Guide to Graduate Studies in the Department of Chemistry

Excellence in graduate training is central to the research and teaching missions of our department. The success of our Ph.D. students is of paramount importance to us. This handbook, along with supplementary materials online, is intended to provide a clear guide to the steps leading to the Ph.D.

Our Ph.D. program, reviewed and redesigned with extensive student input in 2000, emphasizes research training and productivity, original and creative thinking, and developing excellent communication skills to support a successful scientific career. The handbook describes:

- orientation information to help first-year students get settled and off to a quick start,
- formal requirements for the Ph.D. Degree in Chemistry, as well as an M.S.,
- annual review procedures designed to ensure steady, timely progress toward the degree, and
- department policies affecting finances and other matters related to student welfare and concerns.

All of the requirements and policies in this handbook apply to students entering the program beginning in Fall 2004. Note that recent updates in the sections on attainment examinations, English language proficiency, research advisors, advisory committees, and formal seminar differ from those that apply to students entering in Fall 2002-Spring 2004. Please keep in mind that you can also find a copy of the Guide to Graduate Studies at http://www.chem.cmu.edu/grad/guide/. Please be sure to review your requirements at the beginning of each semester and feel free to discuss additional questions with us or Valerie Bridge at any time.

Graduate Program Committee
Rea Freeland, Co-Chair
Linda Peteanu, Co-Chair
Catalina Achim
Stuart Staley
David Yaron
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Getting Oriented

Logistics

ID Cards: You can get your Carnegie Mellon photo ID card at the HUB. Your card will also give you access to
Mellon Institute (MI) and the MI library after 5:00 PM. Nina Gibbs can arrange to have your ID card activated for
MI access.

Phones: Most Carnegie Mellon phone numbers begin with 268. When you are on campus, you dial simply 8
and the last four numbers. For off campus calls, dial 9 before the number. Long distance calls are billed to you
individually.

Parking and Transportation: If you want to purchase a parking permit (prices vary according to location),
you need to contact the Parking Office immediately (x82052) since student spaces may run out. The parking
office hours are 8:00 am. to 4:30 p.m., Monday-Friday. The university has an arrangement with the Pittsburgh
bus system so that you can ride free in a large region if you have a sticker on your Carnegie Mellon ID.
Information is online at bizservweb.pcc.cc.edu/parking/permit.

Computer Accounts and Email: You will have a computer account on the “Andrew” system when you arrive
if we have your social security number or as soon as a temporary social security number is assigned. You may
want or need to have accounts on multiple machines but we recommend that you have your email forwarded
to a single address. You should plan to check your email at least twice a day.

Mailboxes: The main Chemistry mailroom is in MI near the rear elevator. You will be assigned a mailbox, typically
shared with several other students. Please see Caitlin Zunic as soon as possible to get a mailbox. You should plan to
check your box at least 2-3 times per week.

Mellon Institute Computer Cluster: The cluster in MI 320A provides twenty-four hour access to Macs and PCs with
university ID/access card. The Cluster Consultant (x8-8791) can answer questions about the machines and software.
You will probably want to use the cluster until you have a temporary desk assignment and possibly as a supplement
to the machines available in your research group.

University Center: The University Center houses a large variety of facilities, including recreational areas (pool,
gymnasium, weight room, aerobics); dining options (American, Italian and Mexican food); the University Shoppe
(textbooks, art supplies, clothing, gifts), Entropy (a convenience store), and Skibo Coffeehouse (location of regular
happy hours sponsored by the Graduate Student Assembly).

Photocopiers: The department photocopier in MI 400 may be used with the proper access code for your
research group. You can also sign out journals for very brief periods (2 hours) to make copies on the department
copier. Until you join a research group, please see Valerie about making copies. Nina Gibbs handles
maintenance of this copier. Jack Thorpe runs the Mellon Institute Copy Center in MI 349. Teaching assistants
will typically be responsible for course-related copying and should make an effort to use the copier in the
Doherty Hall undergraduate office for this purpose. The photocopier in ML 400 can also be used with a separate access code obtained from Nina Gibbs.

**Fax:** A fax machine (412/268-1061) is available for faculty, students, and staff with an account number. Please record all transmissions.

**Environmental Health & Safety (EH&S):** EH&S provides expert training and overall guidance in safe management of chemicals and biological agents in research and teaching labs. Chemical safety training will be included in your TA training. Additional biological safety training may be required for some research groups and students should consult their advisor about specifics. Their URL is [http://www.cmu.edu/ehs/](http://www.cmu.edu/ehs/). The department also has asked each research group to appoint a safety officer so you will have someone nearby who is familiar with EPA expectations and safe lab practices. When you have specific safety questions or concerns, you can also contact Karen Stump or Colin Horwitz, the departmental representatives on the University Laboratory Safety Committee. In addition, you can consult Danith Ly about biological safety training.
Key Contacts

Hyung Kim, Professor and Department Head
Mellon Institute 510, x8-6489, kim@chem.cmu.edu
Responsible for the overall leadership and administration of the department. For appointments, contact Brenda Chambers.

Rea Freeland, Associate Head and Graduate Program Committee Co-Chair; Associate Dean for Special Projects
Mellon Institute 440B, x8-7981, rf51@andrew.cmu.edu
Oversees graduate program, focusing especially on choice of advisor, attainment requirements, and committee meetings. Serves as ombudsperson for graduate students to assist with difficult academic or personal situations where a confidential sounding board and/or an intermediary can be helpful. For appointments, contact Nina Gibbs.

Linda Peteanu, Associate Professor and Graduate Program Committee Co-Chair
Mellon Institute 825C, x8-1327, peteanu@andrew.cmu.edu
Oversees graduate program, focusing especially on the formal seminar, research progress report, and proposal requirements.

Valerie Bridge, Graduate Program Specialist
Mellon Institute 404, x8-3150, vb09@andrew.cmu.edu
Handles much of the administration of graduate studies, including recruitment, admissions, registration, enrollment, program requirements, and ITA testing.

Karen Stump, Director of Undergraduate Studies and Laboratories; Teaching Professor
Doherty Hall 2120, x8-2340, ks01@andrew.cmu.edu
Advises undergraduate students and oversees the undergraduate teaching curriculum. Responsible for the operation of the undergraduate laboratories and oversees the laboratory staff. Works closely with graduate students as Teaching Assistants by making TA assignments and providing training, mentoring, and supervision.

Sito Narcisse, Program Assistant for Undergraduate Studies
Doherty Hall 1317, x8-2318, snarciss@andrew.cmu.edu
Assists in administration of the undergraduate program. Handles scheduling undergraduate classes and reserving rooms for review sessions or office hours in Doherty.

Drew Potratz, Senior Systems/Software Engineer
Mellon Institute 438, x8-8255, ap2a@andrew.cmu.edu
Administers the department’s computers and works with liaisons within each research group. Maintains helpful documentation for some common tasks at http://drewski.chem.cmu.edu/chem/.

