical sketch).

Research Report

The research report includes a brief explanation of the rationale for the student's project and a description of the results, emphasizing those obtained in the previous year and those carried out personally by the student. Students who do not have any significant results to report are asked to describe the background of their project and their plans for the coming year.

Each year, the program gives two students a monetary Research Achievement Award based on their personal research accomplishments, as described in these reports. One goes to a pre-candidacy student and the other goes to a post-candidacy student. The post-candidacy award recipient is invited to give the Grady Saunders Student Lecture at the annual G&D retreat.

Annual Program Checklist

Each year when you turn in your annual research report, you will need to submit an updated G&D program checklist. This form is posted on the G&D website. *See sample in Appendix.*

NIH-Style Biosketch

A biosketch is a document where you list your educational background, positions, honors and peer-reviewed publications and manuscripts. *See sample in Appendix.*

Participation in Program and Departmental Seminars and Events

All students are expected, and in some cases required, to participate in a variety of program and departmental-based activities that are held throughout the year. You will find a complete description of these starting on page 36.

Departmental-Based Requirements

- **Biochemistry & Molecular Biology Department:** Students in this department are required to attend the department's weekly Research Seminar Program and are encouraged to attend its weekly journal club.
- **Genetics Department:** Students in this department are strongly encouraged to attend their weekly Research Exchange Seminar Program.

Participation in Program and Departmental Seminars and Events, continued

Other Seminars and Events (see “Program Events & Activities” section on page 36 for more information)

- Blaffer Seminar Series
- Annual Retreat
- First Year Rotation Talks
- Thesis Defense Talks
- G&D Dialog Series
- Directors’ Roundtable
- G&D Bioinformatics Workshops
- Fall Faculty/Student Dinner and Other “Mixers”
- Other seminars within the Texas Medical Center

Candidacy Exam Requirement (see “Candidacy” section on page 25 for detailed information)

Students in GSBS are required to pass the candidacy exam before advancing to Ph.D. candidacy. Most students take the candidacy exam in the fall semester of the third year. Students starting in the summer term will take the candidacy exam in the summer after the second year. All required GSBS coursework must be completed before taking the candidacy exam.

The student’s advisory committee must determine if the student is sufficiently prepared to take the candidacy exam, so timely meetings during the pre-candidacy period are very important. GSBS requires that students gain their committee’s approval, and petition for Ph.D. candidacy, before the end of the summer after their second year.

The G&D candidacy exam has a written component and an oral component.

Written Component

The written component consists of two parts. The first part is the writing of three, one-page, off-topic, abstracts that could be developed into a full written proposal. The student’s advisory committee selects one of these abstracts to serve as the subject for the second part of the writing component, which is the writing of the main NIH style written research proposal.

Oral Component

The oral component consists of the student’s defense of their written research proposal before a committee of five faculty members.

Publication Requirement

The G&D publication requirement must be met by students entering GSBS in August 2006 or thereafter. This requirement is waived for students who entered GSBS prior to August 2006.

All G&D Ph.D. students are required to have at least one peer-reviewed, first-author paper either published or in submission prior to obtaining permission to defend their dissertation. This policy applies to students who join GSBS in August 2006 and thereafter. However, it is hoped that all current students will also meet this minimum requirement.

This requirement is intended to encourage Ph.D. students (and their advisors) to have their dissertation work ready for publication prior to their defense. This avoids the problematic situation in which a student completes the Ph.D. but has not written up the work for publication before leaving. Often this leads to long and needless delays in publication that can harm the student's future career prospects. We hope that this requirement will encourage students and advisors to consider plans for publications at an early stage in dissertation projects.

Publications are an essential part of your training as a Ph.D. scientist. The requirement is only one part of what is expected for completion of the Ph.D. Your supervisory committee will ultimately judge if your research accomplishments are sufficient for a degree. Committees commonly expect more than one publication before the dissertation defense. Students are strongly encouraged to discuss your past publications and plans for future publications with your supervisory committee at each meeting.

Under extraordinary circumstances the Program Director may allow an exception to this rule. Such exceptions will be granted only with the unanimous consent of the student's supervisory committee; for example, when the student has completely developed research results that would clearly merit publication as a first-author paper in a peer-reviewed journal but, due to circumstances beyond the student's control, will not be submitted as such.

The final evaluation of a student's readiness to defend their Ph.D. thesis will take place one month prior to the defense date, when each committee member, the advisor and the program director are asked to sign the Permission to Defend form, available on the GSBS website.

G&D Affiliation on Publications

All manuscripts authored by G&D students and faculty should include an affiliation with the G&D Program. Suggested wording is as follows: Department of XXXX, The University of Texas M. D. Anderson Cancer Center and the Genes & Development Graduate Program, the University of Texas Graduate School of Biomedical Sciences at Houston.

Dissertation Requirement

The G&D Program follows the GSBS guidelines for the Ph.D. Dissertation and Thesis Defense. See these GSBS web pages for further information.

<http://gsbs.uth.tmc.edu/policies/phdreqs.html>

<http://gsbs.uth.tmc.edu/gradguide/thesis.html>

Course Descriptions

Section Topics

- Experimental Genetics
 - Eukaryotic Gene Expression
 - Developmental Biology
 - Cancer Cell Signaling
 - Structure and Function of Biological Macromolecules
 - Metabolic Biochemistry
 - Topics in Biochemistry and Molecular Biology
 - Current Methods in Molecular Research
 - Biomedical Statistics
 - Current Topics in Genes and Development
 - Seminar in Developmental Biology
-

GS040203 Experimental Genetics

This course provides students with a base of knowledge about concepts that are central to contemporary genetics (i.e. complementation, recombination, mutational screens, mosaic analysis, gene targeting) and covers current approaches used in the analysis of classical eucaryotic genetic systems including human, mouse, zebrafish, flies, nematode worms and yeast. Fulfills the GSBS Systems area requirement. 3 semester hours.

Prerequisite: None.

GS040123 Eukaryotic Gene Expression

This is an advanced molecular genetics course in which current results and theories, based on primary journal articles, will be discussed. The primary emphasis will be on the transcriptional regulation of gene expression. The effect of chromatin conformation, RNA splicing and 3' sequences on gene expression will also be discussed. Fulfills GSBS molecular area breadth requirement (alternative course). 3 semester hours.

Prerequisite: None.

GS040073 Developmental Biology

The mechanisms of embryogenesis and cellular differentiation will be discussed in terms of experimental evidence. The course will emphasize molecular, cellular and genetic analysis of developmental systems. Assigned reading will be recent research articles related to each lecture. These reading assignments, class lectures, and suggested readings in a standard textbook should give the student the opportunity to understand the major research problems in developmental biology and the methods used to solve these problems. Fulfills GSBS systems area breadth requirement. 3 semester hours.

Prerequisite: Consent of instructor.

GS040133 Cancer Cell Signaling

The course is designed to provide an in-depth study of oncogenes including structure of the genes, regulation of expression, assays to detect activated oncogenes, role of oncogenes in tumorigenesis, and the relationship of oncogenes and growth regulation and differentiation. Satisfies GSBS cellular area course requirement. 3 semester hours.

Prerequisite: A basic knowledge of molecular biology, genetics and biochemistry; consent of instructor.

GS030013 Structure and Function of Biological Macromolecules

Structure and Function of Biological Macromolecules provides an in-depth examination of the chemistry, structure and function of biological macromolecules with an emphasis on proteins, nucleic acids and their complexes. Specific topics that will be covered include: the structures and chemical properties of proteins and their amino acid building blocks, post-transcriptional modifications of proteins, structures and chemical properties of DNA and RNA, DNA interaction with small molecules, protein-nucleic acid interaction with emphasis on transcription regulation, post-transcriptional regulation, the structural basis for epigenetics, catalysis and its regulation, the structural and biochemical underpinnings of signal transduction, membrane proteins and proteins involved in immunity. Furthermore, graduate students will be introduced to the two major approaches utilized to determine the structure of proteins, nucleic acids and their complexes at atomic resolution. 3 semester hours.

Prerequisite: organic chemistry (one year), undergraduate biochemistry (one semester, but one year strongly recommended) or graduate-level biochemistry course (one semester), physical chemistry (one semester strongly recommended) or consent of the instructor.

GS030014 Metabolic Biochemistry

A comprehensive overview of human intermediary metabolism. Areas covered include: protein structure and function; enzymology; energy releasing and consuming processes; anabolic and catabolic pathways of sugars, lipids, nucleic acids, amino acids and specialized biomolecules; nutrition; and clinical implications of metabolism. Textbook-based reading assignments. Graduate students attend lectures with medical students, but meet separately in small group conferences to develop topics appropriate for research-track students, and are tested and graded separately from the medical students. Fulfills the GSBS molecular area breadth requirement. 4 semester hours.

Prerequisite: Introductory-level biochemistry course and consent of instructor. Limited to degree-seeking GSBS students.

GS030024 Topics in Biochemistry and Molecular Biology

An advanced-level survey of currently active areas in biochemistry and molecular biology, covering structure-function relationships of major classes of biomolecules and biological systems ranging from small molecules to macromolecular machines, subcellular organelles and organisms. Reading assignments from the current literature. Fulfills the GSBS molecular area breadth requirement. 4 semester hours.

Prerequisite: Introductory-level biochemistry course and consent of instructor.

GS030102 Current Methods in Molecular Research

This course provides an introduction to current methods for the study of biomolecules, including proteins and nucleic acids. Lectures focus on the theory, instrumentation, practical applications with specific examples, and the advantages, disadvantages and limitations of each method. Methods used primarily for the study of nucleic acids will be presented and will include protein expression systems, nucleic acid hybridization, PCR, genomic and cDNA cloning, antibody techniques, transfection, transgenic models, site-directed mutagenesis and enzymes as tools in molecular biology research. 2 semester hours.

Prerequisite: Consent of instructor.

GS010014 Biomedical Statistics

Course material will include the basic statistics usually found in introductory courses (t-tests, chi-square, contingency tables) but also will include a balanced emphasis on nonparametric methods, the analysis of variance and covariance through multi-way and hierarchical designs, and regression analysis from simple linear regression analysis through nonlinear methods. The use of personal computers and commercially available programs in the statistical analysis is emphasized in a computer laboratory. Presentation methods, graphics, and statistical word processing are also emphasized. Fulfills GSBS quantitative area breadth requirement.

4 semester hours.

Prerequisite: None.

GS040801 Current Topics in Genes and Development

This course is offered in the fall and spring semesters, and is headed by G&D faculty members. The fall semester is focused on developing scientific writing skills. Instruction is given to generate written research proposals and research manuscripts for publication. The spring semester is focused on developing scientific oral presentation skills. Students present seminars on their research and participate in the critique of presentations. The course meets once each week during each semester. All G&D students are advised to take these courses in their second year in preparation for taking the candidacy exam the following year. 1 semester hour.

Prerequisite: Students must be in their second year or later in the GSBS to take the class, OR consent of instructor.

