APPENDIX 1

FACULTY DIRECTORY 2009-2010
# Appendix 1 Faculty, Emeritus and Adjunct Faculty

## Teaching Faculty
(The following people can supervise PhD/Masters students and serve on research committees)

<table>
<thead>
<tr>
<th>Title</th>
<th>Name</th>
<th>Specialty</th>
<th>Phone</th>
<th>Room</th>
<th>Email</th>
<th>Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professor</td>
<td>Abhijit Basu</td>
<td>Sedimentary and Planetary Petrology</td>
<td>5-6654</td>
<td>G521</td>
<td>basu</td>
<td>Geol Sci</td>
</tr>
<tr>
<td>Professor</td>
<td>David Bish</td>
<td>Clay Mineralogy, X-ray Diffraction</td>
<td>5-2039</td>
<td>G209</td>
<td>bish</td>
<td>Geol Sci</td>
</tr>
<tr>
<td>Professor</td>
<td>Simon Brassell</td>
<td>Biogeochemistry, Organic Geochemistry</td>
<td>5-3786</td>
<td>G125/G313</td>
<td>simon</td>
<td>Geol Sci</td>
</tr>
<tr>
<td>Assoc. Professor</td>
<td>James Brophy</td>
<td>Igneous Petrology, Geochemistry</td>
<td>5-6417</td>
<td>G249</td>
<td>brophy</td>
<td>Geol Sci</td>
</tr>
<tr>
<td>Professor</td>
<td>Jeremy Dunning</td>
<td>Structural Geology</td>
<td>5-8392</td>
<td>GY415</td>
<td>dunning</td>
<td>Geol Sci</td>
</tr>
<tr>
<td>Assoc. Professor</td>
<td>Michael Hamburger</td>
<td>Geophysics, Seismology and Tectonics</td>
<td>5-2934</td>
<td>G419</td>
<td>hamburg</td>
<td>Geol Sci</td>
</tr>
<tr>
<td>Assoc. Professor</td>
<td>Claudia Johnson</td>
<td>Geobiology</td>
<td>5-0646</td>
<td>G501</td>
<td>claudia</td>
<td>Geol Sci</td>
</tr>
<tr>
<td>Asst. Professor</td>
<td>Kaj Johnson</td>
<td>Geophysics</td>
<td>5-3162</td>
<td>G401</td>
<td>kajjohns</td>
<td>Geol Sci</td>
</tr>
<tr>
<td>Assoc. Professor</td>
<td>Greg Olyphant</td>
<td>Hydrogeology, Quaternary Geology and Geomorphology</td>
<td>5-1351</td>
<td>S301B</td>
<td>olyphant</td>
<td>Geol Sci</td>
</tr>
<tr>
<td>Professor</td>
<td>Gary Pavlis</td>
<td>Geophysics, Seismology and Tectonics</td>
<td>5-5141</td>
<td>G401</td>
<td>pavlis</td>
<td>Geol Sci</td>
</tr>
<tr>
<td>Assoc. Professor</td>
<td>David Polly</td>
<td>Geobiology</td>
<td>5-7994</td>
<td>G513</td>
<td>pdpolly</td>
<td>Geol Sci</td>
</tr>
<tr>
<td>Professor</td>
<td>Lisa Pratt</td>
<td>Biogeochemistry, Sedimentology/Stratigraphy</td>
<td>5-9203</td>
<td>G309</td>
<td>prattl</td>
<td>Geol Sci</td>
</tr>
<tr>
<td>Professor</td>
<td>Ed Ripley</td>
<td>Isotope Geochemistry</td>
<td>5-1196</td>
<td>G329</td>
<td>ripley</td>
<td>Geol Sci</td>
</tr>
<tr>
<td>Professor</td>
<td>Juergen Schieber</td>
<td>Sedimentary Geology</td>
<td>6-4740</td>
<td>G523</td>
<td>jschiebe</td>
<td>Geol Sci</td>
</tr>
<tr>
<td>Professor</td>
<td>Robert Wintsch</td>
<td>Metamorphic, Structural, Sedimentary Petrology, Tectonics and Geochronology</td>
<td>5-4018</td>
<td>G325</td>
<td>wintsch</td>
<td>Geol Sci</td>
</tr>
<tr>
<td>Assoc. Professor</td>
<td>Chen Zhu</td>
<td>Hydrogeology, Mass Transport, Water-Rock-Gas-Microbe Interactions</td>
<td>5-8852</td>
<td>G425</td>
<td>czhu</td>
<td>Geol Sci</td>
</tr>
</tbody>
</table>

