Earth and Planetary Sciences

This is one of the few departments in the country with an integrated program of graduate instruction and research that treats Earth as a planet and makes direct use of knowledge gained by exploring the solar system. Our field is changing rapidly and becoming more interdisciplinary as links emerge among geology, geochemistry, geophysics, and geobiology. New opportunities are developing as research in natural hazards, energy sources, and the environment become more important to the global economy, and new space missions are developed to explore the solar system. The relatively small size of the department engenders a friendly and personal place, offering a lot of personal interaction with faculty and researchers. Our graduate students have the opportunity to use cutting-edge laboratory equipment, high-speed parallel computers, and the latest planetary mission data in the course of their research. They travel to field sites around the world and publish research in the leading scientific journals. Our graduates go on to carry out research and teaching at major educational and research institutions and are leaders in earth and planetary sciences.

The PhD program is open to qualified students who have previously specialized in earth sciences, physics, chemistry, biology, environmental science, mathematics, or engineering. The GRE general test is required for all applicants. Doctoral students earn the master's degree as they complete the first phase of their graduate program; students are normally not admitted to a terminal AM. The doctoral training emphasizes modern, quantitative approaches. It involves field and laboratory work as well as theory and advanced computation. The degree requirements are intended to ensure that all graduate students develop independence and originality of thought and acquire knowledge that has sufficient breadth and depth. In addition to their course work, students must complete a research project in the second semester. Second-year research culminates in the oral defense of a publication-quality research paper. A successful oral defense and completion of 36 semester hours of graduate-level course work are required to qualify for the AM and advance to full candidacy for the doctoral degree. Completion of the teaching requirement, completion of any remaining advanced course work, and a successful oral defense of the doctoral dissertation are required for the award of the PhD degree. Students are expected to complete their academic program by the end of their fifth year.

Chair
Viatcheslav S. Solomatov
Professor
PhD, Moscow Institute of Physics and Technology

Endowed Professors
Raymond E. Arvidson
James S. McDonnell Distinguished University Professor
PhD, Brown University

Bradley L. Jolliff
Scott Rudolph Professor of Earth and Planetary Sciences
PhD, South Dakota School of Mines and Technology

Professors
Robert E. Criss
PhD, California Institute of Technology

Robert F. Dymek
PhD, California Institute of Technology

M. Bruce Fegley, Jr.
PhD, Massachusetts Institute of Technology

William B. McKinnon
PhD, California Institute of Technology

Jill D. Pasteris
PhD, Yale University

William Hayden Smith
PhD, Princeton University

Douglas A. Wiens
PhD, Northwestern University

Michael E. Wysession
PhD, Northwestern University

Associate Professors
Jeffrey G. Catalano
PhD, Stanford University

David A. Fike
PhD, Massachusetts Institute of Technology

Jennifer R. Smith
Dean of the College of Arts & Sciences
PhD, University of Pennsylvania

Assistant Professors
Alexander S. Bradley
PhD, Massachusetts Institute of Technology

Michael J. Krawczynski
PhD, Massachusetts Institute of Technology

Philip Skemer
PhD, Yale University
Degree Requirements

Graduate Program Details & Requirements

1. Introduction

PhD training in the Department of Earth and Planetary Sciences (EPS) emphasizes modern, quantitative approaches. It involves field and laboratory work as well as theory and advanced computation. The degree requirements are intended to ensure that all PhD candidates develop independence and originality of thought and acquire knowledge that has sufficient breadth (the broad knowledge of Earth and planetary sciences) and depth (a deeper working knowledge of a specific research area). The department believes that the major advances in science are likely to be made at the discipline boundaries and therefore does not define disciplines and does not impose strict rules on what constitutes depth. Instead, the Research Advisory Committee, working with the student, defines the areas of expertise the student wishes to pursue.

In the second semester, students complete their Graduate Research Project (Section 3.2 (p. 3)), which will be used during student's evaluation at the end of first year (Section 4 (p. 4)). During the fourth semester, the student takes an oral exam to be formally allowed to pursue the PhD (for deadlines see Section 5 (p. 4)). Students also demonstrate competence in teaching by completing the Doctoral Teaching Requirement (Section 6 (p. 5)). Finally, the PhD student completes and defends a dissertation (Section 7 (p. 6)).

