Graduate Supervision

Guidelines for Students, Faculty, and Administrators
at the University of Pennsylvania

Penn
UNIVERSITY *of* PENNSYLVANIA

CONTENTS

PREFACE

This publication is being distributed to graduate students and faculty members throughout the University of Pennsylvania. It is intended to provide graduate students, faculty, and graduate groups with guidelines that promote good working relationships between supervisors and graduate students. Nothing could be more important for the University community. Excellence in supervisory practice helps students to fulfill their potential and facilitates everyone's research.

While models of supervision can vary across graduate programs at the University of Pennsylvania, we believe that there are some general guidelines, policies, and approaches that apply everywhere. These guidelines provide students with direction on choosing a supervisor, establishing a dissertation committee and maintaining a productive working relationship among all three. Students and faculty can find information in these pages about their respective roles and responsibilities in this important relationship as well as advice on conflict resolution. Appendix 1 provides supervisory checklists relevant to studies in the humanities, social sciences, physical sciences and engineering, and life sciences. Appendix 2 provides a list of related Web sites. Appendix 3 provides information about resources available to help students with the development of their writing skills. Appendices 4 and 5 are policies on patents and authorship credit. Appendix 6 reports the results of a Graduate Student Associations Council (GSAC) survey regarding students' expectations of faculty mentors and their own responsibilities toward their advisors.

This publication, based largely on one produced at the University of Toronto, is intended to promote conversations between faculty and students regarding their mutual expectations. While it focuses almost exclusively on the dissertation stage, recent studies indicate that good advising and mentoring that begin early in the student's career facilitates expeditious degree completion. Generally, each graduate program will provide a program-specific handbook detailing course and examination requirements, regulations, procedures and expectations of both students and faculty, from matriculation through graduation. Our hope is that this publication will support that effort and can serve as a starting point for further action.

– Andrew Binns, Associate Provost   – Cassondra Giombetti, President, GSAC

INTRODUCTION

This booklet is intended to assist graduate students, faculty supervisors, and graduate administrators in a critically important part of graduate education: the supervision of students' dissertation research and writing. The pages that follow describe some suggested "best practices" in graduate supervision, and set out the rights and responsibilities of both students and their supervisors. We hope these guidelines encourage all participants in the supervisory process to articulate their expectations clearly and thereby to reduce potential problems.

The supervision of graduate students is part of the University's core mandate. The work performed by graduate students forms a vital part of our research effort; good supervisory practices help students fulfill their potential and contribute to the University's research profile. At many universities, the terms of a supervisory relationship are left almost entirely to the discretion of individual graduate students and supervisors. While this approach often works well, it occasionally proves unsatisfactory. Some students, uncertain about the extent of supervision they should expect, are hesitant to approach their supervisors for help or to make clear their own plans and objectives; some supervisors occasionally neglect to contact their students or to assess work in progress adequately. A lack of clarity between student and supervisor with regard to expectations and responsibilities can adversely affect progress towards the completion of the degree. By providing this document to help clarify expectations and responsibilities, we hope both to reduce the potential for conflict and to facilitate the creative process of dissertation research and preparation.

Research degrees at the University of Pennsylvania are offered in many programs, extending across the full range of humanities, social sciences, physical sciences and engineering, and life sciences; therefore, it is not surprising that there exists considerable variation in styles and manners of supervision. These range from those in which students receive scrutiny and interaction on a continuous basis to those in which students are seen as essentially independent researchers who receive only periodic guidance from supervisors.

Regardless of the model of supervision, there are general guidelines, policies and suggestions that apply to what is considered good supervisory practice. While it is important to acknowledge the leadership role that supervisors play in the relationship with graduate students, it is paramount for graduate students to maintain open channels of communication and to find out for themselves what may be needed for their academic success.

Supervisory checklists are included as appendices. Students and supervisors are encouraged to use them as guides to supervisory practices appropriate to their field.

INTRODUCTION

While some graduate groups may assign an advisor to a student upon admission to the program, in most graduate groups the responsibility for finding a dissertation supervisor rests with the student. The choice of a faculty member who will supervise the dissertation work required to fulfill degree requirements is one of the most critical decisions a graduate student will make. A student will spend several years working with the faculty member of choice, and that choice will significantly affect the direction of the student's career. Choosing a dissertation supervisor, therefore, is not a decision to be taken lightly. A student undertaking dissertation work needs a supervisor who will be not only academically competent in a particular area but also willing to act as the student's advocate when necessary. It is important that the student be able to work and communicate effectively with the supervisor and not feel overwhelmed or intimidated in the relationship. Dissertation work can be lonely and isolating (especially in the humanities and social sciences). Each student requires the guidance of someone who will stimulate thought, who has sufficient interest in the student's topic to produce new insights jointly, and who will challenge the student to think in a novel manner about the research.

OBTAINING INFORMATION ON POTENTIAL SUPERVISORS

In most graduate groups, students are responsible for finding their own supervisor. Here is a list of strategies students might use when beginning to look for a supervisor:

Graduate Group information. The graduate group Web site or handbook is a valuable source of information on potential supervisors. Many graduate groups have developed Web sites that profile each faculty member, describing the faculty member's area of research, recent publications, and other academic activities. The graduate group chair can also provide valuable advice on potential supervisors and can help students to become familiar with any specific graduate group policies on supervision.