GS040731 Seminar in Developmental Biology

Weekly ninety-minute meetings will involve student presentations on contemporary topics in developmental biology. The topics will be drawn from current literature and will emphasize genetic and molecular approaches. Enrolled students present a journal article from among those suggested or one of their own choosing (with approval), including background, summary and critique of the journal article. 1 semester hour.

Prerequisite: Consent of Instructor.

First Year Lab Rotations

Section Topics

- Purpose
 - Department & Program Check-In
 - Rotation Talks
-

Purpose

GSBS Ph.D. students must complete with a grade of pass, three 10-week tutorial laboratory rotations under the supervision of three different GSBS faculty members. The rotations serve the dual role of introducing students to a variety of research environments and allowing them the opportunity to select an advisor to supervise their future dissertation research.

Department & Program Check-In

When a student rotates in a G&D lab, they need to “check-in” with the department on the first day of their rotation, or prior to the first day if possible. The first step is to contact their advisor’s administrative support staff. They will explain the process for their department, including academic appointments, lab coats, email accounts, orientation, etc.

If a student is being supported from individual faculty funds, it is essential that they contact the support staff of their second and third rotation advisor about two weeks prior to the start of those rotations so that their funding (if applicable) can be switched to the appropriate account.

Rotation Registration Form

Students rotating in a G&D lab are asked to fill out the **“G&D Rotation Student Information”** form at the start of each rotation period. It is available on the G&D website or from the G&D Program Manager.

Rotation Talks

Rotation talks are a longstanding tradition of the G&D Program, the Department of Biochemistry & Molecular Biology and the Department of Genetics. These are short 8-minute talks given at the end of the fall, winter and spring tutorial periods by first-year students to present the findings of their rotation research project.

The talks are an important mechanism for students to gain experience in research presentation, as well as an opportunity for students to discuss findings with faculty and other students. All rotation students in the lab of a G&D faculty member are expected to participate in this program.

Rotation talk guidelines are given to all rotation students and their advisors a couple of weeks after the start of each tutorial period. This pamphlet provides preparation guidelines, submission deadlines and the date, time and location of the talks.

Committee Meetings

Section Topics

- The Three Ph.D. Committees
 - Choosing Committee Members
 - GSBS Academic Standards Committee Approvals
 - When to Form Advisory Committee
 - Composition of Advisory Committee
 - Purpose of First Advisory Committee Meeting
 - Examining Committee
 - Supervisory Committee
 - Scheduling Committee Meetings
 - Preparing for Committee Meetings
 - Committee Meeting Reports
-

The Three Ph.D. Committees

During your graduate career, you will assemble three separate committees. Each committee is formed for a specific purpose and can be composed of a different mix of faculty.

Advisory Committee

This committee will advise you as you begin your thesis project, through the time you finish your required coursework and are ready to take the candidacy exam. Your first advisory meeting should take place in the fall of your second year, or within four months of joining the G&D Program.

Examining Committee

This committee administers the candidacy exam, which you should take in the fall semester of your third year.

Supervisory Committee

After you advance to candidacy, this committee oversees your progress for the remainder of your graduate training. The members of your supervisory committee can be the same as your advisory committee.

Choosing Committee Members

A minimum of 2 G&D faculty members (including your advisor) must be on each of your 3 committees. The composition of these committees will be an important contributor to your overall success since the committees oversee all aspects of your training. Thus, it is important to choose faculty who can best help you achieve your academic and experimental goals.

Seek your advisor's help in this process since he/she is likely to know more of the faculty than you, especially as you start your studies. The GSBS staff is also helpful in this process. Other students, especially those in your lab, may have good advice as well.

Choosing Committee Members, continued

The GSBS has very specific requirements regarding the composition of your committees and all of them must be approved by the GSBS Academic Standards Committee. Visit their website for a description of each committee: http://gsbs.uth.tmc.edu/current_faqs.htm

Try to choose well-balanced committees that include experts in your research area, experts in the techniques and approaches you are likely to use, as well as outside members who will lend a fresh perspective to your ideas and approaches. Your “outside” members need to be outside your area of research but they can be from within the G&D Program and they can work on the same model organism as you. We suggest that you discuss your selection of outside members with your advisor.

Also, when considering committee members, take advantage of the expertise of faculty throughout the Texas Medical Center. Faculty from the Baylor College of Medicine, U.T. Health Science Center, University of Houston, Rice University and the Texas A&M University Institute of Biosciences & Technology (IBT) can serve on committees. Please note that no more than two non-GSBS faculty members are allowed to serve on a student committee.

In addition to considering the expertise and research interests of prospective committee members, it is also important to consider their availability. It is often hard to schedule committee meetings when all of the members have extremely busy schedules. Also, it is highly desirable to choose some members who will serve on all three of your committees, to lend some consistency to your graduate studies. These “long-term” committee members will become extremely familiar with you and with all aspects of your training. This is a factor that becomes critically important when soliciting letters of recommendation for post-doctoral applications, fellowship applications, or other career purposes.

GSBS Academic Standards Committee Approval (ASC)

The ASC requires that all forms submitted to it for evaluation be typed (not handwritten), e.g. Advisory/Supervisory Committees, Petitions for Candidacy, etc. These forms are all available on the “Forms” page of the GSBS website.

From the “FAQs” section of the GSBS website (6/9/09):

“All committees must be approved by the GSBS Academic Standards Committee, which meets the second Wednesday of every month. All faculty members who wish to serve on committees for Ph.D. students and M.S. students must serve at a faculty or staff level at their home institution. If a proposed member of any of the following committees is not a GSBS faculty member, the ASC has requested that a 2-3 page NIH-style biosketch be submitted to the OAA with the committee application.”

When to Form Your Advisory Committee

You should form your advisory committee within one month of joining the G&D Program and schedule your first meeting within four months of joining. For most students, the first advisory meeting will be held during the fall semester of the second year. Remember, GSBS has very specific guidelines governing the composition of all three committees, and the Academic Standards Committee must approve your proposed members, along with the G&D Program Director. Instructions on forming all committees are in the “Commonly Used Forms” section of the GSBS website: http://gsbs.uth.tmc.edu/current_forms.htm

Composition of Advisory Committee

Advisory Committee guidelines from the “Policies & Procedures/Student Committees” section of the GSBS website (6/9/09):

- The Advisory Committee consists of at least five Faculty members, including the student’s Advisor, chosen to assure representation by faculty members competent in the student’s major area of research.
- At least one member must have research interests which lie outside the student’s major discipline.
- All of the members may not come from the same department or the same GSBS Program.
- The same person may meet all “outside member” requirements.
- Individuals outside the GSBS Faculty may serve on a student’s committee when their particular areas of expertise are not represented on the GSBS Faculty, but there may be no more than two such members on the committee.
- If four of the members are from the same department/Program, the fifth member outside the department/Program must be a GSBS faculty member.
- If two members of the committee are non-GSBS faculty, the other three GSBS faculty members may not be from the same department or Program.

Purpose of First Advisory Committee Meeting

Your first advisory meeting is a time for you and your committee to get to know one another. You should schedule it during the fall of your second year, before you register for the spring semester. This is very important so that your committee can meet you, advise you on courses and provide input on your proposed research project. See page 22 for suggestions on how to schedule committee meetings.

While it is not necessary to have data to present at your first committee meeting, your committee will expect you to make a short 20-30 minute presentation on the background of your project, your research plans for the next six months, and long term goals. The emphasis should be placed on your plans for the next six months. It is highly recommended that you review your presentation and slides with your advisor prior to your committee meeting.

What to bring to your first advisory meeting (*enough copies for all committee members*)

- Your CV or NIH-style biosketch that includes your prior education, degrees received, honors received and any publications you have. *See Appendix for sample biosketch form.*
- Rotations you completed.
- A list of all GSBS classes you have taken and your grades.
- GSBS courses you plan to take.
- A written summary of your proposed research plan (2-3 pages). This should include an introduction, a simple description of your plan, and your goals for the next six months. Your summary should be sent to your committee members at least five days before the meeting. Remember, it is not necessary to present data at this meeting.
- A copy of your first annual G&D “Program Checklist” that you submitted with your annual research report. This form is on the G&D website.
- Your presentation slides.

At subsequent meetings, you should always provide a written summary of your research and future plans. It is helpful to remind the committee how long you have been a GSBS graduate student, and to inform them of any new publications, courses, etc.

Examining Committee

You will need to form your examining committee before petitioning to take your Ph.D. candidacy exam. The G&D Program Director must approve your examining committee, and then you must get approval from the GSBS Academic Standards Committee. Keep in mind the following requirements when selecting your members:

- Your committee must include five faculty members, with at least two who have not served on your advisory committee.
- At least two of the five must be G&D faculty members (**this is a G&D requirement, not a GSBS requirement**).
- **The chair of your examining committee must be a member of the G&D faculty.**
- All of the members may not come from the same department or the same GSBS program.
- One member must be from an area of research outside your primary area of interest.
- Individuals outside the GSBS faculty may serve on a student's committee when their particular areas of expertise are not represented on the GSBS faculty, but there may be no more than two such members on the committee.
- If four of the members are from the same Department/Program, the fifth member outside the Department/Program must be a GSBS faculty member.
- Your Ph.D. advisor is not allowed to be a member of your examining committee, or even in the room.

Supervisory Committee

From the "Requirements for the Ph.D." section of the GSBS website (6/9/09):

"Within three months of the pass or conditional pass of the candidacy examination, the student, with the assistance of the Advisor, proposes a Supervisory Committee and submits the form to the ASC for its approval. Upon approval by the ASC and the Dean, the Supervisory Committee is notified of its appointment and informed of any conditions placed on the student by the Examining Committee. If the student receives a conditional pass, the Chair of the Examining Committee must serve as a member of the Supervisory Committee, at least until the conditional pass has been resolved."

Supervisory Committee Composition

Your supervisory committee can have the same members as your advisory committee, depending on the focus of your project. These guidelines are from the "Policies & Procedures/Student Committees" section of the GSBS website (6/9/09).

- The Supervisory Committee consists of at least five Faculty members, including the student's Advisor, chosen to assure representation by faculty members competent in the student's major area of research.
- At least one member must have research interests which lie outside the student's major discipline.
- All of the members may not come from the same department or the same GSBS Program.
- The same person may meet all "outside member" requirements.
- Individuals outside the GSBS Faculty may serve on a student's committee when their particular areas of expertise are not represented on the GSBS Faculty, but there may be no more than two such members on the committee.
- If four of the members are from the same department/Program, the fifth member outside the department/Program must be a GSBS faculty member.
- If two members of the committee are non-GSBS faculty, the other three GSBS faculty members may not be from the same department or Program.

Scheduling Committee Meetings

Your committee provides you with a powerful set of allies. Five expert scientists have dedicated time specifically for you. The purpose of your committee meeting is to get feedback on your experimental approaches, interpretations, and goals. Often students delay scheduling a meeting because they feel they do not have enough new data. Such delays are counter-productive to graduation!

