

Geology & Earth Science Graduate Program

Graduate Student Handbook

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Iowa State University
College of Liberal Arts & Sciences
Department of the Earth, Atmosphere, and Climate

Table of Contents

PROGRAM OVERVIEW	3
LEARNING GOALS FOR GRADUATE STUDENTS IN GEOLOGY AND EARTH SCIENCE	3
PROGRAM STRUCTURE AND ADMINISTRATION	3
FACULTY AND THEIR RESEARCH	4
REQUIREMENTS AND EXPECTATIONS	4
ENGLISH LANGUAGE REQUIREMENTS	4
EXPECTATIONS FOR DISSERTATIONS, THESES, AND CREATIVE COMPONENT	4
ACADEMIC STANDARDS	5
FINANCIAL SUPPORT	5
GRADUATE ASSISTANTSHIPS (GA)	5
ASSISTANTSHIP TIME LIMIT	6
BENEFITS	7
GUIDANCE FOR NEW STUDENTS	7
COMPUTERS	7
CREDIT LIMITS AND REQUIREMENTS	7
GRADUATE-LEVEL GEOLOGY COURSES	7
KEYS AND KEY CARD ACCESS	8
MAILBOXES	8
OFFICE SPACE	8
ORIENTATION	8
PHOTOCOPYING AND PRINTING	8
REGISTRATION & SCHEDULE CHANGES	8
START DATES.....	8
STUDENT RIGHTS AND RESPONSIBILITIES	8
TRAVEL AUTHORIZATION	9
TRAINING	9
TRANSPORTATION SERVICES	10
UNIVERSITY ACCOUNTS	10
VISAS	10
Academic Plan (AP)	10
M.S.	11 PH.D.
.....	11
ANNUAL EVALUATION	11
GRADUATE DEGREES IN GEOLOGY AND EARTH SCIENCE ...	11
M.S. GEOLOGY OR EARTH SCIENCE DEGREE	11
<i>Requirements for an M.S. in Geology or Earth Science</i>	11
M.S. IN GEOLOGY OR EARTH SCIENCE DEGREE (NON-THESIS OPTION)	12
<i>Requirements for M.S. in Geology or Earth Science (Non-Thesis Option)</i>	12
B.S./M.S. IN GEOLOGY	13
PH.D. PROGRAM IN GEOLOGY OR EARTH SCIENCE	13
<i>Statement of Philosophy</i>	13

<i>Requirements for Ph.D. in Geology or Earth Science</i>	13
<i>Stages of the Ph.D. Program</i>	14
SEMINAR REQUIREMENTS	16
DEPARTMENTAL SEMINAR	16
GEOLOGY GRADUATE STUDENT SEMINAR	16
GEOLOGY GRADUATE STUDENT ORGANIZATION (GGSO) ..	17
AWARDS, GRANTS, FELLOWSHIPS, & INTERNSHIPS	17
AWARDS	17
<i>Geology and Earth Science Program Awards</i>	17
<i>Graduate College Awards</i>	17
<i>Graduate and Professional Student Senate (GPSS)</i>	18
<i>Disciplinary Awards</i>	18
TRAVEL GRANTS	18
<i>Graduate Student Professional Advancement Grants (PAG)</i>	19
<i>Departmental Travel Support</i>	19
<i>Society and Conference Travel Support</i>	19
RESEARCH GRANTS	19
FELLOWSHIPS	20

Overview

This handbook is intended to help guide you through the Geology and Earth Science Graduate Programs within the Department of the Earth, Atmosphere, and Climate (EAC), including requirements related to M.S. and Ph.D. degrees, departmental procedures, and deadlines.

The document is subject to all policies as stated in the Graduate College Handbook and other University and College documents. Should conflict arise, University and College policies take precedence over those in this document.

Learning Goals for Graduate Students in Geology and Earth Science

EAC seeks to establish outstanding research and innovative teaching programs that apply fundamental principles of physics, chemistry, biology, and mathematics to interdisciplinary problems related to the Earth sciences. Motivated and talented graduate students are fundamental to the success of both the research and teaching missions of EAC. Graduates of the Geology and Earth Sciences Graduate Program should achieve the following learning goals:

1. Demonstrate comprehensive understanding of scholarly literature in the area of study.
2. Form testable hypotheses and articulate research objectives that, when met, will lead to significant contributions to the field of study.
3. Conduct qualitative and/or quantitative research via appropriate acquisition, analysis, and reporting of data.
4. Interpret research results appropriately, integrating them into the existing knowledge in the discipline.
5. Clearly and accurately communicate research findings orally and in writing, and often through the use images (tables, figures, and other forms of imagery) and electronic or other forms of media.
6. Articulate how the Program, including coursework and creative scholarship, fits into life and career goals.
7. Conduct scholarship, in teams or with independence, in ways that consistently demonstrate ethical practice and professionalism.

Program Structure and Administration

The Geology and Earth Science Graduate Programs (hereafter the Program) are administered by the Chair of the Department of The Earth, Atmosphere, and Climate (hereafter the Department).

The Curriculum Committee oversees the curriculum for all academic programs within the Department and works under educational philosophies established in the Department's Mission Statement. This committee consists of faculty that represent all the Department's academic programs. Committee members are selected by the Chair and confirmed by the Faculty.

The members of the Program's Graduate Admissions Committee are appointed by the Chair. The Committee sets procedure for review of graduate applications.