Students may get to know the potential supervisors whose research interests parallel their own by taking a course or doing a lab rotation with the potential supervisor, acting as a teaching assistant (if possible), or attending seminars at which the faculty member is speaking. Students may also conduct literature searches to assess potential supervisors' publications and preferred journals.

Graduate students working with the potential supervisor are an invaluable source of information. Students who are currently working with a particular supervisor can be asked about their experience with that supervisor and about the supervisor's expectations and working methods. Anyone choosing to work with that faculty member may have close, future interaction with these students, especially in lab-based science programs in which it is common for a supervisor's graduate students to work in close association. While some students may have strong and possibly different opinions on a supervisor, if the general responses are consistent, they should be taken into consideration.

Students should make an appointment to see potential supervisors. Meeting a potential supervisor is an essential step in determining whether a faculty member would be a good fit for a student's area of interests, and for learning about that faculty member's approach to work and study in general. Such a meeting should provide an opportunity to find out significant information about a professor and his or her style. The following is a list of issues that might be covered:

- Have you supervised a graduate student before?

- How many graduate students do you supervise? (Students may not want to pick a supervisor that has too many students already.)

- Typically, how much time do you expect students to take to complete their dissertation?

- How will we agree upon my research topic?

- Are there sufficient funds available for the research project?

- What are your expectations regarding funding of your graduate students? What will be the sources of my stipend? What is the amount of my stipend? How long will my stipend last?

- What level of independence is expected of your graduate students?

- Is there any specific knowledge I need to have before starting to work with you?

- Will I have the opportunity to attend conferences? Publish papers? Present work at colloquia?

- Typically, how often do you meet with your students?

- Are you planning a sabbatical leave soon? If so, what arrangements for continued supervision will be made during your absence?

- How soon will a dissertation committee be set up and how often will it meet?

- What opportunities would I have in this area of research when I graduate?

- What qualities are you looking for in a person you are supervising?

- Will guidelines be drawn up for working together?

- How will I receive feedback on my progress?

These questions are designed to help the student and the potential supervisor determine whether a good match exists. Where appropriate, the student may also want to ask about the order of authorship on publications and intellectual property issues.

The choice of a dissertation supervisor is a decision to be made with a great deal of care and consideration. Discussion of the topics listed above will also give faculty members a sense of what students expect in terms of meetings, feedback, turn-around time on submitted work, etc. Taking time to explore these issues should result in a productive relationship for both student and supervisor: a relationship that culminates in a piece of original research, completed within a reasonable time period.

WORK EXPECTATIONS, PROVISION OF STRUCTURE, AND TIMELINES

The provision of structure by supervisors is crucial at all stages of a graduate student's work, but is particularly important during the initial phase of dissertation work. It is essential that supervisors and students have a shared set of expectations about all aspects of supervision. Each needs to understand the constraints that operate on the other and the effects that these may have on supervision. Good supervisors make their expectations clear to students on issues such as the need for regular meetings, mastery of methodological skills, conference publications and conference presentations, timelines for degree completion, etc. Once these expectations are clearly outlined, it is much easier to develop a positive, productive relationship. The following are suggested topics to cover in initial discussions between student and supervisor:

- Frequency of contact.

- Preferred communication method (e.g., e-mail, voice mail, in person).

- Timelines for each stage of the work.

- Frequency of submission of work (in writing or through presentation).

- Type of feedback expected.

- Whether students work in the graduate group or at home/library. Hours of work.

- Nature of any directed reading program.

- Monitoring, evaluation, and reporting of progress.

- Additional training, fieldwork requirements.

- Whether publication is expected. When? Whether papers will be presented at conferences. Expectations regarding co-authorship. Availability of funding for travel and registration at conferences.

- Intellectual property issues.

- The establishment and membership of the dissertation committee.

THE DISSERTATION COMMITTEE

The academic experience is greatly enhanced if faculty members other than the direct supervisor are readily and formally available for consultation and discussion with the graduate student. To provide this element of supervision, a dissertation committee should be put in place for the Ph.D. student early in the dissertation stage. The graduate group is responsible for monitoring the progress of the student through the dissertation committee, as follows:

- A dissertation committee should consist of the supervisor and at least two other members of the Standing Faculty. While some graduate groups limit participation on the dissertation committee to members of the graduate group or affiliated department, others encourage/require appointment of a faculty member from another Penn department, to encourage an interdisciplinary perspective.

- It is recommended that the dissertation committee meet with the student, as a committee, at least once per year to assess the student's progress in the program and to provide advice on future work.

- The committee submits a written report to the graduate group chair, at least once per year, detailing its observations of the student's progress and its recommendations.

- The student must be given the opportunity to respond to the committee's report/recommendation and to append a response to the committee's report.

- Copies of the report shall be given to the student and filed with the graduate group office.

Membership on the dissertation committee should be recorded on the Student Information System (SRS). The graduate division office at the home school will monitor compliance with this requirement through SRS reports and an annual audit of the official student file.

Good supervisory practice entails responsibilities not only of the supervisor but also of the student. When a student enters a doctoral program, that student commits time and energy necessary for research leading to a dissertation that makes a substantial and original contribution to knowledge. It is the responsibility of the student to conform to University and program requirements and procedures. Although it is the duty of the supervisor to be reasonably available for consultation, the primary responsibility for keeping in touch rests with the student. The student's responsibilities include the following:

- Becoming familiar with, and adhering to, the rules, policies, and procedures in place in the graduate group, home school, and the University as outlined in available resources such as graduate group student handbooks/web sites.