Timothy Sager, Business Manager
Mellon Institute 440, x8-3343, ts1c@andrew.cmu.edu
Oversees the business functions of the Department, including personnel, payroll, and research contracts.

Brenda Chambers, Administrative Associate
Mellon Institute 412, x8-1062, brendac@andrew.cmu.edu
Coordinates key departmental activities such as faculty searches and reviews. Manages Department Head’s schedule.
Patsey Haddock, Fiscal Secretary
Mellon Institute, Room 509B, x8-1064, pw17@andrew.cmu.edu
Responsible for purchase orders, petty cash, work orders for building repairs, and property management.

Nina Gibbs, Office Support Staff
Mellon Institute 408, x8-3272, ngibbs@andrew.cmu.edu
Distributes paychecks and office keys. Handles ID card access to the building, library, and Computer Cluster. Oversees and handles problems with photocopier, fax and phones.

Karen Tobkes, Office Support Staff
Mellon Institute 408, x81053, tobkes@andrew.cmu.edu
Handles reservations for the Theory Suite Conference Room and schedules Introduction to Research, the formal seminar, Departmental Seminar Series, and Department Retreat.

Committees on Graduate Affairs

Graduate Program Committee (GPC)
The Graduate Program Committee will advise first-year students about courses, selecting an advisor, and other matters during your first year. The GPC also provides general oversight regarding the graduate program policies and procedures, including conducting an annual review to provide feedback to all graduate students. Current members of the GPC are: Rea Freeland (Co-Chair), Linda Peteau (Co-Chair), Catalina Achim, Stuart Staley, and Dave Yaron. General questions or concerns regarding registration, grades, and program requirements should be directed to Valerie Bridge. Detailed questions and concerns you may have about your academic progress or upcoming program requirements can also directed to Rea Freeland or Linda Peteau (see page 7). However, you should feel free to talk with any member of the committee about your questions or concerns.

Chemistry Graduate Student Advisory Committee (GSAC)
The Graduate Student Advisory Committee provides input to the GPC on matters of concern to graduate students and the graduate program in general. For example, the GSAC has been involved in revisions to the graduate program requirements and in assessing the program. You can talk with members of the GSAC to learn more about the program and to share feedback about it. They can often help you determine how to get assistance with concerns you may have. The current members of the committee are:
Andrea Jaquins-Gerstl (Peteau, 4th year)
Della Popescu (Collins, 4th year)
Jessica Cooper (McCullough, 3rd year)
Bill Gunderson (Hendrich, 3rd year)
Andrea Benvin (Armitage, 2nd year)

MCS Graduate Student Advisory Committee (MCS GSAC)
Similar to the departmental GSAC above, the Mellon College of Science has a group of graduate students (two from each department) to provide input to the Associate Dean for Faculty and Graduate Affairs. Andrea Benvin and Ben Janesko currently serve on the MCS GSAC.
Graduate Student Assembly (GSA)
The Graduate Student Assembly (GSA) serves as student governing body for graduate students at Carnegie Mellon. In addition to university services listed here, the GSA actively works on issues to improve the quality of life for graduate students and to provide varied social activities to enhance students' experience of graduate school. Departmental happy hours and the department's graduate student lounge are funded by graduate students' activities fees. Gizelle Sherwood, Andrea Benvin, and Melanie Vrabel have recently shared the role of the GSA department's representative.

Graduate Advisory Boards (GAB)
The Provost meets regularly with an ad hoc group of graduate students and administrators to stay informed about graduate student concerns. In recent years, these groups have initiated efforts to improve graduate health insurance and access to childcare. In addition, Suzie Laurich-McIntyre serves as Associate Vice Provost for Graduate Education as a central resource and advocate for graduate student concerns.

Introduction to Facilities

Center for Molecular Analysis (CMA)
The Center for Molecular Analysis provides training to faculty, graduate students and research staff in the operation of the various instruments there, including FTIR/NIR, UV/VIS/NIR, NMRs, MALDI/TOF mass spectrometer, Quadrupole field ion trap mass spectrometer, Diode Array UV-VIS, CD, and HPLC. Reservations for time on the instruments can be at http://www.chem.cmu.edu/cma/

Location: Mellon Institute 853
Contacts:
Mark Bier, CMA Director and Associate Research Professor
Telephone: x8-3540
Roberto Gil, Director of NMR Facility and Research Scientist
Telephone: x8-4313

Mellon Institute Library
The MI Library has an excellent collection, particularly in journal holdings.
Location: Fourth floor of Mellon Institute
Contacts: Kathy Bossick, Mary Neubauer.
Telephone: x8-3172

Mellon Institute Stores
This is the shipping and receiving area for MI and also stocks chemicals, electrical supplies, and hardware.
Location: Third floor, near the rear entrance/exit.
Contact: Tony Filotei
Telephone: x8-3212

Mellon Institute Copy Center
Copying facilities for use with departmental account number.
Location: Third floor, Room 349
Contact: Jack Thorpe
Telephone: x8-5114

**Mellon Institute Post Office**
The MI Post Office handles U.S., international, and campus mail.
Location: Third floor, near the rear entrance/exit.
Contact: Caitlin Zunic
Telephone: x8-3170

**Undergraduate Program Office**
Many instructors use this as a common location where TAs pick up student papers.
Location: Doherty Hall
Contact: Sito Narcisse
Telephone: x8-2318

**Undergraduate Computer Cluster**
These Macs and PCs are for chemistry major use and can be a place for you to check email conveniently when you are in Doherty.
Contact: Sito Narcisse
Telephone: x8-2318

**Undergraduate Laboratories**
The Doherty Hall labs are the location for the laboratory courses in which many graduate students work as TAs.
The recent $26 million renovation provides an eight story renovation to replace the current space and opened for classes in Spring 2003.
Locations: 1st, 2nd, and 3rd floors
Contact: Karen Stump, Director of Undergraduate Studies and Laboratories
Telephone: x8-2340

**University Student Services**
The following list will help you begin to get settled at Carnegie Mellon. For more detailed information regarding student services, please consult the latest version of the Graduate Student Handbook at [http://www.andrew.cmu.edu/~gsa/handbook/](http://www.andrew.cmu.edu/~gsa/handbook/)

**Enrollment Services ("The Hub"):** The Hub is the central location for obtaining your ID, course registration, and other enrollment services. It is located in Warner Hall, Room 28A. Please see the Enrollment Services website for [http://www.cmu.edu/hub/](http://www.cmu.edu/hub/) for additional information such as the schedule of classes.

**Housing Office:** Located in Morewood Gardens E-Tower, the Housing Office (x8-2139) will furnish you with listings of rentals in the vicinity. Their web site is [http://www.housing.cmu.edu/CommunityHousing/](http://www.housing.cmu.edu/CommunityHousing/). An online bboard at cmu.cs.market is a good resource for seeking roommates and purchasing second-hand furnishings.