## Research Faculty
(The following people can serve on research committees, and the Senior Scientists can supervise PhD/Masters students)

<table>
<thead>
<tr>
<th>Title</th>
<th>Name</th>
<th>Specialty</th>
<th>Phone</th>
<th>Room</th>
<th>Email</th>
<th>Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>Senior Lecturer</td>
<td>Bruce Douglas</td>
<td>Tectonics and Structural Geology</td>
<td>5-3848</td>
<td>G421</td>
<td>douglasb</td>
<td>Geol Sci</td>
</tr>
<tr>
<td>Research Scientist</td>
<td>Erika Elswick</td>
<td>Geochemistry, Sedimentology, Sedimentary Ore Deposits</td>
<td>5-2493</td>
<td>G410</td>
<td>eelswick</td>
<td>Geol Sci</td>
</tr>
<tr>
<td>Senior Scientist</td>
<td>Chusi Li</td>
<td>Petrology, Geochemistry, Mineral Deposits</td>
<td>6-1556</td>
<td>G219</td>
<td>cli</td>
<td>Geol Sci</td>
</tr>
<tr>
<td>Research Scientist</td>
<td>Peter Sauer</td>
<td>Biogeochemistry, Paleoclimatology</td>
<td>5-6591</td>
<td>G323</td>
<td>pesauer</td>
<td>Geol Sci</td>
</tr>
<tr>
<td>Senior Scientist</td>
<td>Arndt Schimmelmann</td>
<td>Organic Geochemistry, Chemical Oceanography</td>
<td>5-7645</td>
<td>G321</td>
<td>aschimme</td>
<td>Geol Sci</td>
</tr>
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## Emeritus Faculty

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<tr>
<td>Robert Blakely</td>
<td>Geophysics</td>
<td>blakely</td>
<td>Geol Sci</td>
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<tr>
<td>J. Robert Dodd</td>
<td>Geobiology</td>
<td>dodd</td>
<td>Geol Sci</td>
</tr>
<tr>
<td>John Droste</td>
<td>Stratigraphy</td>
<td></td>
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</tr>
<tr>
<td>Donald Hattin</td>
<td>Stratigraphy</td>
<td>hattin</td>
<td>Geol Sci</td>
</tr>
<tr>
<td>Erle Kauffman</td>
<td>Paleontology</td>
<td>kauffman</td>
<td>Geol Sci</td>
</tr>
<tr>
<td>Noel Krothe</td>
<td>Hydrogeology</td>
<td>krothen</td>
<td>Geol Sci</td>
</tr>
<tr>
<td>Enrique Merino</td>
<td>Geochemistry and Petrology</td>
<td>merino</td>
<td>Geol Sci</td>
</tr>
<tr>
<td>Judson Mead</td>
<td>Geophysics</td>
<td></td>
<td>Geol Sci</td>
</tr>
<tr>
<td>Haydn H. Murray</td>
<td>Clay Mineralogy</td>
<td>murrayh</td>
<td>Geol Sci</td>
</tr>
<tr>
<td>Al Rudman</td>
<td>Geophysics</td>
<td>rudman</td>
<td>Geol Sci</td>
</tr>
<tr>
<td>Lee J. Suttner</td>
<td>Sedimentology and Stratigraphy</td>
<td>suttner</td>
<td>Geol Sci</td>
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APPENDIX 1 FACULTY, EMERITUS AND ADJUNCT FACULTY