- Adhering to all deadlines and policies regarding registration, leaves of absence, limitations on time and recertification, dissertation submission and graduation.

- Preparing a research plan and timetable in consultation with the supervisor as a basis for the program of study, including any proposed fieldwork.

- Meeting with the supervisor when requested and reporting regularly on progress and results.

- Establishing a dissertation committee, with the assistance of the supervisor, early-on in the dissertation stage, as required by the graduate group.

- Keeping supervisors informed on how they can be contacted and informing them of any significant changes that may affect the progress of the research.

- Acquiring the necessary health and safety skills for undertaking the proposed research and adhering to the ethical practices appropriate to the discipline.

- Maintaining good records of each stage of the research.

Within the context of their role as supervisors, a faculty member's primary task is to guide and inspire his or her students to reach their scholarly potential. At the same time, each supervisor must try to ensure that each student is in compliance with the rules and regulations of the University. The supervisor should promote conditions conducive to a student's research and intellectual growth and provide appropriate guidance on the progress of the research and the standards expected. Good supervisory practice includes the following:

- Guiding the student in the selection and planning of an original research topic that can be successfully completed within the expected time frame for the degree program.
- Establishing with the student a realistic timetable for completion of various phases of the program.
- Providing students with realistic times for provision of feedback and ensuring students adhere to the timetable.
- Ensuring that students have an understanding of the relevant theories and the methodological and technical skills necessary for the research, including provision of information through an ethical review process where applicable.
- Establishing with the student a dissertation committee early-on in the dissertation stage (e.g., after the qualifying exam), and ensuring that the committee meets with the student at least once a year, as a committee, and provides an annual written report of the student's progress.
- Being accessible to give advice and provide feedback.
- Making arrangements to ensure continuity of supervision during leaves or an extended period of absence.
- Encouraging participation in graduate group seminars and colloquia.
- Encouraging and assisting students to attend and present work at local, national, or international conferences and to publish their work in appropriate journals.
- Advising on matters of career options, job market, preparation of the CV, and strategies for launching a career in research.
- Contributing to the student's professional development and funding through letters of reference and general advice.
- Ensuring that the research environment is safe, equitable, and free from harassment and discrimination.
- Avoiding personal or business relationships that may constitute a conflict of interest.
- Being honest with the student when academic performance is not meeting expectations. While dealing with inadequate academic performance can be difficult, it is in no one's best interests to prolong a program of study when success is unlikely.

Students sometimes experience personal difficulties. These can include family difficulties, problems in personal relationships, cultural adjustments, financial pressures, and problems associated with employment. The importance of these various problems should not be under-emphasized. Clearly supervisors are not trained counselors and cannot be expected to help in a professional sense, nor should they intrude into the personal lives of their students with unwanted advice. However, supervisors should try to ensure that their relationships with students are such that students will be comfortable telling supervisors that they are having significant personal difficulties. Sometimes a timetable can be rearranged or a referral made to appropriate resources.

The chair, the graduate group coordinator, and other support staff play key roles in the lives of graduate students. The graduate group must endeavor to create an environment within which scholarly work by graduate students can flourish, and problems can be resolved in an effective manner. Students should take the time to get to know the graduate group administrators. In this way, students can stay current with regulations and graduate group activities and events.

Responsibilities of the graduate group include the following:

- Producing a handbook/brochure/web site that outlines program requirements, regulations and procedures, financial support and information on faculty members and their area of research/expertise.
- Having procedures in place to facilitate the search for a supervisor and to allow a change in supervisor in the unlikely event that this becomes necessary.
- Establishing an effective communication system with graduate students (i.e., mailboxes and/or e-mail lists) and workspace, where possible.
- Providing orientation sessions for both new and continuing students. Information conveyed in these sessions might include: overview of program policies and requirements, areas of faculty expertise for research supervision, expected performance and timelines for completion of degree requirements, intellectual property policies, publication and authorship issues, scholarship/funding information, information on policies regarding the proper conduct of research, sexual harassment, safety and workplace regulations, and procedures for complaints and appeals.
- Ensuring that the student's dissertation committee meets once a year and that a written report is filed in the official student file at the graduate group office.
- Providing a mechanism for resolving problems, which may arise between graduate students, supervisors and/or members of the dissertation committee.
- Establishing a graduate group appeals process to review formal complaints from students.
- Ensuring a safe, equitable and fair working environment for students, and informing them of all relevant safety and work regulations.
- Being sensitive to special academic needs and concerns that may arise for international students, students from underrepresented groups, students with disabilities, or mature students with family responsibilities.
- Disbursing financial support in a fair and equitable manner that is consistent with the graduate group's funding policy.

If a dispute or concern arises between a graduate student and supervisor with respect to the supervisory relationship, the student and supervisor should try first to resolve any difficulties amicably between themselves. If informal discussion does not resolve the problem, there are several avenues to pursue within the graduate graduate group: in most cases, the graduate group chair should be consulted first. If the graduate group chair is unable to find a satisfactory solution, advice may be sought from the relevant associate dean of the student's school or from the University Ombudsman (113 Duhring Wing, Phone: 215.898.8261 Email: ombuds@pobox.upenn.edu .) If all else fails, and if the nature of the issue is academic, a student may pursue a formal academic appeal by contacting the Office of the Associate Provost, 122 College Hall, telephone 215.898.7227.