**Payroll Office:** Detailed questions regarding your paycheck (income tax, etc.) should be directed to personnel in this office, located in the University Technology Development Center building on Henry St. Note that Tim Sager, Business Manager for the Chemistry Department, (x8-3343) should generally be consulted first.
**Student Health Service:** Located in the first floor of Morewood Gardens E-101 (X8-2157), this office can provide information regarding health insurance and a variety of basic medical care. Open from 8:30 a.m.-5:00 p.m. Monday-Friday. Doctor's hours are from 1:00 p.m.-5:00 p.m. The university student health insurance policy can be reviewed at [http://www.cmu.edu/policies/documents/StudentInsurance.htm](http://www.cmu.edu/policies/documents/StudentInsurance.htm).

**Counseling and Psychological Services (CAPS):** Morewood Gardens E-Tower (X8-2922) provides short-term counseling for stress, depression, anxiety, and other personal concerns and referrals to local psychologists and psychiatrists for continuing care.

**Campus Police (24 hr. service):** The number to call in case of emergency is x8-2323. Blue phones are also available in strategic locations around campus in case of emergency. This office also coordinates an escort service for students working late to ensure your safety on campus. Call the Escort Service at 8-RIDE or 412-268-7433 to place a request to be picked up.

**Eberly Center for Teaching Excellence:** The Eberly Center (Cyert Hall 110) provides seminars and individual consultations to help graduate students who wish to improve their teaching or prepare for future careers as faculty members. Justin Douglas (Llinas group, x3134) is currently serving as an Eberly Teaching Fellow who provides peer observations and feedback to TAs.

**Graduate Programs Office (GPO):** The GPO (Warner 419) is responsible for support programs for graduate students including some small travel grants, professional development seminars, and events for women and students of color.

**Intercultural Communication Center (ICC):** The ICC, in Warner Hall 418, provides language training and testing for all non-native speakers of English at Carnegie Mellon. Recommendations for training, where needed, are highly individualized and often combine short workshops, videotapes, and/or tutoring. More details about ICC programs and policies are available at [http://www.cmu.edu/icc/](http://www.cmu.edu/icc/).

**Office of International Education:** The Foreign Student Advisors, on the third floor of Warner Hall, are important contacts to assist you with questions about visas. This office also organizes the International Student Orientation held during the second week of August. You can contact them by email at gfsadv@andrew.cmu.edu.
Ph.D. Requirements

This section describes the formal requirements for the Ph.D. Degree in Chemistry at Carnegie Mellon as well as the review procedures designed to ensure steady progress toward that degree. It is intended to provide a clear guide to the steps leading to the Ph.D. Degree in Chemistry. The requirements for the Ph.D. Degree have been formulated to aid the graduate student to develop the proficiency expected of a research scientist in chemistry. In the interests of both the students and the faculty, the requirements for the Ph.D. degree carry a schedule for their completion. The schedule and review procedures are intended to speed the student's progress toward Candidacy and provide consistent focus on the student's research progress. Although possible, extensions will not be considered the norm. The Department will regularly inform students of their progress toward the degree (see Annual Reviews below). Failure to satisfy any requirement on a timely basis is cause for a dismissal from the graduate program following the procedures outlined below under Academic Actions. Note that an academic year comprises two semesters, with the summer not being construed as a semester.

In the event that the requirements are changed, students may adopt the new requirements or remain under the requirements in effect on their matriculation, at their discretion.

Attainment Examinations

By the end of the third semester, entering graduate students must pass an attainment requirement in each of three areas of chemistry: Organic, Inorganic, and Physical. The purpose of this requirement is to ensure sufficient background for graduate coursework and further research.

Expectations

Students may meet this requirement by either:

- Passing an attainment examination in each area, or
- Passing graduate course work in the area, typically 12 units, as deemed appropriate by the Graduate Program Committee with a grade of at least a B in each course.

Normally, all students will take attainment examinations upon arrival in the department for the purpose of guiding advising on courses. Based on the results of the exam, the choice among the options above is determined by the Graduate Program Committee after consultation with the student and advisor (if one has been selected). Note that if a student does not have sufficient background to enter a graduate course in a given area, he/she will need to take (or audit) undergraduate coursework approved by the Graduate Program Committee, and then either retake and pass the attainment exam in that area or pass appropriate graduate course work by the end of the third semester in residence. Attainment requirements must be satisfied before a student may complete the research progress report requirement.

Outcomes

Students may retake the attainment exam when it is administered to new students in January and/or the following August. Failure to pass the attainment requirements by the end of the third semester will lead to probation. Failure to
meet this requirement by the end of the second year will lead to a delay in completing the research progress report and/or termination from the program.

**Courses**

At least four graduate level courses in chemistry or related fields must be passed with an average grade of B (3.0) or better by the end of four semesters in residence. Students are encouraged to take at least one of these courses outside of their research area.

Courses may be taken in other departments or at the University of Pittsburgh (through cross-registration) with the approval of the Academic Advisor. The Department of Chemistry accepts the grading policy of other departments and the University of Pittsburgh for approved courses.

Students may request transfer of credit for up to two previous graduate courses from other institutions that are equivalent to courses offered at Carnegie Mellon. The student must provide a sufficient course description for such courses and obtain signatures from the Carnegie Mellon course instructor, his/her advisor, and the Graduate Program Committee. An approval form is available from the Graduate Program Assistant. A minimum grade of B is required to transfer credit for a course.

**Expectations and Outcomes.** The student must maintain an overall average of B for all courses taken (graduate and undergraduate courses, excluding research units). Any failure to comply with this requirement must be rectified by the end of the subsequent semester. Two semesters in which the coursework GPA is less than 3.0 will be considered grounds for termination from the Ph.D. program.

**SEE ONLINE GUIDE FOR:** Form for Transfer of Graduate Course Credit

**Graduate Teaching**

Every student must teach for two semesters as a Teaching Assistant, either as a recitation TA, laboratory TA, or a grader. The purpose of this requirement is to help students prepare for teaching and mentoring roles in academia and industry and to contribute to the quality and safety of instruction in the undergraduate program. This formal academic requirement is an important part of a graduate education and must be completed to the satisfaction of the instructor for that course. The duties of a Teaching Assistant require approximately 15-20 hours per week. Note that TA duties are one of the primary sources of financial support. Therefore, the expectations below are important for all TAs.

**Expectations.** The Department provides TA training each August specific to the roles of recitation TAs, lab TAs, and graders for which attendance is required for the first two semesters in which the student serves in a particular role. Teaching assistants are expected to fulfill all of the responsibilities of their role in a timely fashion and to make appropriate arrangements with the instructor at least 1-2 weeks in advance if they anticipate any difficulties in doing so. For example, instructors need to be consulted in advance if a TA would like to arrange for someone to teach a class for him or her. Barring unforeseen emergencies, travel arrangements must be made far enough in advance that they do not conflict with TA training and teaching responsibilities.