Often the time when a committee can be most helpful is when things are going slowly or are not working. Regular meetings with your committee will keep them abreast of your goals and will give them an opportunity to suggest new approaches, experiments, etc. that can move your work forward. Delaying committee meetings will only slow your progress.

Beginning in the fall of your second year, you should schedule committee meetings every six months. Below is a recommended meeting schedule for the duration of your graduate education.

Year 2

September – Oct.	Advisory Meeting #1
March – April	Advisory Meeting #2 – <i>discuss taking your candidacy exam</i>
June – August	Advisory Meeting #3 – <i>a special candidacy exam advisory meeting to obtain approval to take the candidacy exam, to discuss the 3 candidacy exam abstracts submitted earlier, and to get the candidacy exam research proposal topic. No formal research presentation is required.</i>

Year 3

October	Ph.D. Candidacy Exam
March – April	Supervisory Meeting #1

Year 4 and Beyond

September – Oct.	Supervisory Meeting
March – April	Supervisory Meeting

How to Contact Your Committee

The best way to contact your committee members and set up a meeting is through email. G&D faculty email addresses are listed on page three of this handbook. They are also available on the G&D and GSBS websites. Approximately two months prior to the time you want to schedule the meeting (the earlier the better!), email each committee member and ask for his/her schedule within a two-week time frame. Often, an attached Excel spreadsheet or calendar, which can be marked for availability, is helpful. Keep in mind that meetings during holiday periods and the summer are more difficult to schedule. See the sample note below.

Sample Email to Faculty

Dear Dr. _____,

Thank you for agreeing to serve on my Advisory [Examining/Supervisory] committee. I would like to schedule my first [next] meeting between October 1st and October 15th. Would you please check your schedule and let me know when you will be available during that period?

*Thanks again,
Your name*

Scheduling Committee Meetings, continued

Scheduling Difficulties

If a faculty member does not reply within one week, follow up with a phone call or a visit to his or her office. If you cannot find a time in your original two-week period when everyone can meet, adjust the time frame accordingly and send out another round of emails.

If it turns out to be very difficult to find a time when all committee members can meet, it is possible to hold your meeting with one member absent. However, be sure to first ask your advisor if this is OK. If it is, then check with the person who can't attend to make sure it is OK with him or her to miss the meeting. After the meeting, be sure to check back with the missing member to discuss what happened. The exception to this is for your candidacy exam and thesis defense, at which all committee members should be present. Note – the GSBS has guidelines regarding committee member substitutions when necessary.

Remember, the earlier you begin scheduling, the more likely you will be able to find a time when everyone is available. It is unrealistic to wait until a few days before you want to have a meeting and expect to find a time when five busy people are all available.

Reserving a Meeting Room

Contact your advisor's support staff or a departmental administrative assistant to reserve a room for your meeting. While most committee meetings should take 1–1.5 hours, reserve a room for 2 hours to provide ample time for set-up before the meeting and a discussion after your presentation. *See Appendix for a list of BSRB rooms and who to contact to reserve one.*

Meeting Confirmation and Reminders

After the room is reserved, send another email to your committee members to confirm the date, time and room number for your committee meeting. Also send a reminder email to your committee one week before the meeting with your research summary attached (see below), and then a final reminder one day before.

Preparing for Committee Meetings: What to Do & What to Expect

One week before your committee meeting, give each committee member a 2-3 page written research summary along with the meeting date, time and room number, as noted above.

Written Research Summary

Your summary should begin with a specific aims page, which includes a short introduction to your project, a statement of your hypothesis, and a description of your specific aims. The GSBS has posted a Specific Aims template in the candidacy petition file, in the forms section of their website. Although the template specifically states one page only, for committee meetings your specific aims can be two to three pages.

For your first advisory meeting, as stated previously, a simple description of your proposed research plan should follow the introduction. For subsequent meetings, experiments attempted or completed in the past six months should be briefly summarized. In all cases, the research summary should end with a list of realistic goals for the next six months, and a comparison to the goals you stated at your previous meeting.

Remember, your goals are not contracts; they are simply to help you plan the next six months. Do not feel that you must complete all the goals listed at one meeting before scheduling the next. Your committee expects that unforeseen problems or changes in your research directions will occur.

Preparing for Committee Meetings, continued

Presentation Guidelines

For each committee meeting, you should prepare a 30-minute talk summarizing the background of your project, research goals and progress. You can review your presentation with your advisor prior to the meeting.

The content of the talk should largely follow the written research summary submitted to the committee. Review the specific experiments you have done since the last meeting and end with your goals for the next six months. Keep in mind that you do not have to present every experiment you have performed or every project that you have started. Keep the presentation focused on the major goals for your thesis.

During your presentation, committee members may ask for clarification of your experimental approach or your results. Make good slides or overheads for your presentation. Ask your advisor for advice on making the slides. All data should be clearly labeled and diagrams outlining the experiment are often helpful.

After your presentation, the committee will likely ask additional questions to initiate a discussion of the quality of the data, your interpretations, alternative approaches, etc. You should take notes of experiments, alternatives, criticisms, etc. offered by the committee during this time.

If you prepare your presentation well and are familiar with your research topic, most committee meetings should take 1 to 1.5 hours.

Committee Meeting Reports

Within one week of each meeting the Student and their Advisor (Chair of the Committee) should complete the GSBS "Report of Advisory/Supervisory Committee Meeting" form, sign it, and submit it to the Office of Academic Affairs, GSBS, 3.8344 BSRB. The student should complete their section and sign the form prior to the Advisor completing their portion and signing the form. A copy of this report should be sent to each member of the Committee and to the student. If either the student or Advisor needs additional space to add comments, they should be typed on a continuation page.

This form is on the GSBS website under "Committee Forms" at the top of this page: http://gsbs.uth.tmc.edu/current_forms.htm

This report is the only official record of your committee meeting, so it is very important that the GSBS receives the report in a timely manner. If you do not receive a copy of the report within one week of your committee meeting, ask your chair when it will be available.

G&D Ph.D. Candidacy Exam

Section Topics

- Overview
 - Petition for Ph.D. Candidacy Exam
 - Exam Timeline
 - Examining Committee
 - Current Topics in G&D – Spring Semester
 - Reserving Room and Study Groups
 - Off-Topic Abstracts
 - Written Research Proposal
 - Examination and Outcomes
 - GSBS Evaluation Rubrics
 - M.S. Bypass
 - GSBS Candidacy Forms
-

Overview

In order to advance to candidacy for a Ph.D. degree, you must pass the G&D candidacy exam. The exam consists of writing an NIH style original research proposal and an oral defense of the proposal. The subject of the research proposal is selected by your advisory committee from three, one-page, off-topic abstracts you write. *See page 29 for a definition of “off-topic”.*

A GSBS-approved examining committee will oversee the process and determine if you pass the exam. Prior to forming your examining committee, you must complete all required coursework and your advisory committee must recommend that you are ready to take the candidacy exam.

The G&D candidacy exam (oral defense) must be held within 8 weeks of your final advisory committee meeting, where you receive the topic for your candidacy exam research proposal.

M.D./Ph.D. students and D.D.S./Ph.D. students in the G&D Program are required to take the G&D candidacy exam.

Petition for Ph.D. Candidacy Exam

You must petition the GSBS Academic Standards Committee (ASC) for approval to take the candidacy exam. Remember, all forms submitted to the ASC must be typed. Prior to seeking ASC approval, you must obtain approval from your advisory committee to take the exam, write your summary of your dissertation research (see petition form), and have completed all your required GSBS coursework.

You are required to submit your petition to GSBS no later than one week prior to the ASC meeting; ASC meetings are held the second Wednesday of each month. The candidacy petition, related forms and information are posted on the GSBS website under “Petition for the Ph.D. Candidacy Examination”: http://gsbs.uth.tmc.edu/current_forms.htm. See next page for a complete list of posted documents.

Petition for Ph.D. Candidacy Exam, continued

Petition Documents on GSBS Website

- “Petition for the Ph.D. Candidacy Exam” (signed by all advisory committee members).
- “Template for Specific Aims Page for Petitions for Candidacy” (suitable for ASC approval, this will help you prepare your specific aims for your summary of your dissertation project that you will submit with your petition).
- “Ph.D. Examining Committee” (signed by all examining committee members and the G&D Program Director).
- “Code of Conduct and Pledge Form”

Summary of Proposed Dissertation Research

You need to prepare a one-page summary of your proposed dissertation research for your final advisory meeting, which is where you will request approval to take the candidacy exam (summer meeting). You will also attach this summary to your Petition for the Candidacy Exam that you will submit to the Academic Standards Committee. It should include a brief background, a clearly stated hypothesis, specific aims and the methods by which the aims will be carried out. Guidelines for this summary are in the GSBS “Template for Specific Aims Page for Petitions for Candidacy”. Please note that this summary is separate from the three off-topic abstracts (*see page 29*).

Exam Timeline

The timeline for taking the candidacy exam depends on the term in which you matriculate at GSBS. There are two deadlines to keep in mind: (1) the deadline to petition for Ph.D. candidacy, and (2) the deadline to take the exam. These deadlines are GSBS requirements, not G&D requirements. Please note that you cannot take the exam until you have completed all GSBS course requirements.

In addition to the GSBS deadlines, G&D has two program exam deadlines:

- Your exam must be held within eight weeks of your final advisory meeting where the research proposal topic is selected (see next page). The date of this meeting will depend on the term you first enrolled at GSBS.
- Your main written research proposal must be submitted to the exam committee two weeks in advance of your candidacy exam date.

GSBS Candidacy Petition Note

From the “Requirements for the Doctor of Philosophy Degree” on the GSBS website (6/9/09), *“students who matriculated prior to the Fall term of 2008 must petition for Ph.D. candidacy before the end of the first semester of the third year of admission to the Ph.D. program (before the end of the second year if the student previously has earned an M.S. degree or one year after an M.S. has been completed at GSBS). Students who matriculated in the Fall 2008 term or thereafter must petition for Ph.D. candidacy by the end of the second year following matriculation.*

The “*end of the second year following matriculation*” means the end of the 6th term at GSBS. There are three terms per year in the GSBS calendar; Fall, Spring, Summer. For example, if you matriculate in the Fall 2008 term or in the Fall thereafter, you must petition by the end of the summer of your second year, and take your exam by the end of the Fall of your third year.

Students Who Matriculate in Fall 2008 Term or in the Fall Thereafter

GSBS Candidacy Petition Deadline: By end of Summer Term after your second year (6th Term).

GSBS Exam Deadline: By end of Fall Term of your third year, or earlier.

Preparation Timeline: By the end of your 6th term (Summer), submit your three, off-topic abstracts to your advisory committee, have your final advisory meeting, and submit your Petition for Candidacy to GSBS for review at the September ASC meeting. You should submit your three off-topic abstracts to all committee members at least one week in advance of your final advisory committee meeting. You are not expected, nor required, to make a formal presentation of your dissertation project at this final advisory meeting just prior to the exam. This meeting is specifically for the purpose of selecting the abstract for your research proposal.

Students Who Matriculate in Summer 2009 Term or in the Summer Thereafter

GSBS Candidacy Petition Deadline: By end of Spring Term of your second year (6th Term).