The Director of Graduate Education (DOGE) represents the Program's faculty and students to the Graduate College. The DOGE is responsible for management of the Program, including monitoring

academic progress through the Academic Plan (AP) and annual evaluations, ensuring that examinations are properly conducted, and the requirements are met for graduate degrees. The DOGE engages in interventions regarding academic progress and grievances. The DOGE works with EAC committees and faculty to establish policies, and participates in graduate admissions.

The Graduate Support Specialist (GSS) is typically the Department's administrative assistant. This person is responsible for generating letters of intent (LOI) regarding each graduate student's assistantship. The GSS has reference numbers for course registration. The GSS office is also the Department office, 253 Science Hall.

Each graduate student has a Major Professor who chairs their Academic Plan Committee (APC) and serves as the main advisor to the student regarding academics, research, assistantships, and professional development. The Major Professor is responsible for ensuring safe working conditions and the resources necessary for the completion of the course of study. The Major Professor meets regularly with the student and provides formative feedback on documents and presentations essential to the AP, including but not limited to the Prospectus, thesis or dissertation, and seminar presentations

The Geology Graduate Student Organization (GGSO) advisor meets regularly with the GGSO to advise on the expectations and events to be organized by the GGSO.

Faculty and Their Research

Faculty in the Program are members of or are formally affiliated with the Department and have been appointed as graduate faculty of the university by the Graduate College. A [list of current faculty](#) can be found on the Department webpage.

Additional information about graduate faculty membership and associate membership can be found in [Appendix G of the Graduate Handbook](#).

English Language Requirements

Use of the English language is expected to improve for all students as they progress toward their degrees. Students are expected to seek out opportunities for oral and written presentations and, if needed, to take formal coursework in these areas.

Graduate students whose native language is not English and who do not have a bachelor's or advanced degree from ISU or a U.S. institution, or do not meet the TOEFL or IELTS exemption score range, must take the English Placement Test at the beginning of their first semester of enrollment. This test is administered by the Department of English. It must be taken in addition to TOEFL, which is taken as part of the admissions process. A student who does not pass this examination is assigned to one or more courses in the English 99 and 101 series. This coursework must be completed during the first year of study. Registration holds are placed on the student's account if the student does not register for these classes during the first year of study. (There is a developmental course fee for the English 99 course.)

All international students who are nonnative English speakers and have teaching responsibilities are required to take the Oral English Certification Test (OECT) before they may be assigned duties.

Students not reaching Level-1 (full certification) are required to take English 180, Communication Skills for International Teaching Assistants.

Financial Support

Graduate Assistantships (GA)

Graduate assistantships (GAs) are given on a semester-by-semester basis depending upon satisfactory performance in research and/or teaching, adequate progress in annual evaluations and Academic Plan, including exams and thesis/dissertation-related research. GAs are typically for a 1/2-time (up to 20 hours per week) for the two semester of the regular academic year (i.e., a 9-month appointment). Current graduate assistant stipend rates are published on the Department [website](#).

Research Assistantships (RA) are generally provided from the research grant of an individual faculty member. Students hired under RA aid a faculty member in their funded research. The interests of the student are matched with those of a faculty member, typically the student's Major Professor, and the work generally leads to thesis or dissertation research.

Teaching assistantships (TA) are available for classes offered within the Department. TAs play a crucial role in the teaching mission of the department and generally involve 10 hours (1/4-time) or 20 hours (1/2-time) per week in the form of preparation, teaching, and grading for laboratories and courses. To be eligible for a TA, a student must have a background appropriate to the TA assignment. Teaching duties are usually assigned based upon department needs, class schedules, and previous experience. If a 1/2-time TA assignment does not provide 20 hours per week (or 10 hours per week for 1/4-time TA), students may be assigned additional duties as a Department Assistantship (DA).

Additional TA positions are also periodically available to students in the Program through partnerships with other departments. In addition, students may seek TAs or employment in other units on campus if no TA or RA support is available within the Department.

When a TA accepts a position, they have a professional obligation to teach for the complete academic semester, including attending any organizational meeting(s) that may occur. Teaching assistants do not have paid vacation days. There are circumstances when a TA may not be able to fulfill her or his teaching obligations, under these circumstances, the TA must work with the course instructor and other TAs in the Program to assure that missed classes are covered.

Teaching assistantships that involve the use of samples (e.g., minerals, rocks, fossils) and/or equipment for teaching include the responsibility of returning those samples and equipment to where they are stored and in the state they were found. Leaving samples/equipment in disarray at the end of the semester can ultimately result in loss of TA support in future semesters.

Additional assistantships may be available for one or more summer months. The Program provides Geology and Earth Science graduate students with one month of 1/2-time support every summer during their program, providing the student is making adequate progress towards degree completion. Additional RA support may be provided by the Major Professor for up to two months. Note that if you receive a summer assistantship you must register for at least one credit.

Additional financial support in the form of tuition scholarships are provided for graduate students holding an assistantship. An M.S. student on full admission with a 1/2-time assistantship receives a Graduate Tuition Scholarship for 75% of resident tuition, with the remaining 25% being covered by the Program via a Morehouse Fellowship. Ph.D. students on assistantships receive a scholarship award that pays 100% of the instate tuition costs.

Assistantship Expectations

At the beginning of a semester, students supported by assistantships are expected to report to their Major Professor as early as possible in the week prior to when classes begin. In addition, TAs should contact the instructor of record for the class they have been assigned as early as possible in the week prior to when classes begin.

Time limits suggested for assistantships are 2 to 3 years for students seeking M.S., 4 to 6 years for a Ph.D. The Graduate College discourages assistantship support beyond seven years.