<table>
<thead>
<tr>
<th>Adjunct Faculty</th>
<th>Hydrology</th>
<th>5-0731</th>
<th>SPEA</th>
<th>haitjema</th>
<th>SPEA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professor</td>
<td>Henk Haltjema</td>
<td>5-0731</td>
<td>SPEA</td>
<td>haitjema</td>
<td>SPEA</td>
</tr>
<tr>
<td>Senior Scientist</td>
<td>Brian Keith</td>
<td>5-4213</td>
<td>S117</td>
<td>keithb</td>
<td>IGS</td>
</tr>
<tr>
<td>Distinguished Professor</td>
<td>Peter Ortoleva</td>
<td>5-2717</td>
<td>CH203E</td>
<td>ortoleva</td>
<td>Chemistry</td>
</tr>
<tr>
<td>Professor</td>
<td>Jeff White</td>
<td>5-0731</td>
<td>SPEA</td>
<td>whitej</td>
<td>SPEA</td>
</tr>
<tr>
<td>Research Scientist</td>
<td>Maria Mastalerz</td>
<td>5-9416</td>
<td>S225</td>
<td>mmastale</td>
<td>IGS</td>
</tr>
<tr>
<td>Director and State Geologist</td>
<td>John Steinmetz</td>
<td>5-5067</td>
<td>S107</td>
<td>jsteinm</td>
<td>IGS</td>
</tr>
<tr>
<td>Research Affiliate</td>
<td>Carl Rexroad</td>
<td>5-7428</td>
<td>S319</td>
<td>crexroad</td>
<td>IGS</td>
</tr>
<tr>
<td>Research Scientist</td>
<td>Michael Prentice</td>
<td>6-3117</td>
<td>S318</td>
<td>mprenti</td>
<td>IGS</td>
</tr>
<tr>
<td>Research Scientist</td>
<td>Sally Letsinger</td>
<td>5-1356</td>
<td>S301D</td>
<td>sletsing</td>
<td>IGS</td>
</tr>
<tr>
<td>Assist. Professor</td>
<td>Adam Malteese</td>
<td>6-8059</td>
<td>Wright Ed Bldg 3054</td>
<td>amalteese</td>
<td>School of Education</td>
</tr>
<tr>
<td>Professor</td>
<td>Chris Craft</td>
<td>5-5971</td>
<td>SPEA 410J</td>
<td>ccraft</td>
<td>SPEA</td>
</tr>
</tbody>
</table>

1 Only the listed phone number is needed when calling on-campus; add 85 to the front to reach them from off-campus locations.
2 Add @indiana.edu to each of these emails to contact the person.

Please note that this list changes every year – please consult the updated directory information placed in student mailboxes each year.
APPENDIX 2

FORMS FOR THE MASTERS DEGREE
APPENDIX 2  FORMS FOR THE M.S. DEGREE

NAME:______________________________________________________________

ANNUAL REVIEW OF M.S. DEGREE PROGRESS

Students are required to organize a brief meeting with their Advisory Committee at least once a year (before April 15) to ensure that they share a common understanding of course selections, and research activities, plans and goals.

To assist in this process, students should provide copies of the form, duly completed, to all committee members at least 24 hours prior to this progress meeting. After the meeting, a copy of the completed and signed form should be submitted to the Graduate Secretary. Information on this form and in the summary statement of research progress will be used by the CGS to help rank students for academic awards and financial support.

COURSEWORK CHECKLIST

Graduate requirements:   Completed?  Comments

1.  ≥ 9 credit hours ≥ 500 level   ☐  ____________
2.  ≥ 20 credit hours graduate course credits in Geological Sciences   ☐  ____________
3.  ≤ 8 credit hours max graduate transfer credit   ☐  ____________
4.  ≥ 30 credit hours total graduate credit   ☐  ____________

Annual course load is 30 credit hours: 12 in Fall & Spring Semesters, 6 in Summer Session

RESEARCH PLANS

Program Options:

☐ M.S. students must complete:
   ☐ Either a thesis (strongly recommended),
   ☐ Or a research report plus the research skill  ☐ Or the foreign language requirement

Provisional Thesis (or Report) Title:

Brief Outline (max, 1 page) of Research Objective & Strategies:
   Aims, field work, sampling, analytical methods, etc.

