

Welcome to the Graduate Program in Earth and Space Sciences at University of Washington

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Graduate School - The Big Picture

(1) What makes up a Graduate Program?

Graduate School

- Approves and regulates Department degree programs.
- Sets university-wide requirements and coordination for advanced degree programs, including Ph.D. supervisory committees and examinations. (What is a GSR?)
- Provides some Fellowships, and some travel awards.
- Offers seminars on careers, on personal/work balance, and on other topics.

Department

- Sets additional degree requirements related to specific fields.
- Provides faculty supervision of student research.
- Offers advanced specialized course work.
- Evaluates graduate-student progress and conducts degree Examinations.

Graduate Program Coordinator (GPC)

A faculty member in each department that grants advanced degrees is appointed to be responsible for liaison with Graduate School on policy and student assessment.

- Assists students with academic goals and progress (e.g. advising appointments).
- Helps with other issues related to your degree program.
- Helps you to resolve conflicts or misunderstanding with Advisors.
- Reviews petitions (change/waive requirements, leave of absence ...).
- Approves Supervisory Committees.
- Reviews annual Progress Reports.
- Assesses Satisfactory Progress toward degrees.

ESS Student Services Office

Student Services staff provide academic counseling and advising services, i.e. they keep our Graduate Program working. They are some of the most important people that you will interact with at UW, so be nice to them. ☺

- Maintain records, databases, schedules.
- Annual re-appointment letters, ASE appointment letters (What's an ASE?).
- Outreach.

Graduate Students (You)

- Perform brilliant research.
- Earn advanced degrees.
- Go on to outstanding careers throughout the Earth and Space Sciences and beyond.

(2) Advanced Degrees in ESS - Your new educational journey

The M.S. and Ph.D. in ESS are both research degrees, i.e. they require a different sort of studying and learning from undergraduate work.

- Not only will you have to understand what has been done before, you will also be defining new questions and creating new knowledge and insights through your own research.

All degree paths are possible

- Some students complete an M.S. degree and then move to a job in industry or teaching, or move to another educational institution for a Ph.D.
- Some students go directly into our Ph.D. program.
- Some students first complete an M.S. degree, then continue into the Ph.D. program.
- 2 years* for M.S. degree, 5 years* for Ph.D. (*Actual times may vary. ☺)

Master of Science (M.S.)

There are 2 options for our M.S. degree in ESS. Both are research degrees.

- For the *thesis option*, you carry out a research project, and write a traditional thesis following University style guidelines, and your thesis is archived in the Library.
- For the *non-thesis option*, you write a manuscript for a paper that is of acceptable quality to be published in a peer-reviewed scientific journal.

Doctor of Philosophy (Ph.D.)

What makes a Ph.D. project?

- You become a world leader in some aspect of your scientific field.
- When your supervisory committee is learning from you, you are probably ready to defend.

There are 3 milestones:

- Prelim Exam (after 1 year)
- General Exam (late in third year)
- Final Defense (after ~ 5 years)

(3) The Research Enterprise

Scientific research is a quest to understand how the natural world works. You are going to be a part of this quest.

To be a successful researcher, you have to be your own toughest critic.

- Try to challenge your own ideas in every way that you can, revising and improving your ideas as you go. The ideas that remain will be robust and well-tested ideas that you can be proud of.

To be a successful researcher, do not just accept what other researchers say.

- If you find discrepancies when you apply accepted concepts in your work, be willing to challenge those ideas (also check that you didn't screw up – see point above!)
- The authors of those ideas should not be offended if you can improve on their methods or results. If this includes your Advisor, he or she will be pleased that you have done well.

(4) Help on your Journey

Although ultimately you create knowledge and ideas that make you an authority, there are many sources of help available along your journey, to make the journey smoother, faster, and more productive. Be sure to take advantage of these resources.

ESS Student Services Office

- The Student Services personnel can help you with virtually any aspect of being a grad student in Earth and Space Sciences, or direct you to people who can help you.

Graduate Program Coordinator

- The GPC is your contact with the Grad School, helps to resolve misunderstandings and other issues between students and Advisors, and helps you to meet departmental requirements and to select courses of study. The GPC also coordinates annual reviews of your progress, and offers suggestions for making your future progress smooth.

Research Advisor

Advisors and Committees are your best source of info about courses to take, research direction to pursue, papers to read, manuscripts to write, Prelim and thesis style and content, MS or not, etc.