Benefits

Insurance: GAs with an appointment of one quarter time or more for at least 3 months of the fall or spring terms receive self only health insurance coverage as a benefit for the term at no cost. You may purchase a Group Health Insurance plan, which covers hospitalization, accident expenses, surgery and maternity benefits for yourself, your lawful spouse or domestic partner, and your eligible children. Dental insurance for graduate students, and their lawful spouse or domestic partner and families is available and may be purchased for an additional premium. More information can be found at the Graduate College [website](#).

Graduate assistants will also be eligible for up to twelve weeks of [paid parental leave](#), provided by the Graduate College and the College of Liberal Arts and Sciences. Maternity or paternity leave requires that the remainder of the semester is covered by either teaching or research assistantship to qualify for the paid benefit.

Holidays: Graduate assistants are not required to be at the university during official holidays, which include New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and the Friday after Thanksgiving, Christmas, and two additional days each year determined by the President and ISU Administration.

Academic Plan (AP)

The AP Committee guides and evaluates the student during their graduate study. Among the committee's duties are:

- reviewing periodically the progress of the student;
- advising a student during the development of the dissertation, the thesis, or the creative component;
- guide the student in development and approval of the student's Academic Plan (AP);
- reading the dissertation, thesis, or creative component; and
- conducting the preliminary oral examination (for doctoral candidates) and the final oral examination (for master's and doctoral candidates).

Students are encouraged to establish an AP Committee as soon as possible as directed by the Major Professor. As a general guide, students should aim to form an AP Committee and schedule an APC meeting by the end of their second semester of graduate study.

An Academic Plan (AP) is the formal tracking tool for a student's credits earned toward degree and exam results. The AP is developed in Workday and requires approval by the AP Committee and DOGE. The AP Committee must be approved before the AP.

The AP must be approved by the Graduate College at least three calendar months before the preliminary oral examination for doctoral candidates; the three calendar-month timeframe for scheduling a preliminary oral examination begins the day that the Graduate College approves the AP. For master's students, the AP must be approved by the Graduate College by the last day of the semester prior to the term of the final oral examination. The Graduate College maintains an updated [list](#) of deadlines that students should refer to.

Students are responsible for seeing that the requirements for a graduate degree are satisfied and that they have met the appropriate deadlines for filing forms with the Department or the Graduate College. Students should read the Graduate College [Handbook](#) and be aware of the Graduate College's [guidelines](#) for theses and dissertations.

Any transfer of graduate credits from another institution to the AP must be recommended by the AP Committee, and graduate credit earned as a graduate student will be approved for transfer only if a B grade or better was earned.

The following requirements have been established by the Graduate College and the Program for the makeup of an AP Committee:

M.S.

- a. The AP Committee has at least three members.
- b. Two members, including the Major Professor, must be from the Program. It is strongly encouraged that the committee include one member from outside the Department.
- c. All committee members must belong to the Graduate Faculty of the University.
- d. If a minor is being pursued by the student, a member of the advisory committee associated with the minor must also be on the AP Committee.

Ph.D.

- a. The AP Committee has at least five members.
- b. All committee members must be members of the Graduate Faculty.
- c. At least three AP Committee members, including the Major Professor, must be from the Program. The committee must also include one or more members from outside the Department.
- d. If a minor is being pursued by the student, a member of the advisory committee associated with the minor (see ISU General Catalog) must also be on the AP Committee.

Annual Evaluation

The Graduate College requires that all active Ph.D. students have an annual review of their progress. In addition, the Ph.D. student will meet annually with the AP Committee to review the following:

1. Milestones or accomplishments reached (this should include academic performance, research activities, publications, presentations, professional improvement activities, institutional or professional service, or other);
2. Challenges (this should include any obstacles that have presented or hindered your ability to achieve your goals for the year);
3. Professional Development activities; and

4. Discussion of goals for the coming year.

Unsatisfactory progress during the previous year may result in the loss of academic standing or an assistantship. The [form](#) to be filled out by the Major Professor and signed by the student after the annual meeting can be found on the Graduate College (see Geology Program) and the Department webpage. The Major Professor will forward a copy of the signed form to the DOGE and graduate student, and retain a copy.

An annual evaluation is recommended for M.S. students.

Academic Standing

If a graduate student, M.S. or Ph.D. candidate, does not maintain a cumulative 3.0 grade point average on all course work taken, exclusive of research credits, they are placed on academic probation by the Dean of the Graduate College. Grades earned by graduate students in undergraduate courses at ISU are included in the calculation of the grade point average.

While on academic probation, a student cannot be admitted to candidacy for a degree and if appointed to a graduate assistantship, the student may be denied a tuition scholarship by their academic college. The Graduate College places a hold on future registration to ensure that registration does not take place without a review by the Department. Before the student registers for the next term, it is necessary for the Department to review a student's record and recommend whether the Graduate College should continue to permit registration. Probationary status for more than two years is grounds for dismissal for failure to maintain academic standing.

Before graduation is approved, the student must complete all courses listed on the AP with a "C" (2.0) or above and have an overall 3.0 average, unless an exception is recommended by the student's committee and approved by the Graduate College.

See Chapter 8 of the Graduate College Handbook.

Graduate Degrees in Geology and Earth Science

General Expectations for Dissertations, Theses, and Creative Components

A dissertation or thesis submitted as partial requirement for the M.S. with thesis option and Ph.D. degrees is expected to be written in a professional manner and should meet a standard equal to that of a leading scientific journal. An independent project with a corresponding product must be completed as partial requirement for the MS with creative component option. Students are responsible for ensuring that drafts of the dissertation, thesis, or creative component meet a high standard.