GSBS Exam Deadline: By end of Summer Term after your second year, or earlier.

Preparation Timeline: By the end of your 6th term (Spring), submit your three, off-topic abstracts to your advisory committee, have your final advisory meeting, and submit your Petition for Candidacy to GSBS for review at the June ASC meeting. You should submit your three off-topic abstracts to all committee members at least one week in advance of your final advisory committee meeting. You are not expected, nor required, to make a formal presentation of your dissertation project at this final advisory meeting just prior to the exam. This meeting is specifically for the purpose of selecting the abstract for your research proposal.

Students Who Matriculate Prior to Fall 2008 Term

GSBS Candidacy Petition Deadline: By end of Fall term of your third year. **The G&D Program recommends you petition by the end of the Summer after your second year.**

GSBS Exam Deadline: By end of Spring term of your third year. **The G&D Program recommends that you take your exam in the Fall of your third year.**

Preparation Timeline: By the end of the summer after your second year, the G&D Program recommends that you submit your three, off-topic abstracts to your advisory committee, have your final advisory meeting, and submit your Petition for Candidacy to GSBS for review at the September ASC meeting. You should submit your three off-topic abstracts to all committee members at least one week in advance of your final advisory committee meeting. You are not expected, nor required, to make a formal presentation of your dissertation project at this final advisory meeting just prior to the exam. This meeting is specifically for the purpose of selecting the abstract for your research proposal.

Examining Committee

Your examining committee must first be approved by the G&D Program Director and then by the GSBS Academic Standards Committee. Paperwork should be initiated early to avoid unnecessary delays in forming this committee. Keep in mind the following requirements when selecting your members:

- Your committee must include five faculty members, with at least two who have not served on your advisory committee.
- The chair of your examining committee must be a member of the G&D faculty.
- At least two of the five must be G&D faculty members (this is a G&D requirement).
- All of the members may not come from the same department or the same GSBS program.
- One member must be from an area of research outside your primary area of interest.
- Individuals outside the GSBS faculty may serve on a student's committee when their particular areas of expertise are not represented on the GSBS faculty, but there may be no more than two such members on the committee.
- If four of the members are from the same Department/Program, the fifth member outside the Department/Program must be a GSBS faculty member.
- Your Ph.D. advisor is not allowed to be a member of your examining committee, or even in the room.

Current Topics in Genes & Development – Spring Semester

The spring semester of Current Topics in Genes and Development is focused on developing scientific writing skills. All G&D students are advised to take this class in the spring of their second year in preparation for taking the candidacy exam the following year. This class is required for students who enter GSBS on or after August 2006.

Reserving a Room for the Exam

You will need to schedule a room for a four-hour block of time for your candidacy exam (this includes set-up time). There is a list of Mitchell BSRB conference rooms and information on how to reserve one in the Appendix.

Study Groups

Over the past few years, an informal “candidacy study group” tradition has developed among G&D students. This group is student-organized and typically forms during the summer before taking the exam. Participation is voluntary. Every study group is different and approaches the challenge of preparing for the exam differently. If you would like to form a candidacy exam study group, please see the Program Manager for a list of potential members.

Preparation of Three ‘Off-Topic’ Abstracts

Abstracts and Selection of Written Research Proposal Topic

Students will write three one page “off topic” abstracts (*see next page*) that could be developed into a full written proposal. The abstracts will be evaluated by the student’s advisory committee. This committee will select the abstract that will best serve as a subject for the main written proposal. The three abstracts will be considered (along with other factors) at the final advisory committee meeting in deciding if the student should petition for candidacy. Students should do sufficient reading on the three topics so as to be certain that they can develop a full proposal based on the abstract selected. It is recommended that students begin thinking about abstract topics during the second year. This can include reading reviews in scientific journals such as Cell, Science and Nature, and thinking about scientific questions that are outside the student’s specific area of research.

Abstract Format

The three abstracts will each be one page long (plus references) and will include background, significance and an original experimental hypothesis addressing a current gap in knowledge; they will not include specific aims. The hypothesis should be the student’s own idea and not taken from any other person. It should be possible for the student to develop specific aims and an original research plan from the abstract that will be used in the main proposal.

What is “Off-Topic”?

The topic of each abstract and the main proposal should be different from the students planned dissertation work. The goal is to allow the student to devise their own original research plan and to learn about other areas, including areas completely unrelated to their mentor’s scientific objectives.

The topic must be unrelated to the student's dissertation project. The central hypothesis and specific aims should NOT:

- Include work the student has already done or is planned in the dissertation project.
- Overlap projects the student completed as part of a previous thesis or dissertation (if you have another degree).
- Overlap projects that are being worked on by others in the mentor’s lab, or overlap projects known to be planned by the mentor.
- Be based on trivial variations of published work or of the student’s dissertation project (i.e. the same experiments in another organism or the exact same approach applied to a different gene).
- Simply repeat experiments that have already been published or presented publicly by others.

If an abstract or proposal is deemed by your advisory committee to be “not off-topic” the student will be required to submit another one. If students have questions about whether a particular idea for a summary is “off-topic” they can ask the G&D program director and/or members of their advisory committee before starting on it.

Guidelines for the Written Research Proposal

The student will write a full 10-15 page NIH style research proposal for a project of 2-3 years that may involve between 1-to-3 persons (small lab) based on the selected abstract. This proposal should be based entirely on the students own ideas without any input about the research plan from the advisor. The written proposal will be given to the exam committee two weeks in advance. At the same time, the proposal should be submitted to the GSBS Office of Academic Affairs for analysis by Turnitin. (The GSBS reserves the right to check proposals using other databases as they become available). The written proposal shall consist of:

- **Abstract.** The abstract should be one to two pages, and should clearly state a hypothesis, and specific aims that will experimentally test the hypothesis.
- **Background and Significance.** This should be four to five pages. This section should introduce the reader to the topic, experimental system and identify where there are gaps in our knowledge. This section should also form the foundation on which the experimental plan will be developed.
- **Research Design and Methods.** This should be five to seven pages in length. This section should be a detailed description of the experiments that will be performed. This should include experimental design (without the need, in most cases, to include buffer conditions, etc.), how data will be collected, interpreted and what expected outcomes are. In addition, the student will need to provide a rationale for the aim and alternative approaches to obtain results should the student's first approach fail.
- **Literature Cited.** This section is not included in the page count. The student should cite the literature used in the development of the proposal. All citations should be complete, containing authors, article title, journal name, volume and pages.
- **Figures, Images, Schematic Drawing.** Students are encouraged to use figures in their proposals wherever they feel it will help the reader to better understand the application. Images taken directly from others should be used only when necessary to illustrate previous findings and should be accompanied by a clear citation of the source. Schematic diagrams should be generated by the student.

The proposal should be a maximum of 15 pages. The format of the proposal follows GSBS guidelines posted on their website (<http://gsbs.uth.tmc.edu/policies/phdreqs.html>); it is essentially a shortened version of an NIH R01 Research Plan. As you will see from the tips below, you are not required to produce preliminary data in support of your proposal. However, you are expected to provide evidence (from the literature or your own work) that the approach to be used is feasible.

Assistance Guidelines

The proposal should be prepared by the student without assistance from any faculty member. However, after you have prepared your first draft, you may seek comments from senior students and/or postdocs from your lab and/or other labs. It is suggested that you give them a copy of your proposal to review approximately three weeks before your oral exam so that you will have enough time to make revisions and then distribute it to your committee two weeks prior to your exam.

Proposal Writing Tips

GSBS Writing Tips

General tips for formatting a research proposal are available on the GSBS website:
<http://gsbs.uth.tmc.edu/policies/proposal.html>

M.D. Anderson Scientific Publications Writing Tips

There is an outstanding, online proposal-writing resource called “Writing Effective Grant Proposals” on the M.D. Anderson Scientific Publications office website. A link to this site is provided via the Candidacy section of the G&D website:

www.mdanderson.org/departments/genesdev

Sample Proposals

We recommend that you look at past NIH grant proposals to help you prepare. Two NIH proposals are posted in the “Candidacy” section on the G&D Intranet site for your reference.

A link to this site is provided via the Candidacy section of the G&D website:

www.mdanderson.org/departments/genesdev.

The Examination and Possible Outcomes

Evaluation of Written Proposal

At the start of the examination the student will be excused from the room for 10 to 15 minutes. During this time the faculty will discuss the written proposal and determine if the document is suitable enough to continue with the oral examination. A satisfactory proposal is one that is well written, and contains all the components described previously.

If the written proposal is satisfactory the student will be asked to go ahead with an oral defense of the research plan at the same meeting.

Note that it is possible to receive a conditional pass based on some deficiency in the proposal that would not prevent going ahead with the oral examination. One example would be if the student does not give sufficient background and significance to define why the proposed experiments will advance the field. This could easily be corrected by a rewrite and the examination could continue.

If the proposal is not deemed suitable, then the student will not present an oral defense until the proposal is revised. This is considered a “retake”. The committee will discuss with the student the deficiencies and how they can be corrected. The chair will prepare a written summary of the committee’s recommendations. This report will be provided to the student within two days. The time allowed for revision will be decided by the committee but will be a maximum of three weeks. During this period the student may seek advice from the exam committee members. If the revised proposal is found to be unsatisfactory the student will have failed the written exam.

Oral Defense of the Written Proposal

The student will make a 30-minute oral presentation describing the proposed project, during which he/she can expect interruptions only for questions of clarification. The committee will then ask questions about the research plan, alternate strategies, significance and background

Oral Defense of the Written Proposal, continued

relevant to the research proposal in order to evaluate the student's depth of knowledge on the subject. Following questions focused on the research proposal, more general questions that are intended to test the depth and breadth of the student's knowledge may be asked. Your Ph.D. advisor is not present at the oral exam.

You should practice giving your oral presentation to other students and/or postdocs at least a week or two before your exam.

Specific areas you should be prepared to address at your oral defense

- The existing body of knowledge on the subject of your proposal, including work done in different experimental systems relevant to the project.
- Details of the experimental techniques to be used for the proposed research. If a technique is cited in the proposal, you should be able to explain it in detail, and draw a diagram of the expected results.
- A clear statement of the central hypothesis of the proposal.
- Likely outcomes of the proposed experiments and their interpretation.
- Difficulties and limitations of the proposed procedures.
- Alternative approaches to achieve the specific aims.
- The biological significance of the project.
- Relevant details of any literature cited in the proposal.
- Future directions of the proposed research beyond the specific aims.

Examination Results

At the end of the exam, the committee will discuss the student's performance and inform the student of the outcome in both the written and oral components. Unconditional Pass, Conditional Pass, Retake and Fail are all possible outcomes for each exam.