The requirements described below apply to students who enter the program in Fall 2011 or later. Students who entered the program before Fall 2011 may either switch to the new system or stay in the old requirements system (for more information visit http://eps.wustl.edu/graduate/requirements-old).

2. Advising

2.1 First-Year Advisor

The First-Year Advisor is a member of the EPS teaching faculty who provides guidance to all first-year students. The First-Year Advisor (i) recommends courses for the student to take during the first year, (ii) acts as a sounding board and provides feedback to the student regarding her or his progress in the program, and (iii) provides an assessment to the faculty as a whole regarding the student's qualifications to proceed in the PhD program (Section 4 (p. 4)).

2.2 Major Advisor

Choices of a Major Advisor and a research problem area are very important decisions that affect much of the student's graduate career. Each student, by the end of the second semester of graduate work, should select an area of concentration and a Major Advisor. The Major Advisor must be a member of the EPS teaching faculty.

The selection process will vary greatly among students. Some students will know exactly with whom they wish to work before they arrive. Other students will have the possibilities narrowed down to two or three faculty members, while still others will select from among the faculty as a whole. Students should make every effort to get to know faculty members with whom they might work and are encouraged to interview faculty members so as to understand better their research interests. Courses, seminars, and departmental colloquia given by professors also provide information on their research interests. The Graduate Research Project (Section 3.2 (p. 3)) undertaken in the second semester is an obvious way to get to know the research style of a specific faculty member.

2.3 Research Advisory Committee

By the end of the first semester in residence, the student, in consultation with the First-Year Advisor and the faculty member supervising the first-year research project, must form her or his Research Advisory Committee. Populating the committee is the responsibility of the student. This is a three-person committee, tailored to the student's research interests, and chaired initially by the faculty member supervising the first-year research project and by the Major Advisor after the student selects her or his Major Advisor. Besides the chair of the Research Advisory Committee, at least one other person must be a member of the EPS teaching faculty. The third person may be a member of the teaching faculty, the research faculty, or the senior academic research staff. This committee will be part of the student's Oral Examination Committee (Section 5.3 (p. 4)) and the Dissertation Examination Committee (Section 7.1 (p. 6)).

Graduate students are required to meet with the members of their Research Advisory Committee together or individually at least once a year:

- First-year students meet with their committee in the fall semester. The committee helps the student to select courses to build breadth and depth of knowledge and to choose a research topic.
- Second-year students meet with their committee in the fall semester to ensure that a research project is well underway and that the student is acquiring adequate knowledge.
• Following successful completion of the oral exam, students meet with their committee annually in the spring semester to give a summary of research progress.
• Students nearing degree completion meet with their committee at least 6 months prior to the expected defense date. Students will provide the committee with an outline of the dissertation, including expected completion dates for various aspects of the research. At this time committee members may identify areas that need expansion or reconsideration.

The students are responsible for making sure that the meetings happen on time and are advised to contact the committee members at least one month before the meeting. The meetings with the Research Advisory Committee must be documented using a Graduate Student Meetings with Research Advisory Committee form available from the department office and on the resources page of the department website (http://eps.wustl.edu/resources). The committee members sign and provide comments on the form. The forms are filed with the department office and will be evaluated during the orals and the dissertation defense.

3. Course Requirements

3.1 College and Department Requirements

It is recognized that students entering the program will bring a diverse background in their undergraduate course work. The department has a history of admitting students to the graduate program with degrees in physics, chemistry, and engineering, as well as the traditional Earth and planetary sciences. An adequate general foundation would be three semesters of calculus, a year of general physics, and a year of general chemistry. Students have been successful in the program, depending on their discipline interests, with less than this level of preparation. However, two semesters of calculus constitutes a minimum mathematics background to be successful in the program. The First-Year Advisor and the Research Advisory Committee will determine a student’s needs in this area and provide advice on the means of removing deficiencies.