Students should consult the [Theses & Dissertations](#) information on the graduate college website for up-to-date templates and writing resources. The [Center for Communication Excellence](#) (CCE) in the Graduate College offers speaking and writing courses, which students are encouraged to include in their AP. The CCE offers speaking and writing consultations, peer review groups, and numerous

workshops. The CED also offers [Academic Communication Practices](#) (AcComP) certificate specifically designed for students for whom English is not the first language.

M.S. Geology or Earth Science

The Department offers M.S. degrees in Geology and in Earth Science. The Major Professor works with students enrolled the Program to assure that their AP will have appropriate breadth in Geology and Earth Science while permitting suitable specialization. The Program requires for the M.S. degree in Geology or Earth Science a minimum of thirty (30) credits of graduate-level courses distributed as follows:

- I. A minimum of 18 credits in formal courses. A minimum of nine (9) credits must be in GEOL courses numbered 5000 or above. The remaining course credits can be from GEOL or in other disciplines relevant to the student's field of interest.
- II. A minimum of 6 credits of research GEOL 6990.
- III. Two credits of Geology 5950A Graduate Seminar: Presentation Required. [Graduate Seminar](#) includes participation in the Annual Geology Graduate Student Seminar Day. Two seminars must be given during the degree.
- IV. At least 22 credits must be earned at ISU.
- V. A written thesis in a format approved by the Graduate College.
- VI. A public oral presentation of the thesis followed by a final oral examination by the AP Committee.

Candidates for the M.S. degree in Geology or Earth Science complete a thesis based on the candidate's original research. Notice of announcement of M.S. defenses will be circulated by the examinee to graduate students and faculty members in the Department at least two weeks prior to the defense. An electronic copy of the thesis should be made available to the Department one week prior to the defense.

M.S. in Geology or Earth Science (Non-Thesis Option)

The objective of the non-thesis option is to provide non-traditional students with an M.S. degree in Geology or Earth Science through coursework and a creative component. The Program requires for the M.S. degree in Geology or Earth Science with non-thesis option a minimum of thirty (30) credits of graduate-level courses distributed as follows:

- I. A minimum of nine (9) credits in GEOL courses numbered 5000 or above.
- II. A minimum of fifteen (15) credits of elective courses in GEOL or in other disciplines relevant to the student's field of interest.
- III. A minimum of 6 credits of Creative Component (GEOL 5990).
- IV. At least 22 credits must be earned at ISU.

In addition, candidates for M.S. degrees with a non-thesis option must prepare a scholarly product (a creative component) based on the candidate's interpretation of observations or ideas in the geologic literature, original research, or other independent project as guided by the Major Professor. The candidate must defend the product of the creative component before the AP Committee and are strongly encouraged to give the presentation publicly. The candidate should provide a copy of the creative component to committee members at least two weeks in advance, and distribute an electronic copy to the Department at least one week before the defense.

Additional Rules

1. Students that apply for the non-thesis option in Geology or Earth Science are generally not considered for assistantships.
2. Students pursuing the thesis-based M.S. in Geology or Earth Science may switch to the M.S. (non-thesis option) during their stay at ISU; however, this will be allowed only under unusual

circumstances. Students that are pursuing the M.S. (non-thesis option) may be admitted later to the thesis-based M.S. degree, provided that the student shows research promise and identifies a Major Professor..

B.S./M.S. in Geology

Requirements for the concurrent degree option (B.S./M.S. option), the M.S. degree in Geology or Earth Science requires a minimum of thirty (30) credits of graduate-level courses distributed as follows:

- I. 6 credits of GEOL courses at the 5000 level that will count both for the BS and MS degrees.
- II. For MS with thesis option, an additional twelve (12) credits of 5000-level courses, including at least 3 cr. from GEOL are required. For MS with creative component option, an additional eighteen (18) credits of 5000-level courses, including at least 3 cr. from GEOL are required.
- III. A minimum of 6 credits of research GEOL 5990 or 6990.
- IV. The research/project component can either be a thesis or a creative component.
- V. For MS with thesis, at least two semesters of GEOL 5950A [[Graduate Seminar](#)], which includes participation in the Annual Geology Graduate Student Seminar Day. Two seminars must be given during the degree.

Ph.D. in Geology or Earth Science

Statement of Philosophy

The Ph.D. degree emphasizes independent scholarly research; it prepares a graduate for leadership in the scientific community. A creative and productive scholar must have a good comprehension of basic principles, a capacity for critical and independent thought, and strong intellectual curiosity. In the evolution of a scholar, there is a transition from the stage where the primary concern is that of building a foundation to that in which the primary concern is extending knowledge through original research. The transition is a function of intellectual development and is different for each individual. The transition occurs when an individual has mastered sufficient knowledge to allow critical evaluation of material in the field of study. The extent to which an individual develops and exercises intellectual curiosity determines the ultimate success of that individual as a scholar.

The Ph.D. degree is intended to develop scholars. In the early stages of the Program, a firm comprehension of basic principles should be of primary concern. As graduate study progresses, the student should develop a disciplined, critical thinking and a strong intellectual curiosity. These skills should be honed during the latter stages of graduate study by the development of a dissertation that will be a significant contribution to the field chosen.

Requirements for Ph.D. in Geology or Earth Science

A minimum of 72 graduate credits must be earned for a doctoral degree.

- I. At least 36 graduate credits, including all dissertation research, must be earned at ISU.
- II. A minimum of 18 credits of dissertation research must be applied to the 72 credits required.
- III. For Ph.D. students who have already earned an MS, a minimum of 9 credits of formal coursework is required. Ph.D. students without an MS are required to complete a minimum of 24 credits in formal coursework, of which at least nine (9) credits must be in GEOL courses numbered 5000 or above. Coursework can include up to 6 credits of Graduate College courses (designated GR ST).
- IV. Credits earned for the M.S. degree may be applied if approved by the AP Committee, with the restriction that no more than 36 credits, and no research credits, may be included in the Ph.D. AP.