Here are some further considerations related to conflict resolution:

- All conflict is not necessarily to be avoided. Conflict can result in creative solutions and when the conflict involves ideas, it can advance knowledge.

- There is a significant power differential in the student/supervisor relationship, but the very nature of the relationship and the academic enterprise requires that ideas and assumptions may be challenged.

- Expectations should be clear and commonly understood on both sides; put them in writing, if necessary.

- Conflict should be handled early: it is easier to handle smaller issues as they arise, and sometimes options for resolution may diminish over time.

- Not all conflict can be resolved informally. If you have tried your best but you have not resolved the issue, follow the recommended route to a more formal resolution

CHECKLISTS for graduate supervisors, students, and graduate groups in the humanities, social sciences, physical sciences and engineering, and life sciences.*

HUMANITIES

CHECKLIST FOR SUPERVISORS

A checklist on good supervisory practice might include the following questions:

Mutual Expectations:
1. Have you developed an understanding with your doctoral students concerning the mechanics of supervision, the kind and amount of advice you are able and willing to offer, the frequency and regularity with which you expect to see each student, a "plan of campaign" (e.g., the timing of submission of a dissertation outline, of draft chapters), and your mutual expectations concerning the quality and originality of the completed dissertation?

Definition of Project:
2. Has the topic of research been refined in the initial stages of work? Is the scope of the dissertation project excessively ambitious? Too narrow? Are you satisfied with the student's progress and background knowledge of the subject?

Arrangements for Return of Work:
3. Do you make and observe clearly stated arrangements for the return of work within 10-15 business days after it is submitted to you? Under circumstances where this is not possible, do you inform the student of the longer time that will be required to return the material, specifying a different target date?

Absences from Campus:
4. Do you inform your students when you plan to be on research leave or absent for an extended period of time from the University? Have you made satisfactory arrangements for supervision of the student during this time?

Requirements for Successful Submission:
5. Is your student aware of University, faculty and program requirements, and standards to which the dissertation is expected to conform?

Funding and Professional Activities:
6. Do you support your students in their efforts to acquire external funding, to publish scholarly articles, or to present conference papers?

CHECKLIST FOR STUDENTS

It is the responsibility of the student to conform to University and program requirements and procedures with regard to such matters as research ethics, dissertation style, etc. Although it is the duty of the supervisor to be reasonably available for consultation, the primary responsibility for keeping in touch rests with the student. A checklist on how to build a good supervisor/supervisee relationship might include the following questions:

Appropriateness of Supervisor:
1. Have you determined whether the program and area in which you wish to concentrate are staffed by several active faculty members? Before choosing a supervisor, have you consulted the list (available through your graduate group) of faculty research interests and publications? Have you asked students in the program currently working with a prospective supervisor what their experience has been?

Communications:
2. Does your supervisor know how to reach you (mail, telephone, other) when you have to go off campus for any significant period of time? Do you respond promptly to all communications received?

Mutual Understanding:
3. Have you developed an understanding with your supervisor concerning both the mechanics of supervision and the kind and amount of direction you wish and expect to receive? Are you in agreement about the frequency and regularity with which you plan to see each other and about a "plan of campaign" (choosing a dissertation topic, the timing of submission of a dissertation outline, of draft chapters, etc.)? Have you discussed your mutual expectations concerning the quality and originality of the completed dissertation?

* This checklist is modified and expanded from that provided in "Research Student and Supervisor" (Washington D.C.: Council of Graduate Schools, 1990). p. 11.

Planning and Consulting:

4. Have you spent some time in devising a plan for writing the dissertation that can be discussed with your supervisor? (Remember that the dissertation should be largely the student's unaided effort.) Have you obtained any indication that your research is beginning to yield new and interesting material? Are you meeting regularly with your supervisor to review progress? Do you consult with other members of the dissertation committee as appropriate?

Submission and Return of Work:

5. Are you presenting your work to your supervisor chapter by chapter (or section by section) in an approved format? The typescript should be legible and, unless you and your supervisor agree otherwise, accompanied by notes. Do you make and observe clearly stated arrangements for the submission and return of your written work?

Timing:

6. If you are working towards a deadline, are you allowing sufficient time for your supervisor to read all parts of the dissertation in the final form? The responsibility for proofreading the final clean copy is yours, and this reading, too, may take some time.

Moving Along:

7. Are you aware that the doctoral dissertation, though important to your career, is the beginning rather than the sum of your academic life, and should be completed without undue delay? In other words, the dissertation should be no longer than necessary.

CHECKLIST FOR GRADUATE GROUPS

Information and Obligations:

1. Do you provide information (in the form of a brochure, handout, document, etc.) to doctoral students and their supervisors that describes the graduate group's view on good supervisory practice? Does the document spell out both the sorts of help that graduate students have the right to expect and the obligations they in turn owe to their supervisors and advisory committees?

Providing Appropriate Supervision:

2. Do you make available to entering doctoral students an up-to-date description of faculty resources, including a list of instructors' research interests? Does your doctoral program have other ways of affecting a good "match" between a supervisor and the prospective student? Are there procedures in place that allow for a change in supervisor where necessary?