The minimum prerequisites to take almost any course within the department are EPSc 201 Earth and the Environment, EPSc 352 Earth Materials, and EPSc 353 Earth Forces. Incoming students whose degree area is outside of the Earth and Planetary Sciences will be expected to obtain the knowledge in these areas by the end of the first year, using a combination of any appropriate undergraduate courses and steps taken within the department to remove these deficiencies. Students with no prior course work in the Earth and Planetary Sciences will be required to enroll in EPSc 201 (Earth and the Environment), including a laboratory section. Enrollment in EPSc 201 does not count toward graduate standing and will not fulfill a course requirement for the PhD or AM degrees. Upon completion of EPSc 201, the First-Year Advisor and the Research Advisory Committee will determine the student’s future course needs. For students with some prior course work in the Earth and Planetary Sciences, the First-Year Advisor and the Research Advisory Committee will determine a student’s needs in this area and provide advice on the means of removing deficiencies. The PhD program is flexible in its course work requirement. It is not intended that a student will repeat her or his undergraduate experience. Those students with a strong undergraduate background will be able to concentrate on research at a relatively early stage in the program.

The Graduate School of Arts & Sciences requires the completion of 72 semester units for the PhD degree. Within the department this requirement is met by a combination of formal course work and, later in the program, EPSc 592 (Research). The department requires the completion of eight courses, at least six of which must be in EPSc. All courses taken must be at the 400-level or above. Under certain circumstances, the student can take EPSc 3XX by enrolling in EPSc 590 (Independent Study). Except for the latter case, EPSc 590 as well as 591, 592, and 595 do not qualify.

The student selects courses in consultation with her or his adviser and the Research Advisory Committee (Section 2.3 (p. 2)). The student and the adviser are responsible for ensuring that the selected courses provide breadth and depth of knowledge needed for the student to conduct graduate research and successfully finish the graduate program. The Research Advisory Committee recommends courses during annual committee meetings and as a result of the oral examination.

Students entering the graduate program who have previously received a master’s degree in Earth Sciences or a closely-related field may petition to waive up to two of the six required EPSc courses. This petition may be submitted no earlier than the second semester in residence and should contain a justification for the number of courses to be waived that identifies how previous course work is similar to that offered by the department. The waiver must be endorsed by the student’s Research Advisory Committee and forwarded to the Director of Graduate Studies. The petition will then be considered for approval by the Graduate Studies Committee.

Students who have completed or are close to completing the required 72 units can register for EPSc 884, Doctoral Continuing Student Status course (EPSc 883 for master’s students) offered by the Graduate School to students who take fewer than 9 units but need to maintain their full-time student status. For more information, visit the Graduate School’s website: http://graduateschool.wustl.edu.

3.2 Graduate Research Project

Each student will take a minimum of 3 units of EPSc 591 (Graduate Research Project) in the second semester. In conjunction with a faculty adviser or advisers, the student selects, designs, and completes a one-semester research
project in a field of interest to the student. The student will submit a written report on the research project, such as in the format of a scientific article or proposal, by the last day of the final exam period of their second semester in residence. This report will cover the research scope, approach and analytical methods employed, data analysis, conclusions, and references. The report will be reviewed by the student's Research Advisory Committee, including the research supervisor. Each member will provide comments on the report to the student and will also provide an assessment of the report during the first-year evaluation.

The Graduate Research Project will help the student develop research skills early in the program, and give the faculty an early assessment of the student's potential for research. The Project also gives the student the opportunity to "try out" a faculty member before selecting a Major Advisor.

The topic chosen by the student, in mutual agreement with a faculty member, must be sufficiently well-defined and limited in scope so that it can be completed by the end of the semester. Students are encouraged to interview several faculty members during their first semester and to have their project well-defined by the time the second semester commences. The Graduate Research Project supervisor may be a member of either the teaching faculty or the research faculty.

3.3 Research

Each student is also required to take at least 3 hours of EPSc 592 (Research) in the third and fourth semesters. This is to help ensure that the student is well prepared for the Oral Exam (Section 5 (p. 4)).