Summary of Immediate (3-6 months) Research Plans:
   Future activities, especially during the summer months

PROPOSED LONG-TERM RESEARCH PLANS AND TIMETABLE:
   Anticipated phases of research activities and contingencies
APPENDIX 2 FORMS FOR THE M.S. DEGREE

Timetable and Dates:
1. Annual Review: Date, time, & venue

2. Thesis Completion: Target dates for draft and final version. Provisional date for thesis defense.

Summary of Financial Support:
Indicate sources of support, e.g. AI (provide course #), RA (note funding agency & PI), Fellowship (give source, self, other grants (e.g. GSA, Sigma XI, etc.))

<table>
<thead>
<tr>
<th></th>
<th>Semester I</th>
<th>Semester II</th>
<th>Summer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year 2</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

RESEARCH PROGRESS

Summary of Progress
A summary statement, preferably a one-page synopsis, which documents the following items, should be appended to this form. Several of these details would typically be compiled for inclusion in a full curriculum vitae, which may also be appended to this report.

1. **Research Activities**: Summarize achievement during the past year in field work, in laboratory analyses, in data collection, and written reports.

2. **Proposals & Contributions to Proposals**: Document grant applications submitted for research or fellowship support, including title, funding agency, date of submission, duration, purpose, and amount of funding sought/awarded, and the current status (whether pending, accepted, or declined). A copy of the proposal should be provided. Comparable information should also be given for grant applications submitted by others, for example an advisor or collaborator, to which you contributed. In such cases a copy of the proposal summary should be provided.

3. **Conferences & Short Courses**: Give details of meetings, short course or workshops attended, including their title(s), sponsoring organizations (e.g. GSA, AAPG), dates, location, and the source of any financial support enabling attendance.

4. **Presentations**: Provide a summary of any contributions to oral presentations or posters with information on the title, authorship, venue, date, and speaker (if applicable). Include a copy of the abstract, if available.

5. **Publications**: List all abstracts and papers, giving title, authorship, journal or book (e.g. conference proceedings or symposia), volume, pagination, and date of publication. Separately list comparable information for other manuscripts in preparation, submitted, under revision, accepted, or in press. Denote whether publications are peer-reviewed and provide copies of abstracts

6. **Other Academic or Career Activities**: Comment on any other relevant activities (e.g. internships) and on any awards received.
COMMITTEE REVIEW AND REMARKS

Coursework Status

Based on details documented in Coursework Summary.

1. Required Course. As determined by Advisory Committee:

2. General Requirements. Enter accumulated credit hours within each category.
   - General Geol. Sci. (≥ 9h) □
   - Total Geol Sci. (≥ 20 h) □
   - Transferred grad. Credit (≤ 8 h) □
   - Total graduate credit (≥ 30 h) □

3. Options. Specify credit hours accumulated within chosen option.
   - Option A: Research (≤ 8 h) □
   - Option B: Research (≥ 3 h) □
   - Option C: Research (≥ 3 h) □
   - plus Research skill (≥ 6 h) □
   - plus Foreign Language (≥ 6 h) □

COMMITTEE COMMENTS

1. Assessment of Degree Progress. Contents based on coursework & research activities:

2. Recommendations. Specific suggestions or requirements regarding degree progress.

Approval. Signatures designate agreement on course selection and research programs.

<table>
<thead>
<tr>
<th>Signature</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research Advisor</td>
<td></td>
</tr>
<tr>
<td>Advisory Committee member:</td>
<td></td>
</tr>
<tr>
<td>Advisory Committee member:</td>
<td></td>
</tr>
<tr>
<td>Student:</td>
<td></td>
</tr>
</tbody>
</table>

This form duly completed and signed must be returned to the Graduate Secretary by April 15 (May 1 for first-year students)
APPLICATION FOR ADVANCED DEGREE UNIVERSITY GRADUATE SCHOOL

Month in which you wish degree to be conferred

Please note that if this date changes you must notify the Recorder for your name to appear in the Commencement program (please initial here).