Dissertation Proposal:

3. Is the student required to present to the graduate group a description of the proposed doctoral research that is assessed by people other than the supervisor? Are graduate group expectations regarding the length and form of dissertation proposals clearly communicated in writing to both students and faculty members?

Graduate Group Expectations:

4. Do graduate group regulations make clear to both student and supervisor

   • how often student and supervisor might reasonably expect to see each other?

   • who has the primary responsibility for keeping in touch?

   • how frequently the advisory committee should meet?

   • the form in which draft chapters should be submitted to the supervisor (e.g., typed, with notes) and the normal "turn-around" time when both student and supervisor are on campus?

   • the procedures for reading and examining matters, ranging from acceptable format to such issues as the right and duty of the supervisor to read all parts of the dissertation together when they are in final draft form or very close to final form and the duty of the student to proofread the final clean copy prior to submission?

SOCIAL SCIENCES
CHECKLIST FOR SUPERVISORS

1. Are your research interests compatible with those of the student seeking your guidance? Are you going to be available for the period of the dissertation? If not, what arrangements have you made? Do you maintain regular contact with your student? Are you accessible and responsive to the student's needs? Are you providing guidance, assessing and supplying constructive responses to material submitted by the student? Do you provide feedback on written submissions within a reasonable time frame?

2. Are you aware of the requirements of the Ph.D. program including course load, comprehensive examinations, dissertation proposal, and Ph.D. dissertation document? Have you developed a suitable timetable with the student for the completion of all the requirements of the Ph.D. program?

3. Have you outlined to the student your expectations of the student at each stage of the Ph.D. program? Have you assisted the student in the selection of a research topic that could feasibly be completed within the timetable of the Ph.D. program?

4. Do you keep records of students' progress and of meetings? Do you meet annually with the other members of the dissertation committee to assess the progress of the student? Do you submit an annual report on the student's progress to the chair/graduate coordinator for inclusion in the student's file?

5. Do you understand that feedback on draft chapters (or parts of chapters) should be provided within an agreed upon time, normally two weeks?

6. Do you arrange for supervision of the student during your sabbaticals or periods of leave from the University? Do you provide forwarding addresses in order for the student to maintain contact?

7. Do you assist the student with applications for research scholarships? Do you encourage your student to present at conferences and to publish material in appropriate refereed academic journals?

Have you introduced your student to members of the academic community involved in similar research areas both within and outside the University?

CHECKLIST FOR STUDENTS

1. Have you selected a research area compatible with the personnel resources of the graduate group? Is your supervisor the most competent person to supervise your research? Is your dissertation committee composed of graduate faculty who are active in your field of research?

2. Do you fully understand the requirements of the Ph.D. program with regard to course load, comprehensive examination, dissertation proposal, and dissertation document? Are you aware of the expectations of your graduate group/dissertation committee at each of these stages? Have you established a detailed timetable, one that is compatible with normal completion time of a Ph.D. degree? Are you meeting these deadlines?

3. Have you clearly defined your research topic? Are you aware of the possible limitations to your research? Can the research be completed within the timetable of the Ph.D. degree? Will your research make an original contribution to knowledge?

4. Are you maintaining regular contact with your supervisor and members of your dissertation committee? Are they aware of the progress you have made or difficulties you have encountered in your research? Do you submit an annual report on your progress to your committee for inclusion in the graduate group's files? Does this report list any deviations from your original timetable or research area?

5. Do you make and observe clearly stated arrangements for the submission and return of your own work?

6. Do you submit written drafts of your work at regular intervals for comment by the committee on your work?

7. If you are working towards a deadline, are you allowing sufficient time for your supervisor to read all parts of the dissertation in the final form? The

responsibility for proofreading the final clean copy is yours, and this reading, too, may take some time.

8. Are you responsive to the demands of your supervisor and dissertation committee?

9. Does your supervisor know how to reach you (mail, telephone, other) when you have to be off campus for any significant period of time? Do you respond promptly to all communications received?

10. Are you making a concerted effort to present your research at conferences and publish material in appropriate refereed academic journals? Are you familiar with the research of leading scholars and aware of current developments in your field of research?

CHECKLIST FOR GRADUATE GROUPS

1. Does your graduate group produce a student handbook? Does this booklet contain accurate information on graduate faculty, their areas of specialization and absences due to sabbaticals? Does the booklet explain the requirements of the Ph.D. program including information on course load, comprehensive examinations, dissertation proposal and the Ph.D. dissertation? Is information on the expected and average time for completion of the Ph.D. program included? Is information provided as to the normal timeline for each stage of the degree program? Does the handbook contain updated information on the courses offered by the graduate group? Does it provide guidance on the procedures for making supervisory arrangements and establishing committees? Is accurate information on funding supplied, stressing the level of competition and the restrictions that apply? Is this handbook mailed to all prospective students prior to admission?

2. Is there a detailed document explaining the requirements of each stage of the Ph.D. program? Are the roles and expectation of comprehensive examinations clearly defined? Are the expectations similar in all sections of the graduate group? Is there a precise time frame for the completion of the comprehensive examinations?