Grading of Exam

After the question session, your committee will elect to give you one of four possible grades for your oral exam – Unconditional Pass, Conditional Pass, Retake, Fail. The exam may seem intimidating, but keep in mind that advisory committees give their approval for students to take their exams based on their belief that the students are adequately prepared and will pass it. Conditional and Unconditional Passes are the most common outcomes. Conditions attached to a Conditional Pass usually involve rewriting part or all of the proposal, writing a literature report on an area of deficiency or enrolling in a course specified by the committee that will benefit the student's education. A student receiving a grade of Retake is required to take the exam again. Students always perform much better on the second try.

According to GSBS policy, "Failure of the [candidacy] examination means the Examining Committee has decided that the student does not have the potential to complete the Ph.D. program, and the ASC will recommend to the Dean that the student be dropped from the Ph.D. program. The committee has the option of allowing the student to continue towards a terminal M.S. degree, or recommending that the student not be allowed to continue in a degree program. Subsequent to dismissal, the student may re-apply to GSBS whereupon the application will be considered in competition with other applications pending at the time."

GSBS Rubric for the Evaluation of Exam Performance

Your examining committee will provide you with a completed rubric for the evaluation of your candidacy exam. The instructions below are copied from the GSBS form:

RUBRICS FOR EVALUATION OF CANDIDACY EXAM PERFORMANCE AND M.S./PH.D. DEFENSES

The attached [see next page] evaluation rubrics have been formulated and approved for use by the GSBS standing committees in an effort to assist students and faculty alike. The rubrics should be of assistance to students since they will provide guidelines as to what will be expected of students by faculty during their candidacy exams and defenses. The rubrics should be of assistance to faculty in that they will provide guidelines for assessing student performance during the candidacy exam and defense. They are by no means the only criteria by which students may be assessed, and they are not intended to specifically dictate to faculty how to assess student performance.

The distribution and use of the rubrics will be as follows:

- 1. The rubrics for the Evaluation of Candidacy Exam performance should be provided to:
 - a. Ph.D. students and their Advisory Committee faculty when the Advisory Committee is approved by the GSBS Academic Standards Committee (ASC), and*
 - b. to the student's Examination Committee when the ASC approves the student's Petition for Ph.D. candidacy.**

After the Ph.D. Candidacy Exam, the completed rubrics should be submitted to the GSBS Office of Academic Affairs (OAA) when the Examination Committee submits the Results of Examination forms. The Examination Committee may elect to submit these as one per Examination Committee member, or may elect to submit one form for the entire Examination Committee.

- 2. The rubrics for the Evaluation of M.S./Ph.D. defense performance should be provided to:
 - a. M.S. and Ph.D. students and their Supervisory Committee faculty when the Supervisory Committee is approved by the ASC.**

After the defense, the completed rubrics should be submitted by the Supervisory Committee to the OAA when the Results of Defense are also submitted to the OAA.

Students and faculty alike should be assured that the design of the rubrics, i.e. using a Likert scale of assessment (strongly agree, agree, etc.), is primarily for internal GSBS usage during accreditation processes that require monitoring student outcomes using these types of methods. The final decisions regarding the candidacy exams and the defenses will still be decided by the faculty using methodologies currently in place. The rubrics are therefore intended to be advisory.

EVALUATION OF CANDIDACY EXAM PERFORMANCE (A GSBS Form)

Student Name: _____

Faculty Evaluator: _____

Date: _____

Strongly Agree	Agree	Disagree	Stongly Disagree	Rubric
				Demonstrated competency in knowledge in the quantitative core area.
				Demonstrated competency in knowledge in the molecular core area.
				Demonstrated competency in knowledge in the cellular core area.
				Demonstrated competency in knowledge in the systems core area.
				Demonstrated command of the general knowledge required of a biomedical scientist
				Had command of the literature in the field of study being examined.
				From the literature, was able to identify questions that need to be answered to advance his/her field
				Formulated a clear hypothesis concerning at least one of the questions from the literature.
				Formulated clear, focused specific aims that led to experiments to test the hypothesis.
				Understood the methods that would be needed to carry out the experiments in the proposal.
				Was able to display critical thinking, could design experiments in a rational way, and could identify the strengths and weaknesses of his / her experimental design.
				Was able to effectively communicate in writing and orally the design and possible interpretation of the proposed research.
				Was able to answer questions about the proposed research project in a professional manner.
				Was able to answer questions concerning anticipated experiments, potential pitfalls of the overall plan, and projected contingency plans to achieve the specific aims.

M.S. Bypass

Once you successfully pass your candidacy exam, your examining committee may elect for you to bypass the M.S. degree. This means that you will proceed directly on to your post-candidacy Ph.D. studies without writing and defending an M.S. thesis. (*see the GSBS online document “Requirements for the Doctor of Philosophy Degree” for more information*).

GSBS Candidacy Forms

The various GSBS forms required for the candidacy exam include the following. All are available on the GSBS website at **http://gsbs.uth.tmc.edu/current_forms.htm**

- Petition for Ph.D. Candidacy Examination
- Template for Specific Aims Page for Candidacy Petition
- Ph.D. Examining Committee Form
- Candidacy Exam Results Report Form
- Code of Conduct and Pledge Form

Program Events and Activities

Section Topics

- Blaffer Seminar Series
 - Annual Retreat
 - Rotation Talks
 - Thesis Defense Talks
 - Student Dialog Series
 - Directors' Roundtable & Student Focus Group
 - G&D Bioinformatics Workshops
 - Fall Faculty/Student Dinner and Other 'Mixers'
 - Monthly Faculty Seminar Series
 - Texas Medical Center Seminars
 - Department of Genetics Research Exchange Seminar
 - Department of Biochemistry and Molecular Biology Research Seminar and Journal Club
-

Blaffer Seminar Series

Each week from September through May, an internationally recognized scientist is invited to speak and present their latest results at the Blaffer Seminar Series. All G&D students are required to attend these seminars.

Blaffer Lunches

G&D students are encouraged to have lunch with the invited speakers at least twice a year. The lunches are a great opportunity for students to meet with other scientists and discuss research interests in a small group setting (postdoctoral fellows also participate). The lunches also provide the opportunity to inquire about future postdoctoral positions in the speaker's lab or department. Email lunch invitations are sent approximately two weeks prior to the seminar.

Student-Hosted Blaffer Speakers

G&D students are invited each year to nominate, vote on, and host one Blaffer speaker.

Annual Retreat

The Genes & Development Program, along with the Department of Biochemistry & Molecular Biology and the Department of Genetics, sponsors an annual scientific retreat each spring. All G&D students are expected to participate in this scientifically important event that students, postdocs, faculty and scientific staff attend.

To foster scientific interactions within the program, the retreat is divided into lab research talks and poster sessions, in addition to a limited amount of free time to enjoy recreational activities. All graduate students are expected to prepare and present posters, which are judged by a group of faculty. Winners in three categories receive cash awards (pre-candidacy, post-candidacy and postdoctoral fellows).

The retreat offers students an outstanding opportunity to learn about the science going on in the program labs, and to meet and get to know each other, the faculty, and other researchers in a relaxed and friendly setting.

Rotation Talks

All G&D students are expected to attend the first year student rotation talks, which are given at the end of the fall, winter and spring tutorial periods.

Thesis Defense Talks

All G&D students are expected to attend the thesis defense seminars by graduating G&D students. This is a chance to cheer for your successful colleagues and learn what is expected for a Ph.D.

G&D Student Dialog Series

This student-driven program is for G&D students to talk about careers, scientific topics and other points of interest through informal discussion with invited guests from the local scientific community. G&D students select the guest speakers and topics. Started in 2004, the Dialogs are scheduled three to four times a year. Previous guests have shared their career experiences in technology transfer, biotech, teaching at a small liberal arts college, consulting, scientific/medical writing; the students also met with the President and Provost of M. D. Anderson. All students interested in organizing future Dialogs are encouraged to check with the Program Manager or Director.

Directors' Roundtable and Student Focus Group

Twice each year, the G&D Director and Co-Director meet with students over lunch to discuss suggestions and concerns, and answer questions about the program. Student feedback is essential to strengthen the program for everyone and all students are encouraged to participate. Prior to the roundtable, a student-led focus group often meets to discuss issues to bring to the meeting.

G&D Bioinformatics Workshops

Hands-on workshops led by G&D students on publicly available bioinformatics databases. Each workshop covers a single database and includes hands-on group instruction and individual help.

Fall Faculty/Student Dinner and Other Mixers

Each fall the G&D Program hosts a dinner for G&D faculty and students, and first-year GSBS students. This annual event provides an opportunity for faculty and students to talk and mingle outside of the laboratory environment. The G&D research achievement awards and student service award are presented at this dinner.

The G&D Program organizes other social events throughout the year that have in the past included ice cream socials, lunar new year teas and student potluck lunches.

Texas Medical Center Seminars

G&D students are encouraged to take advantage of the rich scientific resources at the Texas Medical Center (TMC) by attending seminars and events at M. D Anderson and other TMC institutions. Find out about upcoming scientific talks and events via two online publications – Research Weekly and the Baylor Green Sheet.

Research Weekly

Research Weekly is M. D. Anderson's weekly email listing of scientific talks presented at M. D. Anderson. It is sent every Thursday with a list of the following week's events. To subscribe, send an email to researchweekly@mdanderson.org and ask to be added to the distribution list.

Baylor Green Sheet

The Baylor Green Sheet is a weekly online listing of scientific seminars in the Texas Medical Center (not just Baylor). To subscribe, send an email to the calendar administrator, mjames@bcm.edu and ask to be added to the "Green Sheet" listserv. Be sure to include your email address in the body of your email.

Department of Genetics Weekly Research Exchange Seminar

Each week from September to May, postdoctoral fellows in the Department of Genetics present a formal presentation of their own research. The purpose of the Research Exchange Seminar is to increase individual research knowledge and provide training opportunities for oral presentation of data. Genetics students are strongly encouraged to attend this seminar series.

G&D students in other departments are welcome to attend the Research Exchange Seminar.

Department of Biochemistry & Molecular Biology Weekly Research Seminar and Journal Club

Weekly Research Seminar: This one hour, weekly departmental program is for students to present their most recent work to the Department. All students in the Department of Biochemistry and Molecular Biology labs are required to attend.

Journal Club: Each week, a graduate student or postdoc selects and reports on a recent journal article outside their area of research. The purpose is to expand individual research knowledge and encourage interaction between numerous specialties in research. All students in the Department of Biochemistry and Molecular Biology labs are encouraged to attend.

When students present their research at the Research Seminar and/or lead a departmental journal club meeting, those presentations count toward the five public presentations that students are required to give prior to graduation.

G&D students in other departments are welcome to attend both of these programs.

Awards

Section Topics

- Overview
 - G&D Awards
-

Overview

The G&D Program, GSBS and M. D. Anderson offer many awards for students throughout the year. The G&D awards are listed below; see the Appendix for a comprehensive list. Award announcements are posted on G&D bulletin boards in BSRB and on the program calendar on the G&D website. Be sure to also check the GSBS website for award applications and deadlines. A list of G&D student award winners is posted on the program website.