- Your Advisors *want* to talk with you. Don't avoid them just because they are busy. Different Advisors may have different advising styles. Some may encourage you to just drop in, and others encourage you to make appointments. Find out what works, and use it. Communicate *often* and *at length* with your Advisor and with your Committee.
- Don't worry about looking dumb; your Advisor's goal is to help you succeed in your degree by figuring out stuff as quickly as possible.
- You can change Advisors, e.g. if your interests diverge.

Supervisory Committee

Establishment of a Committee is an important aspect of making satisfactory progress.

- Set up your first-year committee *now*.
- Set up your formal degree committee *immediately after Prelim*.
- Committees are easy to change if your interests diverge from those of committee members.

Department Chair

- The Chair is your ultimate point of contact to resolve financial questions, interpersonal disputes or misunderstandings, and departmental policy questions.

TA Coordinator

- The TA coordinator is in charge of connecting you with an instructor and a class, and addressing matters that may arise related to your teaching, for Quarters when you are a TA.

Fellow graduate students

- Your peers comprise one of your greatest resources. You will be spending a lot of time with them on your journey through graduate school. Your peers entering this year will work with you on coursework and on the Prelim process, and more senior students can be very effective mentors, teaching you how Grad School works.

Be sure to *use* all these human resources.

(5) Making Satisfactory Progress

Annual Progress Reports (November)

Each year, all ESS graduate students report on their academic and research progress, and report their funding plans for the following school year.

You will be asked to fill in a progress report form, describing activities such as:

- Classes completed.
- Milestones passed, such as Prelim or Qualifying exams.
- Data sets collected and/or analyzed from fieldwork or lab.
- Computer codes written, and/or numerical experiments conducted.
- Scientific meetings attended.
- Results presented (talks or posters)

As a new student, you will have very little to report yet in November, and that's OK.

- In your first year, your report mainly helps us with planning for your funding in your second year.
- Give us your info now on First-Year committees, Experiential Learning, etc. By getting this information into the data base now, you will have fewer questions to answer on the forms in November. ☺

Evaluation of Satisfactory Progress

The GPC and a group of faculty will look for satisfactory progress based on:

- Academic performance – maintaining a GPA of 3.0 or above.
- Research performance – are you working well with your advisor, developing and carrying out research effectively, and presenting your results at meetings, writing up results for publication?
- Teaching performance – while you are a TA, is your teaching effectively helping students to learn? If you have had challenges in teaching effectively, are you working to improve your teaching?

If you are facing challenges, the GPC can work with you to develop plans to address them.

(6) Time Line through Grad School

Year 1:

- Course work and departmental requirements.
- Form First Year Supervisory Committee.
- Work with advisor and other faculty to explore research ideas.
- Complete Prelim process (demonstrating that you understand what research is, that you can formulate a worthwhile and practical question, and that you can outline a practical approach to solving it.)
- Discuss involvement in writing research and fellowship proposals.

Year 2:

- Form your formal Supervisory Committee after Prelim.
- If seeking M.S. degree, aim to complete it by end of your second year.
- Write manuscript(s).

Year 3:

- General Exam (demonstrating that you have formulated a suitable topic for your PhD, that you have completed some aspects, and that you have a clear vision of the path to completion.)
- Continue to write up results.

Years 4-5:

- Complete research on Ph.D. topic.
- Write papers for publication.
- Defend thesis.
- You are now the expert!

Welcome to Earth and Space Sciences at University of Washington. Remember that good research requires hard work, but it should also be fun along the way. So go for it!

Details

Financial Support

The Department of Earth and Space Sciences has made a commitment of financial support to you, through an RA or TA for the 9-month academic year, for 2 years toward an MS degree, or for 5 years toward a PhD or combined MS and PhD, based on satisfactory progress.

- If your program should take longer than 2 years (M.S.) or 5 years (Ph.D.), we do everything we can to help you find funding beyond 5 years; however, students who have been in the program for less than 5 years have first priority if resources are limited. Working with your advisor to develop RA support through grant funding is always a good idea.
- Apart from a limited number of TA positions in summer (e.g. ESS 400 (*Field Geology*); ESS 101 *Intro to Geological Sciences*), funding for summer Quarter must be arranged between you and your advisor. It is your responsibility to discuss this with your advisor as soon as possible.
- Apply for graduate fellowships (NSF, USGS, NOAA, NASA).
- Help your advisor to write a research proposal that includes RA support for you.

Curriculum Plans

- Send the names of the three faculty on your first-year committee as well as a copy of your completed 2-year course plan to the GPC.

Experiential Learning Requirement

If you think that you have completed course work that could satisfy the ESS requirement, please send an email to the GPC and cc: Student Services, with: University, Year, Course number, Number of credits, and a brief description of the course activities (e.g. two sentences).

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