3. How are dissertation proposals assessed? Is there a formal presentation and defense to a dissertation committee? Is there a graduate group document outlining procedures for defining and establishing the expectations of a dissertation proposal? Are these procedures standardized within the graduate group? Is there a definite time frame within which the presentation and acceptance of such a dissertation proposal must be completed? Are all of these expectations clearly communicated to students in writing?

4. Are the expectations of a Ph.D. dissertation clearly defined by the graduate group?

5. How is the progress of a student monitored? Are annual reports of the progress of each student completed and submitted by each supervisor? How are these forms assessed? Is there an annual meeting of the graduate faculty to discuss student progress and possible issues related to supervision/student relationships?

6. Are there adequate procedures in place for students and faculty to discuss problems arising from the supervisory arrangements? Have you a procedure for changing supervisors, if necessary?

7. Are the resources of the graduate group assessed when admitting new students? Are the known research interests of the student compatible with the research interests of a number of active faculty members and in line with the goals of the graduate group?

PHYSICAL SCIENCES AND ENGINEERING

CHECKLIST FOR SUPERVISORS

A checklist on good supervisory practice might include the following questions:

1. The supervisor/student relationship should be such that the student can see the supervisor whenever difficulties or breakthroughs arise in her or his research. Do the supervisor and the student understand that research progress meetings should be scheduled at regular intervals? It would be helpful if records are kept of the dates of these more formal meetings, the matters discussed, and the research directions agreed upon.

2. Does the supervisor, as part of research training, take steps to ensure that appropriate general experimental practice is correctly followed and that careful and complete records of experimental procedures and results are kept?

3. Does the supervisor understand that adequate feedback on draft papers and/or chapters of the dissertation should be provided within two weeks or an agreed upon time?

4. Does the supervisor provide opportunities for students to meet leading scholars in the field (for example, by introducing students to seminar speakers) and does the supervisor encourage students to make public presentations of various aspects of their research?

5. Does the supervisor fully understand her or his responsibility to ensure adequate supervision of graduate students during research leaves or other extended absences from the University?

CHECKLIST FOR STUDENTS

A checklist on how to build a good supervisor/supervisee relationship might include the following questions:

1. Have you obtained a clear indication that the research topic you are pursuing and the methodology you are using are likely to yield original contributions to knowledge (that is, likely to result in an acceptable doctoral dissertation)?

2. Is your literature survey up to date? Do you regularly review the literature in your research areas as it is published?

3. Have you, with your supervisor's help, organized a dissertation committee made up of at least three members of the graduate faculty at the University of Pennsylvania (including your supervisor) and does the committee meet at regularly scheduled intervals? Do you prepare and present a report of your progress and an outline of future research directions at these meetings?

4. Are you maintaining exemplary records of your experimental work? It is essential that your records be clear and complete so that others could replicate your experiments recognizing that others may not interpret their results in the same way as you have.

5. Have you developed a clear understanding with your supervisor concerning ownership of intellectual property and the possibilities of co-authored publications and patent applications?

6. Do you regularly consult the graduate group brochure and understand all of the elements that are required for completion of the doctoral degree? Do you attempt to establish a timetable for yourself, estimating realistically the time required for experimentation and dissertation writing?

7. If you are uncertain about your writing skills, are you making a serious effort to remedy this problem throughout your program rather than waiting until you are faced with writing the final document?

8. Do you make yourself available to your supervisor at mutually acceptable times for regular meetings? That is, can your supervisor find you? Do you prefer, for example, working 8 p.m. through until 6 a.m. while your supervisor prefers the more conventional 8 a.m. through 6 p.m. day?

CHECKLIST FOR GRADUATE GROUPS

1. Does the student handbook or brochure in your graduate group contain information about the program, its regulations and procedures, financial support, graduate group policies on graduate programs, appropriate references to University

policies, and information about faculty members and their research interests? Does it list graduate courses being given that year and does it include course descriptions? For Physical Science graduate groups, are safety regulations and procedures outlined?

Such a brochure should be updated annually and every graduate student registered in the graduate group should be given a copy. While it might be helpful to send this brochure to all applicants who receive an offer of admission, the cost may be prohibitive and the information not necessarily helpful for the applicant in decision making. The graduate group's information sheet should certainly be included with every offer of admission.

2. Does the graduate group have procedures in place that make it as easy as possible for a student to find a supervisor that will be a "good match", not only with respect to research interests but also personal attributes that promise a satisfactory working relationship? Are there procedures that allow for a change in supervisors once research is underway?

3. Are there clearly defined requirements for the evaluation of student progress by people other than the designated supervisor? For example, is the student's dissertation committee required to meet at least once each academic year?

4. If the graduate group schedules comprehensive examinations, are the objectives of these examinations clearly understood by students and is (are) the examination(s) designed to assess adequately the student's background knowledge?

LIFE SCIENCES

CHECKLIST FOR GRADUATE GROUPS AND SUPERVISORS

1. Is there a student handbook, which contains not only information about the program, research support, joint publications, policies, and living support but also the basic steps that have to be undertaken for completion of the degree, with a clearly stated "normal" time-path?

2. Does the program have procedures in place to achieve a good "match" between a supervisor and prospective student and procedures that allow for a smooth change in supervisor if necessary?

3. Are there clearly defined requirements for the evaluation of student progress each year by people other than the designated supervisor?