**Outcomes.** Instructors determine the expectations for each graduate TA assignment and are asked to inform the GPC and the Director of Undergraduate Studies if a TA does not adequately meet these expectations. To help TAs meet these expectations,
instructors are expected to provide written feedback, via a brief email questionnaire, early in the course. The feedback should be sent to the TA, cc’ed to the Director of Undergraduate Studies, and the GPC Co-Chairs. If a student is informed of a significant deficiency and does not address the problem adequately, that semester will not count toward the two semesters required for the doctoral degree.

**English Language Proficiency**

Each student for whom English is not a native language must demonstrate fluency in spoken English by the end of the first year in residence. The Intercultural Communication Center (ICC) has been established by Carnegie Mellon University to teach this skill, and administer the required fluency test. The purpose of this requirement is to ensure every student’s ability to communicate effectively with Department members and external colleagues about their research and to enhance their ability to contribute effectively to the Department’s educational programs.

**Expectations.** Students are generally expected to rate in Category 3 or better on the International Teaching Assistant Test by the beginning of the third semester in residence and to continue working toward Category 1 or 2. Starting in the first semester in residence, the Department expects a consistent effort in working with the ICC and in speaking English regularly in departmental activities to achieve these goals in a timely manner. While the ICC may recommend different workshops for different individual needs, a student’s total hours in workshops, tutoring and self-paced work at the ICC should be between 15-30 hours each semester until reaching Category 2 or 3 to be viewed as consistent effort.

Note that all students who are rated in Categories 2 and 3 who are working as TAs are required by Pennsylvania law to work concurrently with the ICC to improve their English fluency, typically through the workshops and/or individual tutoring.

In addition, the Department strongly encourages students to use English day-to-day in discussing their research since non-technical conversations in English often do not improve fluency on scientific topics. Advisors are also encouraged to talk directly with students when problems with English appear to interfere with communication about research and to inform the GPC as early as possible when they have concerns in this area.

**Outcomes.** Good standing in the department may be jeopardized if a student neglects to work sufficiently on their English fluency, based on the ITA Monitoring reports recording participation in ICC activities. However, because the Department recognizes that language learning rates can vary substantially, the deadline of reaching Category 3 by the beginning of the third semester may be adjusted for individual students’ needs as long as the student maintains appropriate, consistent efforts to improve. Failure to reach Category 3 by the beginning of the third semester may delay completion of the formal seminar requirement.

Failure to make sufficient efforts in line with recommendations from the ICC and the Department may lead to probation after one semester. Failure to sustain consistent efforts to improve English fluency will lead to a delay in completing the research progress report and/or termination from the program.

**SEE ONLINE GUIDE FOR:**
ITA Test Category Descriptions
http://www.cmu.edu/ita/ITA/ITAscore.shtml
Research Advisors

A Research Advisor is to be selected from the Chemistry faculty by mid-semester of the second semester in residence. This involves mutual agreement between the student and the faculty member, and requires approval by the Department Head. Selecting an advisor and joining a lab/group in the first semester is encouraged when the student is confident of his/her interests. Where co-advisors are desired, both advisors, the student and the department head must agree.

Expectations. In general, students should actively seek out faculty during the first semester to discuss their research interests. In addition, students are encouraged to visit regular group meetings to learn more about the ongoing research and meet others in the group.

Prior to selection of a Research Advisor, students are strongly encouraged to discuss their research interests with a minimum of three faculty members. Moreover, the students should get to know the faculty widely, get advice from students whose studies are further advanced, and visit with faculty in their offices. It must be understood that the chosen advisor will occasionally decline the relationship, either because of overload, lack of sufficient research support or intellectual compatibility. A student without a Research Advisor may not be eligible for financial support in the summer.

The Research Advisor becomes de facto the Academic Advisor to the student. The primary responsibility of the Research Advisor is directing the research for the dissertation, but also includes guidance for meeting the other Ph.D. program requirements, general educational advice, career planning, and often job search assistance.

Either the student or the Research Advisor may terminate their relationship. A student otherwise in good standing may then select a new Research Advisor on mutual agreement between the student and the faculty member, and approval by the Department Head. A student needs to join another group prior to summer in order to continue in the Ph.D. program.

Advisory Committees

In consultation with the Graduate Program Committee and his/her advisor, a student will select a Research Advisory Committee by the beginning of the third semester in residence. The purpose of this Committee is to discuss the student's progress annually and provide additional guidance on research and overall professional development. This committee will comprise the membership of the examination committee for the research progress report and original research proposal, although the Graduate Program Committee may add another member if additional expertise is needed in a specific area. In addition, after the student advances to candidacy, the Advisory Committee will meet with the student annually in Dissertation Progress Meetings to support timely completion of their Ph.D. A typical Advisory Committee will consist of the Research Advisor and two other Chemistry faculty members, normally from the Tenure Track or Research Track. When it would be advantageous for the student's research, one of these members may be from outside the department. Note that each faculty member may serve on a limited number of these Advisory Committees to ensure that he/she can provide the appropriate amount of attention to each student. Therefore, students are typically advised to have committees with three faculty members; students with co-advisors should have four members.

The student will also select a Chair of the committee, different from the Research Advisor, whose role is to oversee the oral exams for the research progress report and original proposal, to provide general guidance regarding the original proposal, and to help in preparing for dissertation progress meetings.
Formal Seminar

Each student must present a formal seminar during the third semester of residence. The seminar may be given in an earlier semester if the student is ready.

The purpose of the seminar is to train students to speak to an audience of faculty and peers about chemistry and to read the research literature appropriately. Students will enroll in 09-911, Graduate Seminar for their first four semesters, and receive course credit for delivering their seminar and providing constructive feedback to other students on their presentations.

Expectations. The topic may be chosen by the student with the approval of the student's advisor and the GPC co-chairs. Students may choose a seminar topic to serve as a foundation for the original proposal. An extension to present the seminar in the fourth semester in residence may be requested by petitioning the Graduate Program Committee, explaining what makes the circumstances exceptional and proposing an alternate deadline.

The seminar must be based on published work done in other laboratories. In general, seminars should draw on many articles from the literature and represent a synthesis of ideas that goes beyond summarizing individual pieces of research. An annotated bibliography should be submitted two weeks in advance of the presentation to the course instructor and student’s advisor. Presentations are expected to be approximately 30–40 minutes in length, with 10–20 minutes of questions and discussion with peers and faculty. Students are advised to arrange a practice talk with their advisor and others to prepare. Additional guidelines are available in the supplemental materials section and by meeting with GPC members.

Outcomes. Formal evaluation will be by the course instructor, the student’s advisor, and one other faculty member selected by the student (ideally a member of his/her Advisory Committee), and will include evaluation of responses to questions. The student will receive detailed feedback and constructive suggestions on the seminar in writing and in person from at least two faculty members, along with written feedback from the audience.