4. Evaluation at the End of First Year

At the end of the second semester the EPS faculty will review the performance of the student in course work and the Graduate Research Project, taking into account feedback from the student's instructors and Research Advisory Committee. During this review the faculty will assess whether the student's academic, research, and professional performance is likely to lead to success in the PhD program and in the workplace for the types of positions that require a PhD degree. A written summary of this assessment will be provided to the student. As with other assessments of student performance, the faculty may recommend that the student be placed on probation. A student deemed unlikely to succeed in the PhD program or in a career requiring a PhD will also be encouraged to spend the next year completing the AM degree before leaving the program.

5. Research Paper and Orals

The research carried out during the summer following the first year, and the research hours taken during the third and fourth semesters will culminate in a research paper and an oral defense of the research undertaken. A research proposal may be presented as an option to the research paper when circumstances warrant this option.

5.1 Research Paper

During the fourth semester, the student will work closely with the Major Advisor to develop a research paper. The written format will be that of a journal paper and it is, in fact, expected that the document (or something close to it) will eventually be submitted to a journal for publication. Students should consult their Major Advisor regarding the research paper format appropriate for their research area. When the Major Advisor is satisfied with the effort, the paper will be distributed, at least one week before the oral exam, to the entire department faculty. The research paper need not become part of the thesis project.

5.2 Research Proposal

When circumstances warrant, with adviser approval, a research proposal may be completed in lieu of a research paper. The format will be generally similar to that of the research paper, except that data collection and analysis will be much reduced or entirely absent. In most cases, the proposal option would be used only if the topic area was too broad or the data collection still largely incomplete, perhaps due to instrumentation problems. The proposal is not expected to be suitable for publication, but the other guidelines, requirements, and deadlines for the research paper do apply to the research proposal and its oral defense.

5.3 Oral Examination

To maintain satisfactory academic progress (Section 12 (p. 8)) students must take the oral examination in their fourth semester. The deadline is April 30 (or November 30 if the fourth semester happens to be fall). The Oral Examination Committee will consist of the Research Advisory Committee and the department Faculty Examiner. The committee will be chaired by the Major Advisor, and attendance at the examination is limited to the Research Advisory Committee, the department Faculty Examiner, and any other interested faculty members.

The examination begins with an introduction of the student by the Major Advisor. This will be followed by an oral presentation by the student for about thirty minutes and then by questions from the Oral Examination Committee and any other faculty members present. The examination is expected to last at least two hours and will conclude once the examiners are satisfied that the student's ability to present and defend her or his research and related areas has been thoroughly assessed. Questions will cover both the primary and peripheral subjects of the research as well as Earth and planetary sciences in general. The primary interest of the committee will be to evaluate the student's grasp of the context and justification for the research, the experimental, observational, or theoretical methods required, and the accuracy and significance of the results. A mature performance is expected in the student's understanding of the research, the clarity of presentation, and the thoughts about
future directions of the work. The student will also be expected to demonstrate breadth and depth of knowledge and be familiar with the relevant published literature related to her or his research. At the end of the question period the Oral Examination Committee will determine an outcome of the exam. There are three possible outcomes:

- The student advances to candidacy for the PhD degree (a PhD-level pass).
- The student achieves an AM-level pass or fails the orals and is allowed to retake the examination one more time to try to achieve the next level. The deadline for the retake is three months after the deadline for the regular oral exam: July 31 (or February 28 if the forth semester happens to be fall). The student will automatically be placed on probation. A PhD-level pass of the retake will remove the student from probation and advance the student to candidacy for the PhD degree. Failure to achieve a PhD-level pass of the retake will result in a recommendation of dismissal from the graduate program to the Dean of Graduate Studies.
- The student achieves an AM-level pass or fails the oral examination while already being on academic probation. No retake is provided in this case. This results in a recommendation of dismissal from the graduate program to the Dean of Graduate Studies.