4. How is the topic of the research refined during the first two years of study and a critical path laid out for the completion of the research and writing?

5. Do the supervisor and student understand that regular meetings should be held and appropriate steps taken to keep track of progress?

6. Does the supervisor understand that feedback on draft papers and/or chapters of the dissertation should be provided within two weeks or an agreed upon time?

7. Are appropriate steps taken to keep track of general experimental practices?

8. Are there opportunities for the student to make public presentations of various aspects of the research and meet with the leading scholars in the area?

9. Does the supervisor understand that he or she has responsibility to ensure adequate supervision of graduate students during study leaves, sabbaticals, etc.

CHECKLIST FOR STUDENTS

Good practice involves not only the supervisor but also the student. Although many of the items in the checklist

above apply to all graduate students, there are also a few "good practice" observations that should be directed specifically to doctoral students:

1. Have you selected a program that has a number of faculty active within the field (or area) in which you wish to concentrate?

2. Do you understand all the elements that are required for completion of the doctoral degree, and are you committed to devote the time and energy to fulfill these requirements?

3. When you get to the dissertation definition stage - have you defined clearly the research questions/hypothesis on which you wish to focus?

4. Do you understand the relevant references and know they contribute to the research that you are undertaking?

5. Have you developed a clear understanding with your supervisor concerning his or her role as a mentor and the possibilities for co-authored publications that may exist?

6. Have you obtained a clear indication that the research topic you are pursuing and methodology you are utilizing are likely to yield original contributions to knowledge (i.e., doctoral level material)?

7. Are you maintaining good records of each stage of the research so that others could, in fact, replicate the work that you are doing (recognizing that they may not have the same interpretations)?

8. Are you presenting your work section by section in a succinct approved format that can be understood clearly by those active in the field?

These questions should be reviewed periodically by the doctoral student and supervisor during the course of the program of study and research.

USEFUL WEB SITES

Doctoral Dissertation Manual
http://www.upenn.edu/VPGE/DissManual.html

Rules and Regulations
http://www.upenn.edu/grad/rules.html

Policy on Fairness of Authorship Credit in Collaborative Faculty-Student Publications
http://www.upenn.edu/grad/authorpolicy_alpha.html

Biomedical Graduate Studies: Ethical Conduct in Research
http://www.med.upenn.edu/bgs/Faculty_ResearchEthicsTraining.shtml

Responsible Conduct for Research Fundamentals
http://www.upenn.edu/research/rcr/

Intellectual Property, Copyrights, Patents, Licenses, and Technology Transfer
http://www.upenn.edu/research/rcr/ip.htm

Policy on Childbirth Accommodation of PhD Student Mothers & Family Leave of Absence Policy
http://www.upenn.edu/grad/policies.htm

Code of Academic Integrity
http://www.vpul.upenn.edu/osl/acadint.html

Policy on Consensual Sexual Relations
http://www.upenn.edu/assoc-provost/handbook/vi_e.html

Procedures Regarding Misconduct in Research for Nonfaculty members of the Research Community
http://www.upenn.edu/almanac/volumes/v51/n01/OR-research.html

Ombudsman
http://www.upenn.edu/ombudsman/

DEVELOPMENT OF WRITING SKILLS

Writing and research exist in a dialectical relationship. Research prepares students to write; writing enables students to identify gaps in their research. In many fields, future academic success depends directly on an ability to write competitively for research grant support and publication. Since writing facilitates not only the transmission of ideas but also their clarification and evaluation, graduate students are encouraged to write regularly and to submit written work to their supervisors as early as possible. Both the process of writing itself and the feedback provided by supervisors assist students in formulating their research questions and in developing their research plans. If the mastery of writing skills is delayed until dissertation writing has begun, there is a risk that some students will find the process of writing so difficult that they either take a very long time to complete the dissertation or they will withdraw from the degree program.

Help with planning and writing the dissertation is available from many places at Penn. The Graduate Student Center sponsors a highly acclaimed workshop series, "Navigating the Dissertation" and an intense "Dissertation Bootcamp." The Weingarten Learning Resource Center provides one-on-one consultations on writing and time management strategies. The Graduate Student Center and Counseling and Psychological Services (CAPS) host dozens of dissertation peer support groups. Students may schedule individual appointments with trained writing tutors at the Penn Writing Center; online support for writing is also available at http://www.writing.upenn.edu/critical/help_wc.html

4 APPENDIX
PATENT AND TANGIBLE RESEARCH PROPERTY
POLICIES AND PROCEDURES OF THE UNIVERSITY OF PENNSYLVANIA

APPENDIX **5**
POLICY ON FAIRNESS OF AUTHORSHIP CREDIT IN
COLLABORATIVE FACULTY-STUDENT PUBLICATIONS

**PATENT AND TANGIBLE RESEARCH PROPERTY
POLICIES AND PROCEDURES OF THE UNIVERSITY OF PENNSYLVANIA**

See the policy in full at http://www.upenn.edu/almanac/issues/past/OR-patent.html#2
Section 2.1.4 clarifies the policies specific to students, and is reproduced below.

2.1.4 Student Inventions.
2.1.4.1 INVENTIONS made by undergraduate students will remain the property of the students except when an INVENTION is made in the course of employment at the University, or results from work directly related to employment responsibilities at the University, or from work performed under a grant or other sponsorship, or undertaken with other INVENTORS who have a duty to make ASSIGNMENT to the University. In such instances, undergraduate students will make ASSIGNMENT to the University and will share in the distribution of royalties.