Diplomas are mailed by the Office of the Registrar approximately three months after the degree is conferred.

CAMPUS ID NUMBER: ______________________ DATE OF BIRTH: ______________________

NAME ____________________________

Current Address ____________________________ Permanent Address ____________________________

Street ____________________________ Street ____________________________

(City, State) __________________ (Zip) __________________ (City, State) __________________ (Zip) __________________

Local Telephone number (____)_____________ Email Address ____________________________

Did you ever attend a regional campus for graduate credit? Yes____ No____

If yes, where and when ____________________________

Will you be transferring credit from another institution for this degree? Yes____ No____

If yes, from where and how many credit hours ____________________________

Have you ever been a Continuing Non-degree Student? Yes____ No____

Will you be continuing work for the Ph.D. at IU? Yes____ No____

Check appropriate boxes

Master of Arts Department/Program ____________________________

Major____

( ) with thesis
( ) with research skill (specify courses) ____________________________
( ) with language (specify language and how fulfilled) ____________________________
( ) with essay, internship, or project
( ) with exam (date completed) ____________________________

Master of Science Department/Program ____________________________ Major________

( ) with thesis
( ) with research skill (specify courses) ____________________________
( ) with language (specify language and how fulfilled) ____________________________
( ) with essay, internship, or project
( ) with exam (date completed) ____________________________

Master of Fine Arts Department/Program ____________________________ Major________

( ) date of thesis show ____________________________
( ) with thesis

Master of Arts for Teachers* Department/Program ____________________________ Major________

* Copy of Public Instruction Teacher’s License must be subject to the Master’s Recorder, Kirkwood Hall 111

Diploma will be sent to address on official University records.

Please check your address at the Office of the Registrar, Franklin Hall 100.
APPENDIX 3

FORMS FOR THE PH.D DEGREE
ANNUAL REVIEW OF PH.D DEGREE PROGRESS

Students are required to organize a brief meeting with their Advisory Committee at least once a year (by April 15) to ensure that they share a common understanding of course selections, and research activities, plans, and goals.

To assist this process, students should provide copies of the form, duly completed, to all committee members at least 24 hours prior to this progress meeting. After the meeting, a copy of the completed and signed form should be submitted to the Graduate Secretary.

Information on this form and in the summary statement of research progress will be used by the CGS to help ranks students for academic awards and financial support.

COURSEWORK CHECKLIST

Graduate Requirements:  

1. ≥ 12 credit hours formal graduate credits in Geological Sciences
2. ≥35 credit hours total formal graduate coursework
3. ≤30 credits of transferred graduate credit
4. ≥90 credit hours total graduate credit
5. Specified credit hours in minor (determined by minor advisor)
6. ≥6 credit hours foreign language or research skill

Annual course load is 30 credit hours: 12 in Fall & Spring Semesters, 6 in Summer Session

RESEARCH PLANS

Provisional Thesis (or report) Title:

Brief Outline of Research Objectives & Strategies:  
Aims, field work, sampling, analytical methods, etc.

Summary of Immediate (3-6 months) Research Plans:  
Future activities, especially during the summer months

Proposed Long-term Research Plans and Timetable:  
Anticipated phases of research activities & contingencies
APPENDIX 3  FORMS FOR THE PH.D DEGREE

Timetable and Dates:
1. Annual Review: Date, time, and venue

2. Qualifying Examination. Proposed date and time


Summary of Financial Support:
Indicate sources of support, e.g. Al (provide course #), RA (note funding agency & PI), Fellowship (give source, self, other grants (e.g. GSA, Sigma XI, etc.)