Should the seminar be determined to be deficient (recorded as failure), the advisor may allow the student to repeat the requirement before their Advisory Committee or in the Graduate Seminar setting. In this case, the deficiencies must be communicated in writing by the course instructor and advisor to the student and the Graduate Program Committee, along with a new deadline for re-presenting the seminar. The student may not proceed to defend the research progress report without a satisfactory performance on the formal seminar.
Research Progress Report

Each student must write and present a detailed progress report on the proposed thesis project and present that to both the department and to the Advisory Committee in the fourth semester in residence. The purpose of the report is to demonstrate that the student has achieved a substantial level of understanding of the theoretical and/or experimental background of the thesis project, is making appropriate progress in obtaining results, and can discuss their ongoing work in a clear and professional manner. The report includes a poster presentation to the entire department, a written report, and an oral exam by the Advisory Committee.

Poster Presentation. The report is to be presented as a formal poster presentation, following ACS format, with an accompanying research overview paper (details described below). The presentation must include the scientific objectives in the thesis research, an overview of the necessary background material, the theoretical and experimental techniques used, and representative results obtained to date. Students should expect to present their research in approximately 5-10 minutes, repeated 3-4 times in round-robin style, during the day of the poster session and to answer questions from a wide variety of faculty members and graduate students. Attendance at the poster session portion of the progress report may be by any of the Chemistry Faculty, graduate students, or other interested members of the department or university.

Written Progress Report. In addition, a 10-15 page research overview, or equivalent submitted journal articles or preprints on the student’s work, must be presented to members of the Advisory Committee and the Graduate Program Committee at least one week before the scheduled poster session. The purpose of the paper is to summarize the student’s research progress to date and provide context for the work presented at the poster session. Therefore, the report should include:
- an overview of the relevant theoretical and/or experimental literature,
- methods, results and discussion of work-to-date, including addressing major difficulties encountered, and
- a brief discussion of possible future directions for the research.

Oral Exam. Within 1-3 weeks after the poster session, the student will meet with the Advisory Committee for a private oral exam on his/her research progress. The purpose of the oral exam is to ensure that the student has the necessary background knowledge to conduct his/her research. During this oral examination, the student is expected to demonstrate a thorough understanding of the literature and methods relevant to the research, including subject matter tangential to any material in the written report or oral presentation and fundamental theoretical or experimental concepts relevant to the work. The student should also be able to discuss possible future directions for the research. Attendance at the examination may be by any of the Chemistry Faculty, although they will be nonparticipating spectators.

Timeline. The written research progress report should be presented to the Advisory Committee at least one week before the scheduled poster session. When the paper is submitted, a date for the oral exam should be arranged that is acceptable to all committee members and falls within 1-3 weeks of the poster session. The student must receive both oral and written feedback from the committee on the day of the exam.

Outcomes. Should the progress report be determined to be deficient (recorded as failure), the Advisory Committee may allow the student to re-defend the progress report before the committee as a group. In this case, the deficiencies must be communicated in writing by the Advisory Committee Chair to the student and the Graduate Program
Committee, along with a new deadline for re-defending the progress report. If the deficiencies are deemed minor, the student's performance may be recorded as a conditional pass and the student required to either revise or re-present. As above, the deficiencies and a new deadline should be reported in writing by the Advisory Committee Chair to the student and the Graduate Program Committee by the next day. Approximately 1-2 months would be the typical time allotted for revising the report and/or repeating the oral exam.

SEE ONLINE GUIDE FOR:  
Guidelines for Research Progress Report, Poster and Oral Exam  
Agenda for Progress Report Orals

**Original Research Proposal**

Each student is expected to write and defend an original research proposal during the sixth semester of residence. The purpose of the proposal is to demonstrate that the student has the ability to generate ideas for original research and to defend the methods and importance of the research.

**Topics.** To ensure sufficient originality and promote feasibility within the desired timeline, topics must be approved by the student's Advisory Committee and at least one member of the Graduate Program Committee (see Timeline below). The topic need not exclude the general field of the student's research but should use some primary sources outside his/her specific dissertation topic. In general, topics should go at least one step beyond what has been published. In addition, to the student's knowledge, work on the same hypothesis should not have been proposed before. In order to produce work distinct from the thesis topic and to facilitate an oral exam of appropriate scope, depth and rigor, students are encouraged to propose work that could conceivably be done in their lab or group (however not restricted to the instrumentation currently available). Students who wish to pursue work relatively distant from their field of interest are advised to ensure that faculty members with relevant expertise are available to consult and/or serve as an additional examiner.

One-page descriptions of topics are due December 15 for students under the new Ph.D. requirements approved in Fall 2000. Proposed topics should be submitted to the Advisory Committee and at least one member of the GPC at that time. If a student has not received his/her entire committee's approval and the approval of one member of the GPC by February 15, the student will need to have an Advisory Committee meeting within the next 1-2 weeks. The purpose of this meeting is to allow faculty to resolve directly any concerns or differences of opinion about the topic. Note that typical reasons for rejecting a topic would include insufficient chemical content involved in addressing the question, lack of feasibility, or lack of sufficient distinction from the student's dissertation research. If the committee's concerns are not typical ones, the committee chair must clarify their concerns to the student and to the GPC, in writing, at the end of the meeting. If the student is not able to address their Advisory Committee members' concerns successfully by February 28, the student will be put on probation. One significance of this probation is that subsequent failure to write and adequately defend the proposal by the end of the semester would be grounds for termination from the program. Note that students entering in January will have their deadlines on May 15 of their fifth semester for topic submissions and July 15 for final topic approval.

**Written Proposal.** Like proposals submitted to a funding agency, students' original proposals will be expected to:
1. Include an abstract,
2. State the motivating scientific hypothesis,
3. justify the importance of the scientific problem,
4. review the relevant theoretical and/or experimental background literature,
5. propose the specific research, including details about the theoretical and/or experimental techniques and an estimate of capital costs if nonstandard or specialized equipment is required,
6. predict results, including discussing possible outcomes and demonstrating that the approach is feasible by calculation or reference to previous literature, and
7. discuss the significance of the research.

The format should follow NSF proposal guidelines. Proposals should be 15 pages of text, including figures but excluding references, in a font no smaller than 12 point Times with 1.5 spacing. The student is free to consult with anyone, including the advisor, in developing the proposal, but the advisor’s role should be non-directive and the work should represent the student’s own creative thinking. A final version of the proposal must be distributed to Advisory Committee members at least one week before the scheduled examination date.

Oral defense. The defense comprises a public seminar (approximately 30-45 minutes in length) and a private oral examination by the student’s Advisory Committee. One more member may be added by the Graduate Program Committee if more expertise in a specific area is desirable. Attendance at the examination may be by any of the Chemistry Faculty, although they will be nonparticipating spectators. During this oral examination, the student is expected to demonstrate a thorough understanding of the literature and methods relevant to the proposal, including subject matter any material mentioned in the written proposal or oral presentation. While some of the questions may not have clear-cut answers, the Committee will evaluate the student’s ability to reason effectively and draw appropriately on a broad range of knowledge to do so.