2.1.4.2 INVENTIONS made by graduate students in the course of employment at the University or research carried out in University laboratories as part of a post-baccalaureate or postdoctoral degree or non-degree program, or resulting from work directly related to the graduate student's employment or research responsibilities at the University, or from work performed under a grant or other sponsorship, or undertaken with other INVENTORS who have a duty to make ASSIGNMENT to the University, shall be the property of the University and shall be subject to the PATENT POLICY. Any INVENTIONS arising from a dissertation submitted as a part of the requirements for a degree shall be subject to the PATENT POLICY. In such instances, graduate students will make ASSIGNMENT to the University and will share in the distribution of royalties.

POLICY ON FAIRNESS OF AUTHORSHIP CREDIT IN COLLABORATIVE FACULTY-STUDENT PUBLICATIONS

The full policy is online at
http://www.upenn.edu/grad/authorpolicy_alpha.html

The intent of the policy is to avoid situations in which graduate students or faculty feel that their contribution to published work has not been fairly recognized. Our intent in the distribution of this policy statement to faculty and graduate students is to make authorship discussions a routine part of conversations about intellectual collaboration.

Diversity of practices in different disciplines and departments
In considering the task of formulating a university-wide policy on Fairness in Authorship Credit, the Graduate Council of the Faculties is aware that different traditions of joint authorship exist in different disciplines and departments.

• In some fields, the Principal Investigator of the lab is first author of all publications.

• In some fields faculty members rarely or never receive authorship credit on student publications, no matter what their contribution to the project or the product.

• In some fields, authorship depends on intellectual leadership and actual contribution to the ideas for the project and the written product.

• In some fields, authorship rules are clear; in others they are subject to negotiation.

• In some fields, research assistants and research fellows are automatically included as authors when the outcome results from paid work. In other fields, these students are automatically excluded as authors when the outcome results from paid work.

A University-wide process for establishing authorship credit
In light of the variability, ambiguity, and uncertainty regarding faculty-student authorship of published work, there are no specific rules that can be enunciated by the Graduate Council of the Faculties that will address the sit-uation in all departments and academic disciplines. Instead, the Graduate Council of the Faculties is mandating a set of processes within each graduate group that will clarify expectations concerning authorship for each student and faculty member.

A. Graduate Group level
Graduate groups must publish and publicize general guidelines concerning authorship and make them available to all graduate students. Individual graduate group policies are available online at
http://www.upenn.edu/grad/authorpolicy_alpha.html

B. Faculty-Student level
Individual mentors should conform to the graduate group policy on authorship credit. Mentors are responsible for anticipating possible disagreements concerning authorship credit regarding specific collaborative projects and should initiate clarifying discussions before students have invested substantial time on such projects. These discussions should be reopened if relative contributions change.

C. Appeals process
No policy can prevent the occurrence of all instances of actual or perceived unfair treatment. Although inequities can occur to either faculty or graduate students, we believe that graduate students are usually more vulnerable to faculty practices and less able to take action when they feel that fairness has been violated.

In cases of disagreements about authorship the following steps should be taken:

1. Students who feel that they have been mistreated should raise the issue with their mentor and their graduate chair.

2. If the disagreement is not resolved to all participants' satisfaction, an appeal can be made to the Dean of the School, who should convene a committee of faculty and graduate students to hear the disagreement and attempt to resolve it. Cases will be decided in the context of the published norms and guidelines of the graduate group.

SUMMARY FROM 2005-06 SURVEY REGARDING MENTORING CONDUCTED BY THE GRADUATE STUDENT ASSOCIATIONS COUNCIL (GSAC)

Expectations that advisors should have of their students

1. To take initiative in learning material that is needed in doing their research

2. To work hard on their dissertation project, in terms of time and effort and also in terms of involving themselves creatively and intellectually

3. To meet together regularly in order to report on their progress and ask questions and to inform of any difficulties encountered

4. To keep up with developments in their area by attending seminars and lectures on related material and by reading research results in recent papers

5. To seek to attend conferences and workshops that are closely related to their research

6. To learn to give clear oral presentations both of elementary material (TA material) and of advance material (own research material)

7. To write up their research results clearly and to present them in a timely way

8. To be conscientious in meeting their responsibilities as grad students

9. To interact with other graduate students and faculty concerning advanced material

10. To apply for post-graduate school jobs in an organized, thorough and timely manner, seeking faculty advice in the process

Expectations that students should have of their advisors…

1. To give them guidance on finding and refining a dissertation topic

2. To meet with them regularly in order to hear about their research progress and to offer suggestions and feedback

3. To suggest changes in research direction if they find themselves running into roadblocks

4. To look over research material that they have written and given to advisor, and then to give them comments on that

5. To give them a sense of how much progress they are making and how far along they seem to be in the dissertation process

6. To inform them of seminars, conference, etc. that would be beneficial for them to attend, and research papers that they should read

7. To help them deal with difficulties that they may face in their role as graduate student or TA

8. To guide them through their job search, especially in the case of those applying for academic jobs

9. To write letters or recommendation for them both during and after graduate school

10. To inform others in the relevant research community about the student's work in a way that will help the student become known in that community