<table>
<thead>
<tr>
<th></th>
<th>Semester I</th>
<th>Semester II</th>
<th>Summer</th>
</tr>
</thead>
<tbody>
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<td>Year 1</td>
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<td>Year 2</td>
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<td></td>
</tr>
<tr>
<td>Year 4</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

RESEARCH PROGRESS

Summary of Progress
A summary statement, preferably a one-page synopsis, which documents the following items, should be appended to this form. Several of these details would typically be compiled for inclusion in a full curriculum vitae.

1. **Research Activities:** Summarize achievement during the past year in field work, in laboratory analyses, in data collection, and written reports.

2. **Proposals & Contributions to Proposals:** Document grant applications submitted for research or fellowship support, including title, funding agency, date of submission, duration, purpose, and amount of funding sought/awarded, and the current status (whether pending, accepted, or declined). A copy of the proposal should be provided. Comparable information should also be given for grant applications submitted by others, for example an advisor or collaborator, to which you contributed. In such cases a copy of the proposal summary should be provided.

3. **Conferences & Short Courses:** Give details of meetings, short course or workshops attended, including their title(s), sponsoring organizations (e.g. GSA, AAPG), dates, location, and the source of any financial support enabling attendance.

4. **Presentations:** Provide a summary of any contributions to oral presentations or posters with information on the title, authorship, venue, date, and speaker (if applicable). Include a copy of the abstract, if available.

5. **Publications:** List all abstracts and papers, giving title, authorship, journal or book (e.g. conference proceedings or symposia), volume, pagination, and date of publication. Separately list comparable information for other manuscripts in preparation, submitted, under revision, accepted, or in press. Denote whether publications are peer-reviewed and provide copies of abstracts.

6. **Other Academic or Career Activities:** Comment on any other relevant activities (e.g. internships) and on any awards received.
APPENDIX 3 FORMS FOR THE PH.D DEGREE

COMMITTEE REVIEW AND REMARKS

Coursework Status
Based on details documented in Coursework Summary

1. Required Courses. As determined by Advisory Committee

2. General Requirements. Enter accumulated credit hours within each category.
   - Total Geol. Sci. (≥ 12 h)
   - Minor
   - Transferred Grad Credit (≤ 30 h)
   - Total Graduate Credit (≥ 90 h)
   - Language/Research Skill (≥ 6 h)
   - Graduate Course Credit (≥ 35 h)
   - Research

Committee Comments
1. Assessment of Degree Progress. Comments based on coursework & research activities.

2. Recommendations. Specific suggestions or requirements regarding degree program.

3. Approval. Signatures designate agreement on course selection and research progress.

<table>
<thead>
<tr>
<th>Signature</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research Advisor:</td>
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</tr>
<tr>
<td>Advisory Committee member:</td>
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<tr>
<td>Advisory Committee member:</td>
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<tr>
<td>Advisory Committee member:</td>
<td></td>
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<tr>
<td>Minor Advisor:</td>
<td></td>
</tr>
<tr>
<td>Student:</td>
<td></td>
</tr>
</tbody>
</table>

This form duly completed and signed must be returned to the Graduate Secretary by April 15 (May 1 for first-year students).
APPENDIX 3 FORMS FOR THE Ph.D DEGREE

RESEARCH AND THE UNIVERSITY’S GRADUATE SCHOOL

NOMINATION OF RESEARCH COMMITTEE FOR THE Ph.D

Name of Student_________________________________ Campus I.D

Department____________________________________ Birth Date________________________

Major________________________________________ Minor(s)________________________

Date of Qualifying Examination ________________________________

Date of Enrollment in University Graduate School ________________________________

Proposed Dissertation Title _________________________________________________

________________________________________________________________________

Dissertation Prospectus: Please attach a one-to-two page summary of the proposed research. If the research involves human subjects, animals, biohazards, biosafety, or radiation, please also attach an approval from the appropriate committee. Note: Your signature below indicates that you have read the attached prospectus and agree to serve, if appointed, on a committee to supervise this research.