Timeline. Each student is expected to contact each member of his/her Advisory Committee, and at least one of the Graduate Program Committee members (if none is on the student’s committee), either by email or by scheduling a meeting, during the fifth semester to discuss potential topics and gain approval for a proposal topic. The topic should be presented in writing as a long abstract or problem statement (approximately 1 page with a few primary references). It is the responsibility of the members of the Advisory Committee to inform other members of any objections they have to the topic. All Advisory Committee members must agree that the proposed topic is acceptable. The GPC member will be a nonvoting participant present to anticipate potential concerns. When the topic is approved by the Advisory Committee, the student should immediately set up the following appointments:
- an individual follow-up meeting with the Advisory Committee Chair to occur approximately 6 weeks later to discuss progress on the proposal and
- a defense date within 10-15 weeks of the topic approval that is acceptable to all committee members.

The student must be sure to provide the dates above to the Graduate Program Committee for their review and approval. Note that the GPC meeting to review petitions for extension will usually be held the 3rd week of the spring semester.

Outcomes. Should the research proposal be determined to be deficient (recorded as failure), the Advisory Committee may allow the student to submit and defend a revised proposal. In this case, the deficiencies must be communicated in writing by the Advisory Committee Chair to the student and the Graduate Program Committee, along with a new deadline for re-defending the proposal. If the deficiencies are deemed minor, the student’s performance may be recorded as a conditional pass and the student required to either revise or re-defend, again with the deficiencies, conditions for passing, and a new deadline reported in writing by the Advisory Committee Chair to the student and the Graduate Program Committee by the next day. Approximately 1-2 months would be the typical time allotted for
revising and re-defending, with the goal of making the time as short as is reasonable for the required work. The student may not advance to candidacy without a satisfactory performance.

SEE APPENDIX FOR: Guidelines for Original Research Proposals
Agenda for Original Proposal Oral Exam

Status in the Program and Advancement to Candidacy

Students' status in the program will be reviewed each year (described below under Annual Reviews). Upon successful completion of the research progress report and oral exam, a student's status goes from "graduate student" to "Ph.D. student" to designate completing a major portion of the requirements for the Ph.D.

Completion of the following requirements will be formally acknowledged by Advancement to Candidacy for the Ph.D. degree in Chemistry (also known as the status "Doctoral Candidate"), and will mark attainment of the status designated All But Dissertation (ABD) by Carnegie Mellon:

- Attainment examinations or approved coursework
- Selection of a Research Advisor
- Selection of an Advisory Committee
- At least four graduate courses in chemistry or related fields with an average grade of B (3.0 or better)
- Formal Seminar
- Research Progress Report
- Original Research Proposal
- Satisfactory teaching for two semesters as a Teaching Assistant
- English Language Proficiency at the level of Category 3 on the ITA test (if a non-native speaker of English).

Students meeting the normally expected deadlines reach candidacy by the end of the third year. ABD students must complete their remaining degree requirement, namely produce an approved dissertation, within seven years of advancing to candidacy. Extraordinary circumstances may necessitate the department to seek an extension of the candidacy status. An extension, however, requires approval by the Dean. Additional information about ABD policies, leaves of absence, and in absentia status is available in the Graduate Studies Office.

Dissertation Progress Meetings

Expectations. To ensure annual discussion of the student's progress after he/she advances to candidacy, the Advisory Committee Chair should work with the student to convene a meeting each year after the third year. In the fourth year, the meeting must be held by mid-semester of the seventh semester in residence. The goal of the meeting (in most cases, though it may vary with the student's research group) would be to review the scope of a preliminary dissertation outline and very rough timeline for completing the needed work. In the fall of the fifth year (and if needed, sixth year), the goal of the meeting would be to discuss progress on the earlier plan and to identify and deal constructively with obstacles to completing the plan within the year. In both cases, a written summary of the meeting should be prepared by the Committee Chair and shared with the student, Advisory Committee members, and the Graduate Program Committee.
Outcomes. If, at any of these meetings, the Advisory Committee finds the student's performance to be inadequate, the student's Research Advisor and/or Committee Chair should communicate these concerns to the Graduate Program Committee within one week. The Graduate Program Committee will review the student's standing in the program at the time of the last departmental review. In serious cases of little or no progress, the Graduate Program Committee may place the student on probation.

Residency

University regulations require one year of full-time residency.

SEE WEBSITE FOR:  
MCS Policies on Doctoral Degrees such as In Residence vs. In Absentia  
http://www.cmu.edu/handbook/degree.html

Doctoral Dissertation

The student must write and publicly defend a Doctoral Dissertation. The University standard for the Ph.D. degree states that the thesis must embody the results of extended research, constitute an original contribution to knowledge, and include material worthy of publication. It must demonstrate the candidate's ability to conduct an independent investigation, to abstract principles from which predictions can be made, and to interpret in a logical manner facts and phenomena revealed by the research. This requirement must be satisfied within seven years of the attainment of ABD status, by regulations of the Mellon College of Science.

SEE WEBSITE FOR:  
MCS Policies on Doctoral Degrees such as Guidelines on Doctoral Thesis Committees  
http://www.cmu.edu/handbook/doctoral.html
M.S. Requirements

M.S. in Chemistry

Students may earn the M.S. in Chemistry in the normal course of pursuing the Ph.D. by fulfilling the requirements below. Note that students are not admitted for the purpose of earning the M.S. degree and the department does not offer financial support for students wishing to pursue the M.S. as a terminal degree.

Students who wish to complete the M.S. in Chemistry should contact Valerie Bridge, who coordinates with the Chair(s) of the Graduate Program Committee and the Department Head. The Department Head will designate a faculty advisor to oversee completion of the requirements.

Candidates must complete at least 96 units of work, distributed with some flexibility but subject to the following constraints:

1. A minimum of 48 units must be in graduate lecture courses in Chemistry.

2. No more than 18 units may be in undergraduate courses in Chemistry. These must be in upper-level courses (400 level or above) and may include no course equivalent to one previously required to complete a degree in any other college or university.

3. Relevant upper-level undergraduate or graduate courses in other departments or at the University of Pittsburgh (through cross-registration policies) may be taken for credit toward the 96 units, with the approval of the Director of Graduate Studies.

4. To be used for credit, no grade shall be lower than C. The average grade of 96 units, of the first 120 units attempted, must be at least B. Graduate Teaching, 09-931/2 may not be applied as course credit toward the MS degree.

5. Graduate research credit - candidates who elect to apply units earned in graduate research toward the MS degree must complete not fewer than 20 units of 09-861 (Graduate Research). If more than 25 units of graduate research are to be credited, substantial evidence of research accomplishment or proficiency must be presented. Such evidence can be in the form of a dissertation, or in the significant authorship of scientific publications, or the equivalent, and must be approved by the Research Advisor and the Director of Graduate Studies.