- V. Up to five (5) credits of Geology 5950A Graduate Seminar: Presentation Required. [Graduate Seminar](#). Ph.D. students are required to register for GEOL 5950A, which includes participation in the Annual Geology Graduate Student Seminar Day, each semester it is offered unless they have already earned 5 course credits.
- VI. A written thesis in a format approved by the Graduate College.
- VII. A public oral presentation of the thesis followed by an oral exam by the AP Committee.
- VIII. Ph.D. students must do at least one presentation at a scientific meeting.

Stages of the Ph.D.

The Ph.D. has two stages: pre-candidacy and candidacy. The pre-candidacy stage consists largely of course work designed to broaden and strengthen the student's fundamental knowledge, particularly in areas related to the dissertation topic. The candidacy stage consists mainly of research for the dissertation.

The Preliminary Examination is taken at the end of the pre-candidacy stage with the goal of assessing the student's research potential and knowledge of related basic principles. The Final Examination is taken at the end of the candidacy stage and is concerned with the subject of the dissertation.

Preliminary Examination

The Graduate College requires that the student takes their preliminary exam at least six months before scheduling their defense. As a general rule, a student should aim to take the preliminary examination for admission into the candidacy stage by the end of the fourth semester of residence. For those students who enrolled originally as M.S. candidates, they should take the preliminary exam by the end of the semester following admission into the Ph.D. and approval of the AP to align with this timeline. The preliminary examination cannot be taken during the same semester that the AP (for the Ph.D.) is approved by the Graduate College.

Students are responsible for submitting the [Preliminary Oral Examination Request Forms](#) to the Graduate College in the timeline specified.

The student prepares a prospectus on their area of intended dissertation research. The prospectus is not to exceed 30 (double spaced) typed pages, in which the science questions and techniques to be used in addressing the questions should be discussed in detail. The current status of the proposed field of investigation should be surveyed and important literature cited. The student should also discuss the relationship between the proposed research and broader aspects of earth sciences. The prospectus may, but is not required to, contain results of original research by the student. The examination committee shall consist of the members of the AP Committee. The prospectus must be shared with the committee members at least two weeks prior to the oral exam.

The preliminary examination is oral and is intended to evaluate the breadth and depth of knowledge in the field of study and to assess the student's potential to become a creative research scientist. The examination normally tests general knowledge as it pertains to the student's research prospectus, such as the principles and techniques on which the proposed research is based and on the relationships between the proposed research and other areas of study. Another goal is to evaluate, through questioning based on the prospectus, those attributes --originality, creativity, independent thought, awareness of significant problems in the field, --which are important to success in research. Questions concerning other areas of general interest may also be asked.

Two or more negative votes from the AP Committee constitute failure of the exam. Only one retake of the exam will be allowed; this retake must be done prior to the end of the following semester.

Dissertation

A doctoral dissertation must be completed on a topic in the major field of study and written in a form that is suitable for publication. To be acceptable, it must constitute a significant contribution to knowledge within the field of study and be approved by the student's APC. Formatting and archiving of the dissertation must follow Graduate College requirements. Copies of the completed dissertation must be shared with AP Committee **two weeks prior to the date of the final oral examination**. An electronic copy of the dissertation should be distributed to the Department one week in advance of the defense.

Students are responsible for submitting the [Graduation and Thesis/Dissertation Forms](#) to the Graduate College in the timeline specified.

Final Oral Examination

A final oral examination will be taken completion of all other work described for the degree including the presentation of dissertation related work at a regional, national, or international symposium. The final oral examination will be administered by the AP Committee with the Major Professor serving as chair. The examination is intended to be a defense of the dissertation. Notice of announcement of Ph.D. defenses will be circulated by the examinee to graduate students and faculty members in the Department at least two weeks prior to the defense. The final examination is open to all interested persons.

Students are responsible for submitting the [Final Oral Examination Request Forms](#) to the Graduate College in the timeline specified.

Seminar Requirements

Weekly Department Seminar

All full-time students are required to enroll in GEOL 5950 [*Graduate Seminar*], which has two parts: GEOL 5950A, which is taken in the spring semester (1 Cr.) and GEOL 5950B (R cr.), which is taken in the fall semester. A maximum of two credits from GEOL 5950A can count toward a MS student's POS credit requirements and a maximum of five credits from GEOL 5950A can count toward a PhD student's POS credit requirements. GEOL 5950B during fall semester requires attending 80% of the weekly departmental seminar series to pass. GEOL 5950A requires attending 80% of the weekly departmental seminars and presenting in the Geology Graduate Student Seminar.

Geology Graduate Student Seminar

During the spring semester, prior to the spring break, a day is devoted to the presentation of conference-style talks by graduate students. The goals of this seminar day are twofold. Graduate students gain experience in public speaking in front of their peers and the entire faculty. This experience provides useful practice for the presentations that students give at scientific meetings. Also, these talks acquaint everyone in the Program with everyone else's research. All Program graduate faculty are expected to provide written feedback to presenting students.

Each graduate student enrolled in Geol 5950A is expected to present a professional quality presentation, which is generally of 15 minutes length with 5 minutes for questions (20 minutes total) at each Geology Graduate Student Seminar while they are enrolled. Students are expected to

give a presentation on the results of their current research project unless they are in the first year of enrollment in the Department. First-year M.S. students may give a presentation on any geological topic, whereas first-year Ph.D. students may give a presentation on a previous research project.