After the examination, the Major Advisor will prepare a short (generally 0.5 to 1 page) written summary of the examination outcome that will identify areas of needed improvement. For cases where a retake is required, this document will specifically outline the deficiencies that must be remedied for the student to pass the exam. After preparation, the Major Advisor will send this summary to the Oral Examination Committee members for review and editing. The committee must agree on the final document text and then provide the written summary to the student within one week of the examination.

It is the intention of the faculty that those students who have a successful first-year evaluation should also have a high probability of passing the oral examination if they adequately prepare. Dismissal from the program should thus be an unusual outcome of the exam. Successful completion of the orals will partially satisfy the requirements for an AM degree, which will be awarded once all AM requirements are met (see Section 8.2.2 (p. 6) for specific requirements).

6. Teaching Requirement
6.1 Definitions and Qualifying Elements

A crucial component in the training of successful scholars is the development of oral and written communication skills. Moreover, exposure to formal teaching methods should be part of the training of future faculty. Consequently, the Graduate School has added specific teaching requirements to the mandatory elements of the doctoral degree.

The department requires completion of 15 units of teaching experience at either the basic or advanced level. At least 5 units must be at the basic level and 5 units at the advanced level. A unit is broadly defined as an hour spent communicating with a group of students or scholars.

For the basic teaching requirement, the EPS faculty have stipulated the following experiences as qualifying for one unit of teaching per event:

- Conducting a discussion or review section of a class.
- Teaching or co-teaching a laboratory session (one unit per session).
- Delivering a lecture in class using notes provided by the professor.
- Leading a full class session of an EPS seminar course or of an EPS journal club.

For the advanced teaching requirement, the EPS faculty have stipulated the following experiences as qualifying for one unit of teaching per event:

- Delivering a paper (oral or poster) at a science meeting. At least one unit must be completed in this fashion.
- Preparing from scratch and delivering a lecture in an EPS class. At least one, but not more than two, units must be completed in this fashion.
- Delivering a “brown bag” seminar giving the results of the student's own research.
- An outreach activity such as preparing and presenting a lecture and/or demonstration in science at a middle or high school.

An important element of the EPS graduate program is pedagogical training. Students entering the program in Fall 2011 and later are required to attend at least five training workshops at the The Teaching Center or equivalent events on or off campus. For students enrolling Fall 2014 or later, at least three workshops must be attended in the first year and all five must be attended by the end of the second year.

6.2 Filing Forms

Each teaching unit completed must be documented using the Certification of Teaching Units for PhD Candidates form available from the Department Office and on the departmental website (http://eps.wustl.edu/resources). Each form must be signed by the student's adviser or by a faculty member supervising the event and filed with the Department Office. In the fall semester, the completed Certification of Teaching Units for PhD Candidates form should be submitted no later than December 1, and in the spring semester, no later than May 1. Prompt filing following the date of the event is strongly recommended. Once the total required units are accomplished, the Department Office will notify the Graduate School of the completion.
6.3 Responsibility for Completion

a. The student is the person primarily responsible for completion of the teaching requirement, including scheduling, preparation, presentation, and documentation of each teaching experience.

b. The adviser is tasked with monitoring advisee progress toward completion of the teaching requirement. This support includes interacting with the EPS Teaching Assistant coordinator to schedule the necessary T.A. assignments and providing financial resources, where possible, to cover at least partially the student's travel expenses associated with participation in national science meetings.

c. The student will arrange for a faculty member to attend and evaluate at least one of the events at either the basic or advanced level. This faculty member will provide constructive criticism as well as a written evaluation of the teaching skills of the student on the completion form.

d. The Department Office records each unit as submitted by the student (see Section 6.2 (p. 5) and Section 11.2 (p. 7)).

7. Dissertation

7.1 Graduate School Requirements

A dissertation must be defended in accordance with the requirements of the Graduate School of Arts & Sciences. The students, in consultation with their Major Advisor, make the Dissertation Examination Committee. The Committee consists of at least five faculty members. Four of the five must be tenured or tenure-track Washington University faculty; one of these four may be a member of the emeritus faculty. The fifth member must be from outside the student's degree program and must have a doctoral degree and an active research program, whether at Washington University, at another university, in government, or in industry. Students are given the option of having a sixth member of the committee if they desire. All committees must be approved by the Dean of the Graduate School or by her or his designee, regardless of whether they meet the normal criteria.