6. If no more than 25 units of graduate research are to be credited toward the MS degree, evidence of research proficiency may be provided by the successful completion of the Formal Seminar requirement of the Ph.D Requirements.

M.S. in Polymer Science

Within the general requirements of the Master of Science in Chemistry, the Master of Science in Polymer Science provides the basic background for scientists and engineers to pursue technical careers in industries that manufacture,
process and use polymeric materials. In consultation with an advisory committee, the student will arrange a course of studies designed to fit his or her background and career goals. Of the total 96 units, 36-48 units will be required in basic science. Students without prior research experience are encouraged to undertake a research project in collaboration with a faculty supervisor. Faculty members in this research area include Guy C. Berry, Edward Casassa, Tomek Kowalewski, Kris Matyjaszewski, and Gary D. Patterson.

**M.S. in Colloids, Polymers and Surfaces**

The Interdisciplinary M.S. in Colloids, Polymers and Surfaces (CPS) degree is a joint program with Chemical Engineering designed for professionals working in the polymer field. Participating faculty include Guy C. Berry, Edward Casassa, Andrew Gellman, Tomek Kowalewski, Kris Matyjaszewski, Gary D. Patterson, and Lynn Walker.

The program is open to students with a bachelor’s degree in science or engineering. Courses are arranged to permit a part-time student to complete the degree work in two years by attending late afternoon and evening classes and by working on a research project during the summer.
Annual Reviews and Program Oversight

Role of the Graduate Program Committee

The Graduate Program Committee (GPC) serves the following functions:

- Advises first-year graduate students on course selection and other academic matters until a Research Advisor is selected,
- Works with students' Advisory Committees to review and approve topics for original research proposals,
- Monitors students' progress in annual reviews, based on input from the advisor, and provides written feedback to students,
- Reviews petitions for extensions on program requirements,
- Meets jointly with the Graduate Student Advisory Committee at least once per year to discuss student feedback and concerns about the program,
- Provides ongoing assessment and review of the graduate program, proposing changes as needed, and
- Approves formal academic actions, other than granting of degrees, such as placing a student on probation or terminating a student from the program.

When an immediate action is required, the Chair(s) of the Graduate Program Committee may act for the Committee. The Chairs are also available to advise students on matters that they may wish to bring to the GPC.

Annual Reviews

Each fall the Graduate Program Committee will solicit brief status reports from each student in the program, along with a written response from the student's advisor, to serve as the basis for an annual review of students' progress through the graduate program. The primary goals of the Annual Review are (1) to check for and address significant concerns of students and/or advisors that may significantly affect a student's timely progress to the Ph.D. and (2) to facilitate advisor feedback on issues or skills important for students' future career development, particularly those that may otherwise fall into the background during the year. The major components of the review process are:

- The status report, approximately 1-2 pages long, addressing specific questions distributed in advance.
- Advisors meet each student prior to submitting written feedback to both discuss the student's status report and to enable the student to ask questions about the advisor's written feedback.
- Upon agreement of the advisor, the brief status report, along with the advisor's written feedback and other relevant data such as grades and ICC work, will serve as the basis for review by the Graduate Program Committee.
- The GPC provides brief written feedback including the student's standing in the program, strengths, and suggestions for improvement.

Since students do not attend the annual review meeting, they are encouraged to meet with the GPC Co-Chairs prior to the review if they have not had enough interaction with the current committee members. Advisors or students who have concerns that are difficult to express in the written status report or advisor feedback should consult with Rea Freeland or Linda Peteanu to discuss how to best communicate their concerns.
Petitions for Extension

An extension of any of the Department’s program requirements above may be requested by petitioning the Graduate Program Committee, explaining what makes the circumstances exceptional and proposing an alternate deadline. For example, serious illness or a death in the family would be exceptional circumstances, and the desire to finish a paper for publication would not be exceptional. In general, petitions for extensions should be received 6-8 weeks before the expected completion of the requirement or as soon as possible, depending on the reason for the extension request. Note that extensions for the original research proposal will be granted only in rare cases.

If a potential extension is discussed with either of the GPC Co-Chairs in person, it is the student’s responsibility to summarize any agreements made in writing for consideration by the GPC. Requests should not be considered approved until written approval comes from the GPC.

Academic Actions and Appeals

If a student is making poor progress through the program requirements or on dissertation research and no exceptional circumstances have been documented in petitions approved by the Graduate Program Committee, the GPC may place a student on probation. If a student is already on probation and the areas for improvement are not adequately addressed on the timeline specified in the annual review memo, the GPC may require the student to withdraw from the graduate program. In addition, an advisor may also terminate a student from his/her group by first giving writing notice of problems to be addressed and a timeline for addressing them. When the problems are serious enough to jeopardize a student’s standing in the Ph.D. program, the advisor will generally consult the GPC to determine whether a warning, probation, or termination is warranted. A student without an advisor normally will not receive funding and cannot remain in the Ph.D. program.

A student will not be terminated from the program without the warning of at least three months of probation, nor will financial support be terminated without at least six months warning. A terminal semester with TA support will typically be offered to help the student make future plans or complete requirements for an M.S. in Chemistry or Polymer Science. If a student is notified of a possible end to funding in the fall and then a termination is warranted in the spring, funding for the summer months may be possible but cannot be guaranteed.

The student may appeal this decision in writing to the Department Head as well as use the MCS grievance procedures by first contacting the departmental ombudsperson and, if a resolution cannot be reached within the department, consulting with the Associate Dean for Special Projects about preparing a formal written grievance to the Dean.
Financial Matters

Tax implications of stipend support

All stipends are federally taxable. Information about tax implications of funding can be obtained from Sharon McCarl, MCS Associate Dean for Administrative and Financial Affairs.

Summer funding

Graduate student stipends are for the academic year. Summer support normally is provided from research assistantships funded by grants, etc., awarded to the faculty or fellowships/awards received directly by the student from internal or external sources. Limited exceptions may be made for summer support from the Department under some circumstances by prior arrangement with the Department Head, dependent on the available resources. In all cases, a faculty member’s decision not to support one of their students during the summer must be approved by the Department Head.

Policies on outside employment

Outside employment is prohibited for full-time graduate students in the Department of Chemistry during the academic year. Exceptions may be made for very limited outside employment when deemed appropriate by the Research Advisor and the Graduate Program Committee.

Outside employment is prohibited if summer support is provided. If summer support is not available, the student may seek outside employment with permission of his/her Research Advisory Committee.

Written notice of changes in financial support

Every effort is made to provide continuous support to students in good standing, within the limits of the available resources. The Department places a high priority on maintaining continuous financial support for graduate students, and provides notice to students about changes in their financial support, with a 6 month written notification, where possible, in the event of a change in the funding. If a student’s funding is lost, reduced, or reduced unexpectedly and continuous funding proves difficult to arrange, the student should first consult the Department Head and, if needed, follow the MCS Grievance Procedures by contacting the Associate Dean for Special Projects.