The following exceptions to presenting a seminar may be made to students:

1. who have medical emergencies.
2. who have other legitimate emergencies (subject to approval from the Chair). Students should not request an exemption unless they have discussed the matter with their adviser and have their adviser's approval to petition the Chair.
3. who are admitted to the M.S. in a spring semester and applies only to that semester.

Any student who is granted an exception for reasons 1 or 2 above must give a seminar in the Department at the earliest possible time following the Geology Graduate Student Seminar or at the latest possible time prior to it. Students with unusual circumstances that present a barrier to symposium participation, with permission of their Major Professor, can petition the Chair and DOGE to have one credit of Geol 5950A waived.

Grievance Procedures

Grievance procedures are outlined in the Graduate College Handbook [section 8.5](#). When graduate students become involved in disputes with their Major Professors that cannot be resolved by direct communication, the DOGE and/or Department Chair will serve as informal or formal mediator depending on the particular circumstances. Students should contact the DOGE and/or Department Chair should such disputes arise. The DOGE and/or Department Chair will work with the student to help resolve the dispute. Several formal University avenues of appeal are available to graduate students to handle grievances concerning grades and instruction and for grievances related to scholarly and professional competence. In most cases, procedures start at the program level and lead through a series of steps to higher appeal channels. All such grievance procedures must be initiated within 3 weeks after end of semester during which the alleged grievance occurred.

Guidance for New Students

Computers

All Iowa State students are [required](#) to have a laptop computer. Information related to software and file storage can be found on the Information Technology [Service Portal](#). Software is available for University-owned computers. The computer lab in room 255 is open for research-related work when not in use by a course.

Credit Limits and Requirements

The Graduate College Handbook [Chapter 2](#) covers enrollment, registration, and tuition and fees. Graduate students on assistantships must register for a minimum of one credit each term. Students on assistantships are considered full-time. Students not on assistantships must be registered for 9 credits to be considered full-time. Graduate students must register for a minimum of one credit during the semester in which the final oral examination is taken.

Mailboxes

Graduate students have assigned mailboxes in the departmental copy room (room 252 Science Hall). Program faculty have mailboxes in the Department Office (room 253 Science Hall).

Office Space

New students are generally assigned a desk in one of many office spaces in Science or Agronomy Hall and should expect to share space with one or more students. Space is assigned by the Department Chair and Building Supervisor.

Orientation

Each fall, a student orientation is held for new and continuing students in Geology, Earth Science, and Meteorology graduate programs. The orientation is required for incoming students, and continuing students are encouraged to attend. Topics may include: introduction to the Department, graduate college, and university resources; lab & safety orientation and trainings, Academic Plan for graduate degrees; and resources for life in Ames.

Photocopying and Printing

Students may be given a code by their advisor for research, teaching, or university-related business copying and printing. The photocopier has scanning capability. Students should use their personal print credits on university-owned printers in classrooms and computer labs. Information on print credits can be found on the Information Technology [website](#).

Registration & Schedule Changes

Graduate students should register in Workday following instructions on [Registration webpage](#) as soon as the time period opens for them. Descriptions of courses taught in Geology can be found in the [Course Catalog](#). To see which classes are being offered in an upcoming semester, consult the [Schedule of Classes](#).

Forms and information for schedule or program changes can be found on the registrar's webpage for [students](#). Adding or dropping classes may cause your status to change from part-time, half-time or full-time and may affect your academic or financial aid status. Please speak with your Major Professor if you have concerns.

Student Rights and Responsibilities

Graduate students are expected to demonstrate a commitment to their academic endeavors, to make steady progress toward academic milestones and goals, and to demonstrate ethical practices at all times. All graduate students are governed and protected by:

- the Board of Regents' Uniform Rules of Personal Conduct,
- the [Student Code of Conduct](#) that contains the Student Conduct Code and student judicial process,
- University regulations in the “[Student Life](#)” section of the Policy Library,
- for students on appointment, the “[Personnel, Conduct & Human Relations](#)” section of the Policy Library, Department procedures, and the terms of sponsored research agreements that fund their assistantships or other employment,
- academic policies in the University Catalog,
- Department or Program rules and policies,
- grievance procedures described in the Graduate College Handbook Section 9.5,
- the University’s [Sexual Misconduct, Sexual Assault, Sexual Harassment, Stalking, and Intimate Partner Violence Involving Students Policy](#), and

- the University's [Discrimination and Harassment Policy](#).

Graduate students on assistantship appointment also are governed by the policies applicable to instruction, research, and the conduct of University business as found in the [Policy Library](#). Everyone engaged in graduate education to adhere to the University's [Principles of Community](#).

Travel Authorization

Students on assistantships must fill out a Travel Authorization Form if traveling during regular business days during the semester. The form is available [here](#) and a QR code is posted in the main office. Graduate and professional students traveling internationally for ISU-related activities are required to register their travel through the [Office of Risk Management](#). Registered travelers are provided with insurance through this process.

Students needing a travel reimbursement should initiate the process with an email to finance_delivery@iastate.edu.

Training

If you will be working in one of the Department's laboratories, it will be necessary for you to undergo training through Environmental Health and Safety (EH&S) prior to beginning your work. Students should consult with their Major Professor or supervisor and complete required trainings through [Workday Learning](#) before working in a lab. If you have any additional concerns about laboratory usage or safety, please contact Suzanne Ankerstjerne (ankerssm@iastate.edu).