For a complete description of the Graduate School requirements and the Doctoral Dissertation Guide, visit the Graduate School's website (http://graduateschool.wustl.edu) and the department website (http://eps.wustl.edu/resources).

7.2 Time to Completion

All PhD requirements, including dissertation defense, are expected to be completed at the latest by the end of the tenth semester. Time extensions must be agreed to by the faculty.

8. Requirements for AM Degree

8.1 Graduate School requirements

Students are not generally admitted who intend to earn only a master's degree. However, graduate students usually earn one on the way to the doctorate. Students working toward a master's degree must maintain a B average in their course work. There are two tracks for the master's degree:

**Track I.** Completion of a minimum of 36 units including a thesis (up to 6 credits).

**Track II.** Completion of a minimum of 36 units plus an examination.

Visit the Graduate School's website for additional information on requirements.

8.2 Department Requirements

The department imposes additional requirements for the master's degree:

8.2.1 Track I

This track is available to graduate students who are directed to a master's degree as a result of the first-year evaluation or, in rare cases, who declare their intent to pursue a master's degree upon entering the program.

8.2.1.1 Course Requirements

A thesis must be completed and successfully defended before a committee of no fewer than three department faculty members. Prior approval of the thesis by the Major Advisor is necessary to bring it to a defense. Graduate School requirements are available on the Graduate School's website as well as in the Master's Thesis Guide. The thesis defense is open to any interested person. Following questions from the general audience, all except for the student and the examining committee are excused. Members of the examining committee then may continue the questioning.

8.2.1.3 Time to Completion

Students are expected to fulfill all requirements, including successful defense of a thesis by the end of their fourth semester. The deadline for the thesis defense is the same as for the oral exam (Section 5.3 (p. 4)). Time extensions must be approved by the EPS faculty.

8.2.2 Track II

A master's degree will be awarded under the Track II guidelines with either a PhD-level or master's-level pass of the PhD oral
exams (Section 5.3 (p. 4)). At least 36 credits must have been completed, as well as the successful completion of
1. the Graduate Research Project (EPSc 591)
2. course requirements (see Section 8.2.1.1 (p. 6)).

9. Financial Support
Most incoming graduate students receive financial support in the form of tuition scholarships and fellowships, teaching assistantships or research assistantships. The Tolman and Wheeler Fellowships are typically given to EPS students who have expressed interest in the Earth and planetary sciences. Astronaut, Haskin, and Graduate Fellowships are awarded by the McDonnell Center for the Space Sciences to students with interests in planetary science. EPS students are also eligible to compete for special fellowships sponsored by the Graduate School. The current stipends for these awards and for the assistantships are available from the Department Office. For more information see "Fellowships, Assistantships, and Financial Aid" on the department website (http://eps.wustl.edu/graduate/financial_support).

No separate application is required for department-administered fellowships. All students are considered for any fellowship for which they qualify. Some Graduate School fellowships do require separate application. Opportunities to compete for these fellowships are announced by the Graduate School.

The current maximum duration for financial support is five years for AM candidates and nine years for PhD candidates. For PhD candidates, the maximum duration for financial support is extended to 11 years if the student completes the Graduate Research Project during the sixth year. Beyond this time, the department will pay the Continuing Student Fee, at maximum, until the end of the third year for master's students and until the end of the sixth year for doctoral students. Beyond this time, the student is responsible for payment of any student fees.

Most financial awards, including the financial aid administered by the department, are contingent on the maintenance of satisfactory academic progress (Section 12 (p. 8)). For more information see "Eligibility for Financial Support" on the department website (http://eps.wustl.edu/graduate/eligibility).

10. Communication Skills
All graduate students must possess written and oral communications skills sufficiently well developed to support the student's academic program and to support possible teaching assistant assignments.