G&D awards: <http://www.mdanderson.org/departments/genesdev>

GSBS awards: http://gsbs.uth.tmc.edu/current_funding.htm

G&D Awards

G&D Travel Awards

Travel awards are available to G&D students who are presenting results at a national or international meeting, as long as funds are available. The student must have had an advisory, examining or supervisory committee meeting during the six months prior to submitting an award request. Only one award per student, per year, is allowed, and the number of awards is strictly limited due to budget constraints. The one-page application is on the G&D website.

Award Amount: \$200.00

G&D Research Achievement Award

Each year, two students are given a research achievement award based on their research accomplishments as a G&D student. A G&D faculty committee selects the winners based on the student's annual research report, which they submit each summer. The post-candidacy winner is invited to give the Grady Saunders Student Lecture at the G&D annual retreat.

Award Amount: \$200.00 Pre-Candidacy; \$400.00 Post-Candidacy

G&D Retreat Poster Award

Four student poster awards are given at the annual spring retreat for posters presented at the retreat – two pre-candidacy and two post-candidacy.

Award Amount: \$200.00 Pre-Candidacy; \$250.00 Post-Candidacy

G&D Student Service Award

This award is presented each fall to a G&D student who has demonstrated exemplary service to the program through their contributions and participation in program activities and events.

Award Amount: \$100.00

G&D RIKEN Travel Award

This award is presented in the fall to a G&D student to attend the Annual Symposium at the RIKEN Center for Developmental Biology (CDB) in Kobe, Japan.

Award Amount: To Be Determined

Program Resources

Section Topics

- G&D Public Website
 - G&D Intranet Website
 - G&D Student Group Email List
 - G&D Laptop Program
 - G&D Online Message Board
 - G&D Hot Papers of the Month
 - G&D Newsletter and Bulletins
 - Resource Suggestions
-

G&D Public Website -- www.mdanderson.org/departments/genesdev

The G&D public website provides valuable information for students and faculty. Key features include:

- Fellowships, scholarships and other award application information.
- Faculty research descriptions and publications.
- Student and faculty contact information.
- G&D forms.
- Program calendar.
- Retreat information.
- Candidacy exam information.
- Blaffer weekly seminar schedule.
- Program brochure, newsletters and this handbook.
- Useful M. D. Anderson, UTHSC, and transportation resources.

G&D Intranet Site -- <http://inside.mdanderson.org/departments/genedev/>

The G&D Intranet (internal) site contains information that is only available to users at M. D. Anderson. Content on this site includes:

- Links to M. D. Anderson proposal writing resources.
- G&D online message board (*under re-development summer 2009*)
- Current retreat abstract book.

G&D Student and Faculty Group Email Lists

mda_gd_students@mdanderson.org

mda_gd_faculty@mdanderson.org

To send a message to the groups, simply enter the group name in the “To” field, with blank spaces between words. You can only send a group email message from inside the M. D. Anderson email system. In addition, you can only reply to the sender, not to the entire group. The G&D Program Manager maintains these lists.

G&D Laptop Program

The G&D Program provides its students with a laptop computer for their use while in the program. The faculty believes that an important part of graduate training is to learn how to gather, organize and present data digitally. The laptop computers are provided to help achieve this goal. The G&D Program Manager manages the laptop program.

All laptops must be returned to the program within one month of the successful defense of your thesis, or if you find that you no longer need it. In addition, you must return your laptop if you change labs and your new advisor is not a G&D faculty member, or if you leave the program altogether.

G&D Online Message Board*

The G&D Program has its own online message board for students and faculty of the program, and other scientific personnel in the Department of Biochemistry & Molecular Biology, and the Department of Genetics. The board is available for scientific and department use only. Suggestions for board use:

- To request a probe, plasmid or antibody.
- To seek assistance with troubleshooting a protocol you're having difficulty with.
- To find out who is attending a national meeting.
- To coordinate rides to the retreat.
- To organize candidacy exam study groups and post study messages.
- To find out and/or share information about writing and grant workshops, career development programs, and other useful activities at the Texas Medical Center.

**As of 6/09, the message board is temporarily unavailable. However, it will be re-launched later this summer as a SharePoint site on the M. D. Anderson Intranet.*

G&D “Hot Papers”

Twice a month, two recent publications from G&D labs are posted on Program bulletin boards in the Mitchell BSRB Building (first page of paper only). In cases where more than two papers are submitted, the Program Co-Director selects the posting order. Papers not selected for one month, are usually posted the following month.

Submit your papers, as they are published, to the Program Manager as PDF files. Faculty and students will also be asked to submit publications for posting, as needed.

G&D Newsletters and Bulletins

The G&D Program publishes an annual newsletter each summer and occasional bulletins throughout the year. If you have any suggestions for these publications or would like to contribute to them, please contact the Program Manager.

Resource Suggestions

If you have suggestions for any new resources to be included in this handbook, or to be posted on the G&D website, please let the Program Director or the Program Manager know. We welcome your suggestions!

M. D. Anderson & UTHSC-H Resources

Section Topics

- M. D. Anderson Research Weekly
 - M. D. Anderson Department of Scientific Publications
 - M. D. Anderson Research Medical Library
 - M. D. Anderson Medical Graphics & Photography
 - M. D. Anderson Trainee and Alumni Affairs
 - M. D. Anderson Ombuds Office
 - M. D. Anderson Employee Assistance Program
 - M. D. Anderson Free English Classes
 - UTHSC-H Counseling Services
 - UT Police Department
 - Parking, METRO and Shuttles
-

M. D. Anderson Research Weekly

Research Weekly is a week-at-glance listing of scientific events at M. D. Anderson. Distributed each Thursday, the email contains a brief description of scientific events for the following week. To subscribe, send an email to researchweekly@mdanderson.org and ask to be added to their mailing list.

M. D. Anderson Department of Scientific Publications

Hours: Monday – Friday 8:00 a.m. to 5:00 p.m.

Phone: (713) 792-3305

Location: Pickens Academic Tower, 6th floor (FCT6.5086).

Please note that their satellite office in the research medical library is now closed.

Website: <http://inside.mdanderson.org/departments/scipub/>

The Department of Scientific Publications provides a wide range of editorial services to the M. D. Anderson Cancer Center community, free of charge. Their main role is to assist M. D. Anderson faculty and staff with their publishing endeavors. They are available to

- edit journal articles, book chapters, grant proposals, and abstracts.
- consult with authors on early drafts of their work.
- answer questions about publishing, book and journal production, word usage, grammar, and style.

They have also written and published two valuable writing guides on their website: “**Writing Effective Scientific Articles**” and “**Writing Effective Grant Proposals**.”

M. D. Anderson Research Medical Library

Hours

Monday – Friday: 7:30 a.m. to 7:00 p.m.

Saturday: Closed

Sunday: Closed

Telephone Numbers

Information Desk: (713) 792-2282

Document Delivery: (713) 745-4531

Fax: (713) 563-3650

Location

Pickens Academic Tower, 21st Floor. 1400 Pressler Street

Website: <http://www.mdanderson.org/library/>

Journal and Online Database Access

The Research Medical Library licenses access to over 15,000 journals online, and subscribes to approximately 550 journals in print. For recent years, about 90% of the print journals are also available online. The Online Journals page of the library's website is the one best place to check to see what the library has available both online and in print. The library also provides access to approximately 100 licensed databases through the Databases page of its website.

Registering for Remote Access and Library Privileges

The Research Medical Library is a member of the Texas Health Science Libraries Consortium (THSLC) that includes the major University of Texas component libraries in the Medical Center and UTMB in Galveston. Registering for library privileges with one library provides borrowing privileges at all members of the consortium. The libraries share an online catalog of their collections, and users can search the collections of all of the libraries at one time.

Registration is also required before using other Research Medical Library services, such as starting a printing & photocopy service account or requesting a copy of an article through document delivery (ILLiad). To register for library privileges, go to the Research Medical Library's Information Desk with your M. D. Anderson badge. You can also register via fax. If you wish to do this, call the Information Desk (713-792-2282) for assistance.

All M. D. Anderson employees can apply for remote access to the Library's resources (online journals, books, and databases) by calling 4-INFO (713-794-4636). 4-INFO will provide a form that must be endorsed by your supervisor or department head and returned to 4-INFO before you will receive a user name and password.

Library Classes

The library offers free classes throughout the year, which include, EndNote, PubMed, Finding Journals Online, Cited Reference Searching, RSS for New Publications, and SCOPUS. Check the library website for current class offerings. For registration information, visit: <http://www.mdanderson.org/library/>

M. D. Anderson Medical Graphics & Photography

Hours and Phone

Monday – Friday 8:00 a.m. to 5:00 p.m.

Client Service: (713) 792-6734 (*Yellow Zone*)

Location

Yellow Zone, Room Y2.5724

Main Website: <http://inside.mdanderson.org/departments/medical-graphics/index.html>

Education Hub: <http://inside.mdanderson.org/departments/medical-graphics/mg-p-education-hub.html>

About Medical Graphics

Medical Graphics & Photography provides professional graphic design, computer graphics, illustration, custom and stock photography, large format printing and lamination services. All services are provided on a fee-basis. On their website you will also find institutional logos, poster templates, graphics tutorials, graphics standards, and a stock photography library.

Online Scientific Poster Tip Sheets

Tip Sheets: <http://inside.mdanderson.org/departments/medical-graphics/tip-sheets.html>

- Microsoft PowerPoint Template Tip Sheet
- Adobe Illustrator Template Tip Sheet
- Adobe Illustrator Tools & Palettes Tip Sheet
- Basic Guidelines & Costs for Client-Made Scientific Roll-up Posters
- Working with Type
- Steps in Developing and Refining Your Copy
- Deciding What Graphics to Use
- Poster Content Checklist

Online Templates

- Scientific Poster Templates for PowerPoint and Illustrator
<http://inside3.mdanderson.org/faculty/medgraphics/template.htm>
- On-Screen M. D. Anderson Title Slides (PowerPoint template)
<http://inside.mdanderson.org/departments/medical-graphics/m-d-anderson-powerpoint-presentation-templates.html>
- M. D. Anderson Memo, Letterhead, Fax
<http://inside.mdanderson.org/departments/medical-graphics/memo-letterhead.html>

Onscreen Tutorials

<http://inside3.mdanderson.org/faculty/medgraphics/educationhub.htm>

- How to Download M. D. Anderson Logo
- Using the Crop Tool in Photoshop
- Basic Techniques for Preparing Images for Publication Seminar

M. D. Anderson Trainee and Alumni Affairs Office

Phone: (713) 792-2696

Location: Pickens Academic Tower, FCT 7.500, 1400 Herman Pressler Dr.

Website: <http://www.mdanderson.org/education-and-research/education-and-training/trainee-and-alumni-affairs/index.html>

The M. D. Anderson Trainee and Alumni Affairs Office provides services to support the needs of M. D. Anderson graduate students. Their services include, but are not limited to:

- Trainee appointments.
- Visa support/liaison with Office of International Affairs.
- Verification of employment and training for loan deferments and tuition reimbursements for research trainees.
- Publication of an online “Trainee Survival” guide with detailed information about Houston for newcomers.
- Institutional and benefits orientation.
- Career development workshops.