Transportation Services

Graduate assistants who will reserve vehicles and drive for departmental teaching or research should begin by submitting a [Motor Vehicle Records Check](#). Note that approval is fast if your driver's license is for Iowa but could take months or weeks if out of state. If you will need to drive a 15-passenger van and/or trailer you will need to complete additional [training](#).

Visas

International students on visas (F-1 and J-1) are required to maintain a certain number of credits. International students, even those in their final term, must be registered full-time or previously approved by the International Students and Scholars Office (ISSO) to reduce their course load. Information can be found on the [ISSO website](#).

Geology Graduate Student Organization (GGSO)

The GGSO serves to foster academic and social cohesion among graduate students in the Program and the Department. Membership into the organization is extended to all fee-paying graduate students.

The GGSO is expected to:

1. Participate in the Program Orientation for new graduate students in the Fall.
2. Mentoring incoming graduate students in their first semester, which may include organizing social activities, such as a Fall Camping Trip.
3. Organizes the Annual Geology Graduate Student Seminar in the Spring.
4. Contribute a performance or activity at the Geology Banquet in the Spring.
5. Nominate one speaker per year for the Weekly Department Seminar.
6. Contribute to the Department's outreach activities.

The formal governance documents can be found on the student organization website:

Awards, Grants, Fellowships, & Internships

Awards

Geology and Earth Science Graduate Program Awards

Several awards are given to graduate students in the Program at the Geology Banquet, which takes place each spring. The awards selected by a committee of faculty appointed by the Chair based on students who have been nominated by the faculty early in the Spring Semester.

- I. John Lemish Memorial Scholarship is given to one or more graduate students with demonstrated excellence in research.
- II. Outstanding Teaching Assistant Award is given to one or more graduate students with demonstrated excellence in teaching.
- III. Pick of the Year Award is given to a graduate student who has shown outstanding interest in the Program through involvement in activities, voluntary service, and good collegueship.
- IV. Outstanding Contributions Award is given to graduate students who have demonstrated excellence in Program service.
- V. The Top and Runner-up Paper Awards are given to the students with outstanding presentations at the Geology Graduate Student Seminar, as decided by the entire Program faculty.

Graduate College Awards

The Graduate College has several awards available for graduate students. Students interested in being nominated should contact their Major Professor and the DOGE.

- I. One graduate student from each graduate program may be nominated in each semester (fall, spring, and summer) by the DOGE for the Research Excellence (REX) Award. This award recognizes students for outstanding research or creativity as seen in their theses and dissertations. These students are also expected to be academically superior and able to not only do research but develop a well-written product. Awardees receive a certificate and cord to be worn during graduation.
- II. The Karas Award for Outstanding Dissertations is offered each spring semester to recognize a superior mathematical and physical sciences and engineering or social sciences dissertation. The two disciplinary areas for consideration in odd years are Humanities and Fine Arts and Biological Sciences. The two disciplinary areas for consideration in even years are Mathematical and Physical Science and Engineering Social Sciences. The award amount will be \$1,000 for each dissertation award winner. Award winners are expected to be available to receive the award in person.
- III. The Zaffarano Prize for Graduate Student Research is offered each spring semester: to recognize superior performance in publishable research by an ISU graduate student. Publishable research is defined as work written and accepted for publication in a national or international refereed journal. Both the quality and the number of publications produced while a student at ISU will be considered. Nominees must either be currently enrolled at ISU or have graduated in the 2 preceding terms.
- IV. Three Minute Thesis (3MT) celebrates the exciting research conducted by master's or Ph.D. students around the world. Developed by The University of Queensland, the

competition cultivates students' academic, presentation, and research communication skills. Presenting in a 3MT competition increases students' capacity to explain their research in three minutes in a language appropriate to a non-specialist audience. Competitors are allowed one PowerPoint slide, but no other resources or props.

Graduate and Professional Student Senate (GPSS)

The GPSS gives awards in teaching, research, and leadership. Multiple awards in each category are given each year. Selected graduate/professional student recipients are presented certificate and a financial award at the annual GPSS spring Conference. This amount is subject to change on a yearly basis.

Disciplinary Awards

Many societies and journals also offer awards to students. Below is a list of a few that may be relevant. Students are encouraged to investigate possible awards through scientific societies, journals, or conferences.

- I. The Society for Exploration Geophysicists (SEG) awards a \$250 prize for the [best student chapter article](#) in the near-surface geophysics newsletter *Near Surface Views*.
- II. The American Geophysical Union (AGU) [Mineral and Rock Physics Graduate Research Award](#) is presented annually to one or more promising young scientists and recognizes outstanding contributions to the field of mineral and rock physics achieved during the honoree's Ph.D. research.
- III. The Geological Society of America (GSA) disciplinary Divisions give awards for student presentations at the annual GSA meetings. For example, the [Geobiology and Geomicrobiology Division](#) or the [Geophysics and Geodynamics Division](#).

Travel Support and Grants

Graduate students are strongly encouraged to give at least one presentation at a scientific meeting prior to graduation. The Program provides each graduate student studying in Geology or Earth Science a travel scholarship of up to \$1500 per academic year (August to July). Funds are for travel to professional conferences or meetings. Students should work with their Major Professor to develop a simple budget justifying the amount requested and submit it to the Chair for approval. Options for covering any costs that are expected to exceed \$1500 should be discussed with the Major Professor. In some cases, the Major Professor will be able to cover the additional expenses. This scholarship cannot be saved to be combined with a second scholarship in the following year.

Students are encouraged to apply for funds to help support travel costs by applying for grants from other sources. Grants that have been commonly awarded to students are listed below. Always talk to your Major Professor about travel support and travel grants that are specific to your field.

