

Earth Science Honors Thesis

Requirements

Expectations

Timeline

Criteria for Distinction in Research

Undergrad honors thesis committee:

Helge Gonnermann

Juli Morgan

Laurence Yeung

Research in the Earth Science Department

- Opportunity to get exposure to real scientific problems, and experience designing and carrying out meaningful research
 - Potential graduate projects
 - Explore career opportunities
- Many faculty at Rice, working on cutting-edge problems, spanning a wide range of interests & methods
 - Geophysics: seismology, marine seismic data, gravity, etc.
 - Sedimentary systems: stratigraphy, sed environments, transport, etc.
 - Tectonics: crustal to lithospheric scale, data analysis to modeling
 - Geochemistry: field, lab, modeling, etc.
 - Marine & on-land field studies, core and sample analysis
 - Geophysical data analysis and interpretation
 - And so much more

Application Criteria

- Junior or Senior
- Strong performance in ESCI courses, and cognate courses
- Grade of A- or better in ESCI 481 – Undergraduate Research in Earth Science, taken spring of junior year
- Identified research advisor who has committed to project, and provides letter of recommendation
- Feasible project – and data availability, if necessary – that can be accomplished in proposed timeframe, e.g., 2-3 semesters, +/- summer, depending on application date
- Previous research experience desirable, but not required
- *Honors thesis committee will evaluate application, assess feasibility and advisor's commitment → decision within ~week.*

What are the steps?

- Identify a potential **undergraduate thesis advisor**, and in cooperation with him/her, a thesis topic.
- Select a thesis committee: thesis advisor, and one other faculty member (one member of honors thesis committee will be assigned)
- Get started on a research project
- Register for **ESCI 481 - Undergraduate Research in Earth Science**, and **ESCI 593/594 – Seminar: Department Research**
- Register for **ESCI 401 – Honors Thesis Seminar**
- Fill out the **application form** and submit to Juli Morgan, ideally by the end of spring semester of junior year, along with:
 - A **letter of recommendation** from your proposed thesis advisor
 - A **preliminary thesis proposal (2 pages)** describing your proposed project
- *Typically, steps should be completed in **spring of your junior year**.*

Preliminary Proposal & Beyond

- Proposal (max two pages in length) should include:
 - What is the problem you will investigate?
 - What are the specific aims of the project?
 - How will you carry out the research, e.g., summary of methods?
 - What is the role of your research advisor?
 - What is the timeline for the thesis year?
 - Previous research accomplishments, and how they relate to this study
- If approved to carry out a senior thesis, during fall semester:
 - **Select thesis committee:** faculty advisor and member of thesis committee
 - Prepare and submit a **full written thesis proposal** to thesis committee
 - **Present your proposal orally** in ESCI 401 or similar forum
 - **Participate in meetings** with other honors thesis candidates
- During Spring semester:
 - **Finish thesis research**
 - Give **public exit talk**
 - Submit **written thesis** – to be evaluated by honors thesis committee

Criteria for Distinction in Research and Creative Works (Earth Science)

- *This distinction recognizes a Rice Earth Science undergraduate for exceptional research accomplishments. Applicants must submit a senior honor's thesis, first-authored publication in a peer-reviewed journal, or a first-authored pre-publication to be eligible. Applicants are also required to give an oral presentation of their work in the department in their final semester. Presentation of research at a conference is useful, but alone is not sufficient. Applications must be accompanied by a cover letter and at least two reference letters. The cover letter, written by the applicant, should detail her/his contributions to the research. One reference letter should come from the applicant's adviser. The second reference letter should come from a faculty member not directly involved in the research, but who has reviewed the application materials and listened to the oral presentation.*
- You will be eligible for consideration for this distinction upon completion of your written honors thesis, and its approval by the honors thesis committee. However, you must submit an application and letters.