M. D. Anderson Ombuds Office

Phone: (713) 792-4896

Location: Pickens Academic Tower (FCT10.5081), 1400 Hermann Pressler Drive

Website: <http://www.mdanderson.org/departments/ombuds-office/>

About the Ombuds Office *(from the Ombuds web page)*

“The M. D. Anderson Ombuds Office provides a confidential, impartial, independent and informal process to facilitate fair and equitable resolutions to workplace concerns that arise at the M. D. Anderson Cancer Center. The Ombuds Office takes into consideration the interests of all individuals and the interests of the institution in a given situation. The Ombuds Office serves all members of the M. D. Anderson workforce, including trainees and fellows, by responding promptly and fairly to concerns, complaints or disputes arising from or affecting their work environment, and by providing a safe place to discuss these issues without fear of retaliation.”

What are some common problems people present to the ombuds?

“Any type of conflict in the workplace that an objective third party could clarify or mediate is appropriate. Employees often come to the Ombuds Office to discuss interpersonal misunderstandings, feelings of abuse of power or disagreements about policy, procedure or career concerns. People often visit the Ombuds Office when they are not sure where to go, or where to seek guidance, or how to address the problem, or what options are available. The Ombuds Office is a good place to discuss a sensitive question or issue. For example: Difficult work relationships; Perceived unfair treatment; Management problems.”

“What about confidentiality? Confidentiality is respected and protected so that individuals can freely clarify their problems without fear of retribution or loss of standing with friends, peers or supervisor.”

Visit their website to learn more about their confidentiality policy and their services.

M. D. Anderson Employee Assistance Program (EAP)

Phone: (713) 745-6901

Hours: 8:00 a.m. to 5:00 p.m.

After Hours Urgent Calls: (281) 537-7445 or (800) 848-4641. Say that you are an M. D. Anderson student, employee or dependent and ask to speak to the on call EAP counselor.

Website: <http://www.mdanderson.org/about-us/for-employees/employee-resources/employee-health-and-well-being/programs-and-services/employee-health-well-being-programs-services-employee-assistance-program-eap-.html>

About the EAP Program *(edited from the EAP web page 6/15/09)*

The Employee Assistance Program (EAP) at M. D. Anderson provides confidential assistance to all employees, faculty, designated trainees and students and retirees to help resolve problems that effect their personal lives and performance on the job. Immediate family members of employees also are eligible for these services. Everyone, on occasion, is challenged by personal problems and concerns. These may include family or relationship issues, work-related stresses, issues about alcohol or drug use, situations when legal help is needed, financial pressures, the loss of a loved one or health concerns such as depression or anxiety.

Program Services Are Provided at No Cost and Include:

- Confidential assessment, short-term consultation and referral services for a variety of personal and work-related stressors.
- Personal legal assistance. A legal helpline is staffed by contracted attorneys who provide consultation at no cost to the employee for a wide variety of personal legal matters.
- Critical incident stress debriefing. Assistance is available to a work group affected by the death of a coworker or other traumatic event.
- Management consultation and training.
- Employee training.

Confidentiality *(from the EAP web page 6/15/09)*

“EAP information is kept strictly confidential, consistent with applicable laws and professional standards. In the case of a self-referral or supervisor-suggested referral, information is not released to anyone without the authorized consent of the client. In the case of a formal supervisor referral, the EAP notifies the supervisor to confirm only whether or not the employee has contacted the EAP and whether recommendations have been followed.”

Free English Classes at M. D. Anderson

M. D. Anderson offers free English As A Second Language (ESL) classes for trainees, faculty and staff four times each year. The classes include: Speaking Naturally, Pronunciation, Grammar, Effective Presentation and Meeting Skills, Effective Communication in the Workplace and Writing. The classes are taught at M. D. Anderson by University of Houston instructors. They are three hours per week for 10 weeks. You must register in person at M. D. Anderson for coaching and evaluation. Classes start about two weeks after the registration period. For more information, contact Mercedes Suraty-Clarke at: msclarke@uh.edu or go to:

<http://inside.mdanderson.org/human-resources/employee-development/training-programs/es-class-11-08.pdf>

UT Counseling and WorkLife Services

Phone: (713) 500-3327 or 800-346-3549

Hours: Services are offered all day, all week, all year (24/7)

Counseling Website: <http://publicaffairs.uth.tmc.edu/worklife/counseling/services.html>

WorkLife Website (main): <http://publicaffairs.uth.tmc.edu/worklife/index.html>

UT Counseling & WorkLife Services provides counseling, legal, financial, wellness, and other services for GSBS students and their immediate families. Their services are strictly confidential (see their confidentiality statement on their website), and are free and available to all benefits-eligible faculty, staff, students, residents and fellows and their immediate families.

Free psychiatric consultations and on-going care are available upon request and need. The professional and support staff at UT Counseling and WorkLife Services look forward to working you and your immediate family as they continue building responsive and caring programs that recognize the unique and challenging issues faced by students.

Please visit their website to learn more about their services. To schedule an appointment, call (713) 500-3327.

University of Texas Police Department

Non-Emergencies: (713) 792-2890

Emergencies: 911

Website: <http://www.mdanderson.org/utpd/>

The University of Texas at Houston Police Department (UT Police) provides law enforcement and community services to the M. D. Anderson Cancer Center and UT Health Science Center at Houston institutions.

Parking, METRO and UT Shuttle Service

Parking

Parking options vary depending on distance and cost. For up-to-date information, it is best to check the GSBS, UTHSC, or M. D. Anderson websites.

GSBS: <http://gsbs.uth.tmc.edu/policies/parking.html>

UTHSC – Auxiliary Enterprises: <http://ae.uth.tmc.edu/parking/index.html>

M. D. Anderson: <http://inside.mdanderson.org/departments/campusops/parking-transportation.html>

Parking, METRO and UT Shuttle, continued

After Hours Student Parking - \$25.00 Per Semester

After hours student parking is available for \$25.00 per semester in the Mental Sciences Institute Parking Lots, BB and CC on M. D. Anderson Blvd. This is a street level lot next to parking garage #10, across the street from the yellow zone. Please note that you cannot park your car in these lots for more than 24 hours or it will be subject to towing.

Parking is available from 6:00 PM to 6:00 AM Monday-Friday, and all day on weekends and major holidays. Purchase a static cling sticker tag in Suite 1.070q on the street level of the University Center Tower Lot, 7000 Fannin and Herman Pressler (by the security guard desk). You must have a UT student ID to purchase a tag. For more information, go to the Auxiliary Services website:

http://ae.uth.tmc.edu/parking/student_parking.htm or call 713-500-3405

After Hours Parking in the Commons Waterfall Garage #15

After hours, reduced-cost parking is available for M. D. Anderson employees in the Commons waterfall parking garage (TMC garage #15). There are two options:

1. Purchase an “after hours” contract card. This allows you to park in garage #15 Monday through Friday from 4:30 PM to 8:00 AM and 24-hours over the weekend (i.e. from 4:30 PM Friday to 8:00 AM Monday). Note, while you can park until 8:00 AM, you cannot enter the garage after 4:30 AM during the week.
2. If you have a parking contract for the South extension (Brown) Lot or the Smith Lands lots, then you can park for no added cost in Garage #15 during the same “after hours” as listed under option #1, except that you cannot enter the garage until 6:00 PM Mon-Fri.

METRO Light Rail and Bus Information

METRO is Houston’s bus and light rail service. The regular one-way fare for METRORail or local METRO bus service is \$1.25. The student discount rate is \$.60 per local ride for both. This rate is only valid when you use the METRO “Q” card, which is an electronic card loaded with a pre-paid balance. Fares are automatically deducted from your card each time you ride, just like a debit card. It provides free transfers and tracks your progress toward earning five free trips for every 50 paid rides. You can purchase a “Q” card online or at a number of different retail locations.

For more information about METRO and where to purchase a Q Card, go to **www.ridemetro.org** or phone (713) 635-4000.

UTHSC-H Shuttle Service

Free shuttle service for students between UT housing and the medical center is provided by UTHSC-H. You must present your student ID to ride the bus. Shuttles operate Monday through Friday between 6:00 AM and 8:00 PM. The shuttle schedule is posted at:

http://ae.uth.tmc.edu/parking/ae_sschedule.htm

Use Twitter for late-breaking UTHSC shuttle news at: **<http://twitter.com/UTHSCShuttle>**

Changing Advisors & Leaves of Absence

Section Topics

- Changing Advisors
 - Taking a Leave of Absence
-

Changing Advisors

From the “Policies & Procedures/Faculty Advisors” section of the GSBS website (6/15/09):

“A student may select a new Advisor with the approval of the ASC. To request a change the student should submit a letter to the ASC describing the circumstances for the requested change. The current and prospective Advisors must submit letters to the ASC certifying that the student has discussed the proposed change with them, that they have both had the opportunity to review the student’s academic record, that they have discussed the proposed change with each other, and providing any other comments they wish to make. The prospective Advisor also should indicate his/her willingness to provide academic guidance and financial support for the student.”

Students who change Advisors are still expected to meet the stated deadlines for completion of degree requirements. If an extension is desired, a written request, including justification for the extension and an estimated date for completion of the requirement in question, must be submitted to the ASC for approval.”

G&D Laptop Program Policy and Advisor Changes

If a student changes advisors and the new advisor is not a faculty member in the G&D Program, the student must return his/her laptop to the G&D Program Manager.

Taking a Leave of Absence

From the “FAQs” section of the GSBS website (6/15/09):

May I Take a Leave of Absence?

“The GSBS allows students to request an official Leave of Absence (LOA) for up to one year. During an official LOA, the student can not be paid by the advisor or the GSBS, but may work at outside employment. Students may request an official LOA from the Office of Academic Affairs at the GSBS. Students must state a date when they will return to the GSBS. If they do not return by that date, and they have not been granted an extension of the LOA, they will be considered to have withdrawn from the GSBS.”

Students may return prior to the date that they stated they would return. Students returning from LOA do not need to re-enter the Admissions process, but they must notify the OAA that they are returning just prior to the semester that they wish to re-enroll in. Extensions of the official LOA for up to one additional year may be requested through the OAA, and must have the approval of the Dean of the Graduate School. An official leave of absence request petition must be filled out by the student and turned into the OAA. As a part of this form, numerous signatures are required from various offices around the TMC, indicating that the student is permitted to initiate a leave of absence with non-registered status.”