It is particularly important for international students to remove any communications deficiencies immediately. Financial support via teaching assistantship is a possibility at any point in the academic program.

Students must be qualified to complete teaching assignments including those requiring oral as well as written skills — or else forfeit the financial aid offered. International students are required to take an oral English competency examination prior to the beginning of the first semester. If improvement in communication skills is indicated, it is the student's responsibility to develop the appropriate skill level. The university provides English as a Second Language (ESL) courses to help international students achieve communication competency. English Language Programs (ELP) staff provides courses and academic English language support designed to strengthen the English language proficiency of non-native English speakers. For more information visit the website of the Office for International Students & Scholars (http://oisshome.wustl.edu).

11. Preliminary Graduation Requirements (Master's and PhD)

11.1 Intent to Graduate Form
All candidates for a degree must file an Intent to Graduate Form by the College-specified date to be considered for degree conferral (this includes PhD students obtaining their master's degree). The form is available online in WebSTAC. It can also be downloaded from the resources page of the department website (http://eps.wustl.edu/resources). Paper copies are available from the Office of Student Records (http://studentrecords.wustl.edu) or from the Dean's Office. The deadline for filing the form is printed each semester on the university calendar in the Course Listings or may be obtained by contacting the Dean's Office or the Office of Student Records.

Once the student files the form, the student's academic division is notified to consider her or him as a candidate for degree. They will evaluate the student's record to determine if the student has met degree requirements and notify the department of the names of all final degree recipients. The Office of Student Records then posts degrees conferred and their conferral dates to the student's record.

If the student fails to complete degree requirements during the semester for which the form is filed, the student must refile the form for a subsequent degree period.

11.2 Notice of Title, Scope, and Procedure of Dissertation Form
The Graduate School requires that the Notice of Title, Scope, and Procedure of Dissertation Form (available on the Graduate School's forms page) be completed before the start of the fifth year of full-time enrollment or at least six months before degree conferral, whichever is earlier. Students are advised that this form requires signatures from the Major Advisor, Research
Advisory Committee, and Department Chair. Students should plan accordingly in order to obtain all required signatures before the submission deadline. Completion of this form is necessary to maintain satisfactory academic progress based on Graduate School policy.

12. Policies on Academic Integrity and Performance

12.1 Academic Integrity

As set out by the Graduate School of Arts & Sciences, students are expected to comply with the university's academic integrity policy (http://graduateschool.wustl.edu/files/graduate/AcademicIntegrity.pdf). Academic integrity violations (e.g., cheating, plagiarism, research misconduct) will be referred to the Graduate School for adjudication. Students should be aware that conviction of violating the academic integrity policy can result in failure of a course or even dismissal from the university.

12.2 Academic Performance

All students are expected to maintain satisfactory academic performance as defined on the Graduate School's website. This includes completing all PhD requirements except for the dissertation by the fourth year, maintaining a cumulative grade point average of at least 3.0 in courses counting toward their 72 hours, not carrying at one time more than 9 semester hours for which grades I, X, or N are recorded, and submission of a dissertation proposal, in the form of a completed Title, Scope, and Procedure Form, before beginning the ninth semester (fifth year) of continuous enrollment. The department imposes additional criteria:

- Students are expected to maintain a cumulative grade point average of at least 3.0 exclusive of hours taken for research (EPSc 592).
- Students are expected to complete the Graduate Research Project (EPSc 591) in the second semester in residence, as specified in Section 3.2, and must demonstrate proficiency in the conduct of research.
- Students are expected to take and successfully pass the oral examination by the deadline specified in Section 5.3.
- Students are expected to make timely progress toward degree completion through the conduct of scientific research and the production of scholarly work (for example, peer-reviewed journal articles, conference presentations) at the level of excellence expected of a Washington University PhD.
- Students are expected to complete the requirements of teaching assistantships.

Students who do not maintain satisfactory academic progress may be put on probation or, in rare cases, face dismissal as described in the department's Plan for Supervising Academic Progress and the Graduate School of Arts & Sciences Policy on Probation and Dismissal for Academic Reasons.