Graduate Student Professional Advancement Grants (PAG)

The [PAG](#) is provided for ISU graduate students by the Graduate College and the GPSS. Funds may be granted for professional meetings and conference travel. For eligibility, deadlines, and the application, please see the [PAG](#) webpage.

Each graduate student is eligible to receive one PAG per fiscal year (July 1 through June 30). Each request must be approved by the Major Professor, Chair, and Academic Dean. Applications should be submitted as early in the Fall and Spring semesters as possible as funds are usually depleted by November 15 for the Fall funding period and April 1 for the Spring funding period. The forms are found at <http://www.gpss.iastate.edu/professional-advancement-grants>.

Society and Conference Travel Support

Many conferences and societies provide travel awards to graduate students. In addition, some meetings provide free or reduced registration for volunteering to help run the meeting. Students should check with their society or conference.

- I. The AGU [Fall Meeting Student Travel Grants](#) provide funds to assist students with a combination of costs associated with attending the Fall Meeting. Both in-person and virtual attendees receive \$1,000 USD toward the cost of registration and educational expenses. Applications will open the first week of July.

Research Grants

Many organizations and societies provide research grants for graduate students. Below is a list of a few resources, but students should also check with their society or conference.

- I. The primary role of the GSA [research grants program](#) is to provide partial support of master's and doctoral thesis research in the geological sciences for graduate students enrolled in universities in the United States, Canada, Mexico and Central America. In 2022, \$784,655 was awarded to 341 graduate students (~59% of the 578 who applied), with an average grant of \$2,301.
- II. The American Association of Petroleum Geologists (AAPG) Foundation [Grants-in-Aid](#) provides financial assistance to graduate students (currently enrolled in M.S. or Ph.D. programs) whose thesis research has application to the search for and development of petroleum and energy-mineral resources, and/or to related environmental geology issues. Grants are based on merit and, in part, on the financial needs of the applicant.
- III. The SEG [Near Surface Geophysical Research Award](#) provides research grants to support undergraduate or graduate students in good standing and enrolled in a relevant academic program at an accredited institution. can be applied for from January to March annually.
- IV. The Society of Economic Geologists (SEG) [Graduate Student Fellowship](#) Program provides one-year fellowships, ranging from US\$2,500 to US\$10,000, are awarded each year to students who intend to pursue a course of study in economic geology leading to a Professional Master's, Master of Science (M.Sc.) and/or Ph.D. degree.
- V. The Mineralogical Society of America (MSA) has two research grants that students are also eligible to apply for: the [Research in Crystallography Award](#) and the [Student Research in Mineralogy and Petrology grant](#).
- VI. [Dr. Thomas C. Winter Graduate Student Research Award](#) is managed by the GSA Foundation and is named in honor of the late Dr. Thomas Winter. It supports research grants for graduate students working in hydrogeology/hydrology.
- VII. The [Iowa Space Grant Consortium](#) (ISGC) awards fellowships to support outstanding graduate students at Iowa and Iowa State pursuing research opportunities in science, technology, engineering, and math (STEM) disciplines that support the mission of the National Aeronautics and Space Administration (NASA).
- VIII. The Continental Scientific Drilling (CSD) Facility at the University of Minnesota invites applications to a [competitive award program for graduate students](#) working with core samples from continental localities, including lakes. These \$1000 grants can be used to support student travel to Minneapolis, core shipment, lodging while at the facility, lab fees, and supplies consumed in [initial core description \(ICD\)](#).

Fellowships

Fellowships provide financial support that generally includes stipend and may also include research funding. Federal agencies often provide graduate student fellowships, but others may be available through private foundations. Below is a list of a few resources, but students should do additional searches for fellowships that may target specific disciplines or populations.

- I. The purpose of the National Science Foundation (NSF) [Graduate Research Fellowship Program \(GRFP\)](#) is to ensure the quality, vitality, and diversity of the scientific and engineering workforce of the United States. GRFP seeks to broaden participation in science and engineering of underrepresented groups, including women, minorities, persons with disabilities, and veterans. The five-year fellowship provides three years of financial support inclusive of an annual stipend of \$37,000.
 - II. [Future Investigators in NASA Earth and Space Science and Technology \(FINESST F.5\)](#) solicits proposals from accredited U.S. universities and other eligible organizations for graduate student-designed and performed research projects that contribute to the Science Mission Directorate's (SMD) science, technology, and exploration goals. The graduate student shall have the primary initiative to define the proposed FINESST research project and must be the primary author, with input or supervision from the proposal's Principal Investigator (PI) or mentor, as appropriate. The proposal must present a well-defined research problem/activity and a justification of its scientific significance to NASA. FINESST awards are research grants for up to three years and up to \$50K per year.
 - III. The American Geosciences Institute (AGI) offers the [Harriet Evelyn Wallace Scholarship for Women Geoscience Graduate Students](#). Applications are open to all women pursuing a Master's or Doctoral degree in the geosciences. The successful applicant will be a thesis-based, full-time student and must be a U.S. citizen or permanent resident. The Harriet Evelyn Wallace Scholarship is solely merit-based and applicants will be evaluated on their probability of successfully completing a geoscience graduate program and transitioning into the geoscience profession following graduation.
 - IV. [Ford Foundation Fellowships](#) provide support for predoctoral, dissertation, and postdoctoral study. The program seeks to increase the diversity of the nation's college and university faculties by increasing their ethnic and racial diversity, maximize the educational benefits of diversity, and increase the number of professors who can and will use diversity as a resource for enriching the education of all students.
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