Dissertation Defense

Section Topics

- Planning Your Defense
 - Formatted Dissertation for Supervisory Committee
 - Reserving a Room
 - Defense Announcements
 - Defense Refreshments
-

Planning Your Defense

From “For Graduating Students/Steps To Graduation” on the GSBS website (6/15/09):

1. *Write your Thesis/Dissertation*
2. *Submit the “Request for Defense of the M.S. Thesis or Request for Defense of the Ph.D. Dissertation” form to the Office of Academic Affairs (GSBS, BSRB 3.8451)*
 - *turned in at least 10 working days before defense*
 - *include a one-page abstract - electronic submission is encouraged*
3. *Defend your Thesis/Dissertation; submit signed Results of Defense. Defenses must occur no later than two weeks prior to the end of a term.*
4. *Submit Your Thesis/Dissertation to the Office of Academic Affairs*
 - *original Thesis/Dissertation, approved by your Supervisory Committee*
 - *only **one unbound** Thesis/Dissertation is required*
 - *on good quality white paper such as copier paper*
 - *black specks from copier machines should not be evident!*
5. *SUBMIT EXIT FORMS (Exit Forms can be picked up at GSBS, BSRB 3.8451.)*

Ph.D. Forms:

 - *Alumni Form; Survey of Earned Doctorates; Microfilming Agreement; Application for Degree; Exit Clearance Form*
 - *submit cashier’s check or money order (no personal checks or cash) in the amount of \$65 made out to “Proquest Information and Learning” to pay for microfilming your dissertation*

For detailed information about submitting your dissertation, defense guidelines and exit requirements, go to these two GSBS web pages:

<http://gsbs.uth.tmc.edu/policies/phdreqs.html>

<http://gsbs.uth.tmc.edu/gradguide/thesis.html>

Formatted Dissertation for Supervisory Committee

When you submit your dissertation to your supervisory committee prior to your defense, it should be in its final formatted form per GSBS guidelines. This includes correct grammar, word usage, spelling and final figures.

Reserving a Room

You are responsible for scheduling the room for your defense. You should reserve your room for 2 1/2 hours – 1/2 for set up and 2 hours for your seminar and committee meeting that will follow.

In the BSRB, all GSBS classrooms are reserved through GSBS. The conference rooms on floors 7 through 15 are reserved through various support staff in the Department of Genetics and the Department of Biochemistry and Molecular Biology.

See the Appendix for a list of Mitchell BSRB rooms and who to contact to reserve one.

Dissertation Defense Announcements

The G&D Program Manager prepares and posts a printed defense announcement on all Program bulletin boards in BSRB and sends an email invitation to all G&D faculty and students. In order to prepare these announcements, students should provide the G&D Program Manager with the date and time, room number, and seminar title as soon as it is known. GSBS also sends out email announcements to all GSBS faculty and students for all M.S. and Ph.D. defenses.

Defense Refreshments

The G&D Program provides light refreshments and drinks at the start of each G&D dissertation defense, which are ordered by the support staff of the student's advisor. Any post-defense celebrations are organized by the student's lab and/or department, not the G&D Program.

Leaving M. D. Anderson

Section Topics

- Checking-out of your Department and/or M. D. Anderson
 - Checking-out with the G&D Program Manager
-

Checking-out of your Department and/or M. D. Anderson

When you are ready to leave your department, check with your advisor's support staff to find out what you need to do.

Trainee check out takes place no earlier than two weeks and at least within five days prior to the trainee's end date. Trainees must report to the Trainee & Alumni Affairs (TAA) office to begin the check out process, Pickens Academic Tower, FCT 7.500. No appointment is necessary. All trainees receive a clearance form to be completed and signed by the departments listed on the form, e.g. medical library, payroll, etc.

The check out process is complete once a trainee has been cleared by all departments required on the clearance form, and has returned the completed clearance form and ID badge to Trainee & Alumni Affairs in person or by interoffice mail or has given both to his/her department for mailing to TAA via interoffice mail. See page 42 for their contact information or go to this website to learn about their checkout procedures:

<http://inside.mdanderson.org/education/medical-scientific-education/trainee-check-out-procedure.pdf>

Checking-out with the G&D Program Manager

After you have completed your degree, please give the Program Manager your forwarding information, including your next position, lab, location, email address and mailing address.

If you have a G&D laptop and will remain in your thesis lab, you can keep the laptop for one month after the successful defense of your thesis. In all cases, you must return the laptop prior to leaving M. D. Anderson.

Appendix

G&D Forms

All G&D forms are available on the G&D website at www.mdanderson.org

- BSRB Conference Rooms and Classrooms
- G&D Travel Award Application Form
- G&D Program Checklist Form
- Sample Biosketch Form
- Approval for G&D Course Substitution Form
- Approval to Waive a G&D Required Course Form
- Rotation Student Information Form
- Awards Chart

GSBS Forms

GSBS forms are available on the GSBS website at:

http://gsbs.uth.tmc.edu/current_forms.htm

BSRB Conference Rooms & Classrooms

Location	Room No.	Capacity	Reserve Through
3 rd Floor Conference Room	S3.8355	15	GSBS
3 rd Floor Library	S3.8351	10-20	GSBS
3 rd Floor Small Classroom	S3.8367	25	GSBS
3 rd Floor Large Classroom	S3.8371	60-90	GSBS
7 th Floor Conference Room	S7.8328	15	Dept. of Biochem. & Molecular Biology
9 th Floor Conference Room	S9.8328	15	Dept. of Biochem. & Molecular Biology
11 th Floor Conference Room	S11.8328	15	Dept. of Biochem. & Molecular Biology
13 th Floor Conference Room	S13.8328	15 (20 for a tight fit)	Dept. of Genetics
14 th Floor Conference Room	S14.8136	About 40	Dept. of Genetics
15 th Floor Conference Room	S15.8328	15 (20 for a tight fit)	Dept. of Genetics
1 st Floor Conference Room	S1.8331	25	M.D. Anderson Conference Services
3 rd Floor Classroom	S3.8003	25	M.D. Anderson Conference Services
5 th Floor Classroom	S5.8005A/B	25 (<i>can be split into 2 rooms</i>)	M.D. Anderson Conference Services
5 th Floor Classroom	S5.8004A/B	35 (<i>can be split into 2 rooms</i>)	M.D. Anderson Conference Services
Onstead Auditorium	S3.8012	252	M.D. Anderson Conference Services

Who to Contact to Reserve a Room

GSBS Rooms

All GSBS room reservation requests must be submitted by email using a GSBS interactive PDF form. If you have any questions, please contact the room reservations coordinator at: GSBS_classrooms@uth.tmc.edu

To reserve a GSBS room or view the reservation schedule go to: <http://gsbs.uth.tmc.edu/classrooms/classrooms.htm>

Department of Biochemistry & Molecular Biology Rooms

If you are a Biochemistry & Molecular Biology student, please check with your advisor's support staff.

All other G&D students can check with Ruby Desiderio: rdesider@mdanderson.org; 713-834-6276; Room S9.8316

Department of Genetics Rooms

13th Floor: **Vicki Garza**: vgarza@mdanderson.org; 713-834-6321; **Conference Room S13.8316**

14th Floor: **Cordelia Conley**; cconley@mdanderson.org; 713-834-6337; **Conference Room S14.8136**

15th Floor: **Pat Arubaleze**: parubale@mdanderson.org; 713-834-6389; **Conference Room S15.8316**

M.D. Anderson Conference Services: Ask your advisor's support staff for assistance.

Genes & Development Program Checklist

Name _____ Advisor _____

Number of Years Completed in GSBS _____ Advisor's Signature _____

Today's Date _____

Course Requirements (check completed courses only)

- Experimental Genetics
- Eukaryotic Gene Expression
- Developmental Biology, Cancer Cell Signaling, or Structure and Function of Biological Macromolecules
- Metabolic Biochemistry or Topics in Biochemistry and Molecular Biology
- Biomedical Statistics or Current Methods in Molecular Research
- Current Topics in Genes & Development – FALL Semester (presentations)
- Current Topics in Genes & Development – SPRING Semester (writing)

¹fall semester required for students who enter GSBS on or after August 2003.

²spring semester required for second year students who enter GSBS on or after August 2006.

When do you plan to take your remaining class(es): _____

Public Presentation Requirement

Before graduation, G&D students are required to participate in at least five seminar courses, journal clubs, departmental activities and/or other groups that require them to make an oral presentation. Please list the date and name of the class or event where you presented. A list of five is sufficient.

1. _____
2. _____
3. _____
4. _____
5. _____

Publications Requirement (required of all students who enter GSBS on or after August, 2006)

All G&D Ph.D. students are required to have one peer-reviewed, first-author paper either published or in submission prior to obtaining permission to defend their dissertation. Publications are an essential part of your training as a Ph.D. scientist. This requirement is only a minimum standard. Your supervisory committee ultimately must judge if your research accomplishments are sufficient for a degree. Committees commonly expect more than one publication before the dissertation defense. You are strongly encouraged to discuss your past publications and plans for future publications with your supervisory committee at each meeting.

Please list your first author publication(s) below that have been submitted or published to date.

Please submit this form with your annual G&D research report.

Principal Investigator/Program Director (Last, first, middle):

Sample Biosketch Form

BIOGRAPHICAL SKETCH

Provide the following information for the key personnel in the order listed for Form Page 2.
Follow the sample format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME	POSITION TITLE
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EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY

A. Positions and Awards

B. Peer-reviewed Publications and Manuscripts in press (or submission)

Genes & Development

Approval for G&D Course Substitution

Genes and Development students wishing to substitute another course for a program course requirement can do so provided that:

1. It is of clear benefit to the student's education.
2. The new course fulfills the same GSBS area requirement as the original G&D course (i.e. a "systems" course must be substituted by another "systems" course).
3. All members of the students advisory committee agree that the change will benefit the student and provide signature approval.
4. The current G&D program director also approves the change.

Students making G&D course substitutions should be aware that they will still be required to pass the written breadth exam, which will include questions from the G&D course requirement that was substituted. Students should carefully consider how they will prepare themselves for the written exam.

Student's Name _____

Required G&D Course _____

Course being substituted _____

Reason for substitution _____

APPROVED BY:

Print Name

Signature

Advisor:

Committee Members:

Program Director:

Please return completed form to the G&D Program Director.

Genes & Development

Approval to Waive a Required G&D Course

Genes and Development students wishing to waive a required program course can do so provided that:

1. It is of clear benefit to the student's education.
2. The course director of the waived course believes a course taken previously is equivalent to the G&D course.
3. The student's advisor approves the request to waive the course.
4. The GSBS approves the request to waive the course.
5. The G&D program director approves the request to waive the course.

Students waiving a G&D required course should be aware that they will still be required to pass the written breadth exam, which may include questions from the G&D course requirement that is being waived. Students should carefully consider how they will prepare themselves for the written exam.

Student's Name _____

Required G&D Course to Waive _____

Reason for Waiving Course _____

APPROVED BY:

Print Name

Signature

Advisor:

Course Director:

Assistant Dean for
Academic Affairs:

Program Director:

Please return completed form to the G&D Program Director.

12/1/06

Genes & Development

Rotation Student Information

Welcome to your rotation in a Genes and Development lab!
Please fill out this form and return it to Elisabeth Lindheim, G&D Program
Manager in S12.8136B (Department of Genetics, Unit 1010). Or email
her the information at elindheim@mdanderson.org

Name _____

Tutorial Advisor _____

Email _____

Rotation Period: **Fall** **Winter** **Spring** **Summer** **YEAR** _____

Tutorial Number: **1st** **2nd** **3rd** **4th**