If a student is terminated from the Ph.D. Program, the student’s first notice of a possible change in financial support typically will be included when he/she is initially placed on probation. The probationary period will typically last 3-4 months. If conditions for reestablishing good standing are not met within that time, a student will typically receive a terminal semester in the department with funding through a TA position during the academic year and, dependent on departmental resources, other employment during the summer.
Additional Fellowships

Students are strongly encouraged to pursue all fellowships for which they are eligible and competitive. For example, outstanding U.S. citizens are eligible for NSF graduate fellowships at the beginning of their first and second years of a Ph.D. program. In addition, through 2005, a generous alumni gift has made possible a Legacy Dissertation Fellowship for which all ABD students in the department are eligible to apply. Announcements about additional opportunities are announced by email.

Attendance at Conferences

In most cases, decisions regarding funding for the student’s attendance at conferences and funding availability is at the discretion of the Research Advisor. The University provides additional sources of funding to support small travel grants through the Carnegie Mellon’s Graduate Program Office.
Additional Policies Affecting Graduate Students

Ombudsperson and Grievance Procedures

Rea Freeland serves as ombudsperson for graduate students to assist with difficult academic or personal situations where a confidential sounding board and/or an intermediary can be helpful. Examples of situations where students are encouraged to seek advice or assistance include:

- Difficulty in communications with advisor, particularly when those difficulties may lead to considering changing advisors or leaving the program
- Conflict with other group members that is difficult to resolve within the group
- Issues related to diversity or the departmental climate for those in groups who are historically underrepresented in science
- Personal concerns that interfere significantly with the ability to make timely progress in research or program requirements. These might be due to health, family or financial challenges.

Upon the student's request, conversations will be kept in confidence. If additional help is desirable, the student would be asked before sharing information with other parties. More about departmental ombudspersons can be found on the MCS GSAC website at http://www.cmu.edu/mcs/graduate/min092602.html#ombuds.

In the event that a difficulty cannot be resolved within the department, Rea Freeland in the capacity of ombudsperson for all MCS graduate students can also assist with following the MCS grievance procedures that enlist the Dean’s office in resolving difficult matters.

SEE ONLINE GUIDE FOR:  MCS Graduate Grievance Procedures
http://www.cmu.edu/mcs/policies/grievance.html

Changing advisors

A student may change research advisors at any time in the program. Typical reasons for such changes are shifts in research interests away from the advisor’s area or difficulties in advisor-student communication. The process of changing advisors will generally involve:

- soliciting a new advisor (typically done confidentially and with advice from the departmental ombudsperson),
- being accepted by that individual,
- determining how to discuss the desire for a change with the prior advisor,
- giving the prior advisor sufficient opportunity to discuss the situation (and potentially ways to address any concerns leading to the desire to change), and
- determining with the prior advisor and the Department what should be done to finish work in the former group and provide a smooth transition, similar to what would be expected leaving other types of jobs.

Students who are considering a change of advisors are encouraged to seek confidential advice on the details of these steps by consulting the Associate Head. Note that prospective advisors should generally keep discussions of change of advisor confidential until the student’s decision is final and the Department Head has approved of the change.
Leaves of Absence

In certain circumstances such as health problems or changes in family circumstances, students may wish to consider a brief leave of absence from graduate study. Details about whether and how to pursue this option are available by consulting Valerie Bridge or the GPC Co-Chairs.

Vacation norms

Graduate students in the department are entitled to take two weeks of vacation per year and should consult their advisors if they plan to be away longer. If travel, either for vacation or conferences, interferes with a student’s research or teaching responsibilities, the student should make arrangements for those responsibilities to be covered and consult with the supervising faculty member to be sure the arrangements are satisfactory.
**Summary of Timeline for Completion of Ph.D. Requirements**

This timeline is based on the typical time to complete the Ph.D. of 5-5.5 years, given timely completion of these requirements along with good progress in research. Variations occur in exceptional circumstances.

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<th>1st SEMESTER</th>
<th>2nd SEMESTER</th>
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<td>ICC work for 15-30 hours to reach Category 3 and/or to satisfy ICC requirement of 15+ hours of training concurrent with a TA assignment for those in Category 2 or Category 3</td>
<td>ICC work for 15-30 hours to reach Category 3 or concurrent with TA assignment for Category 2 or 3 TA requirement typically completed Commitment to research advisor by mid-semester</td>
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<th>3rd SEMESTER</th>
<th>4th SEMESTER</th>
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<td>English Language Proficiency completed by beginning of semester Advisory Committee formed by mid-semester Formal seminar completed Attainment requirement completed</td>
<td>Course requirement completed Research progress report completed, including poster, written report, and oral exam</td>
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<th>5th SEMESTER</th>
<th>6th SEMESTER</th>
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<tr>
<td>Original proposal topics due</td>
<td>Original research proposal completed, including written report, presentation, and oral exam ABD status typically achieved</td>
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<th>7th SEMESTER</th>
<th>8th SEMESTER</th>
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<td>ABD committee meeting, usually to review progress since 4th semester</td>
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<th>9th SEMESTER</th>
<th>10th-11th SEMESTER</th>
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<tr>
<td>ABD committee meeting, typically to review tentative thesis outline</td>
<td>Dissertation research and writing</td>
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Quick Contact Information

Graduate Program
Valerie Bridge, MI 404, x8-3150, vb0g@andrew.cmu.edu
Rea Freeland, MI 440B, x8-7981, rfs1@andrew.cmu.edu
Linda Peteanu, MI 825C, x8-1327, peteanu@andrew.cmu.edu

Administrative and Financial Matters
Brenda Chambers, MI 412, x8-1062, brendac@andrew.cmu.edu
Patsey Haddock, MI 509B, x8-2318, pw17@andrew.cmu.edu
Timothy Sager, MI 440, x8-3343, ts1c@andrew.cmu.edu

TA Responsibilities
Karen Stump, DH 1316, x8-2340, ks01@andrew.cmu.edu

Useful On-line Resources

Resources in the University Administration (key contact people for grads in various offices)
http://senate.web.cmu.edu/gsa/index.php?page=resource_list

Mellon College of Science Degree Policies (includes doctoral candidacy policies)
http://www.cmu.edu/mcs/handbook/degree.html

Graduate Programs Office (includes professional development and support for women and people of color)
http://www.cmu.edu/adm/gpo

Graduate Student Assembly (advocates for graduate student issues and provides social events)
http://senate.web.cmu.edu/gsa

Environmental Health & Safety (provides safety training and information for the University)
http://www.cmu.edu/ehs

Office of International Education (provides guidance on VISA issues)
http://www.studentaffairs.cmu.edu/oie

Intercultural Communication Center (helps international students develop English fluency for research and teaching)
http://www.cmu.edu/icc