NAME SIGNATURE DEPARTMENT (Please type) EMAIL

__________________________________________ (Co-Chair of Committee) __________________________________

__________________________________________ (Co-Chair of Committee) __________________________________

__________________________________________ __________________________________________________________

__________________________________________ __________________________________________________________

__________________________________________ (Minor representative) __________________________________

ALL COMMITTEE MEMBERS MUST BE MEMBERS OF THE UNIVERSITY GRADUATE SCHOOL FACULTY AND AT LEAST HALF MUST BE FULL MEMBERS.

I certify that I have examined the attached prospectus and that this committee is appropriate to supervise research in this area.

Signature/Department Chairperson________________________________ Date____________________

*To be used only by students who have passed the qualifying examinations and who have previously been admitted to candidacy.
Announcing the Final Examination of

For the
Degree of Doctor of Philosophy in Geological Sciences
Thursday, December 7th, 2000, 1pm
Room GY338, Geology Building

Dissertation: Open System Magmatism, and the emplacement of the Partridge River Intrusion, Duluth Complex, Minnesota.

The Partridge River Intrusion (PRI) is one of several large, tholeiitic bodies that occur along the Western portion of the Duluth Complex in northern Minnesota. Mafic magmatism developed in response to intercontinental rifting at approximately 1.1 Ga. The intrusion is host to several Cu-Ni sulfide deposits that are found near the basal contact with metapelitic footwall (the Proterozoic Virginia Formation). The upper portion of the PRI is characterized by thick, unlayered, monotonous sequences of troctolite and augite troctolite. Thin (usually less than 5 meters in thickness) layers of melatroctolite and picrite occur at irregular intervals. Cu-Ni mineralization, and iron-rich units of ferrogabbro occur near the base of intrusion. The ferrogabbro units are also enriched in incompatible elements (P, Y, Ti), and are intercalated with troctolite.

Previous researchers have suggested genetic mechanisms to explain the chemical variations in the PRI that range from differentiation of a single magmatic pulse, to multiple inputs of chemically distinct magma. This study was conducted to evaluate and model the magmatic process involved during the emplacement of the PRI. Samples were selected from a drillcore located to the northwest of the major Cu-Ni sulfide body at the Babbitt deposit. The site was chosen to avoid discontinuities caused by the presence of metapelitic xenoliths of the Virginia Formation, which are common in the vicinity of the mineralization.

The upper part of the intrusion contains differentiation cycles highlighted by variations in olivine composition, with a melatroctolite layer at the base of each cycle. These cycles were modeled utilizing MELTS (Ghiorso and Sack, 1995), and were found to be consistent with boundary layer, equilibrium crystallization at a high-Al tholeiite, with trapped liquid exchange between the boundary layer and the reservoir.

Ferrogabbro at the bottom of the intrusion was derived from an evolved melt of ferrodioritic composition, emplaced early in the history of the PRI. A later, more primitive troctolitic melt intruded the ferrogabbro. The main massive Cu-Ni mineralization is distinct, isotopically and compositionally, from the overlying disseminated mineralization, and was emplaced as a separate body, also early in the history of the PRI. Both the differentiated, ferrogabbroic melt and the sulfide melt which formed the massive mineralization evolved in one or more staging chambers in the shallow crust.

Outline of Studies
Major: Geology
Minor: Geochemistry

Educational Career
BS, Indiana University, 1983
MS, Indiana University, 1989

Committee in Charge
Professor Edward Ripley, Chair, Geological Sciences (855-1196)
Dr. Haydn Murray
Dr. David Towell
Dr. Robert Wiensch
Dr. James Brophy

Approved: ____________________________
Edward Ripley, Chair

(Any member of the Graduate Faculty may attend. As a courtesy, please notify the Committee Chair in advance).
APPENDIX 4

A GUIDE TO THE PREPARATION OF THESES AND DISSERTATIONS
Indiana University Office of the Vice President for Research
(http://www.indiana.edu/~grdschl/guide.html)

TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>3</td>
</tr>
<tr>
<td>Chronology</td>
<td>3</td>
</tr>
<tr>
<td>Format for Theses and Dissertations</td>
<td>4</td>
</tr>
<tr>
<td>Publication and Copyright</td>
<td>6</td>
</tr>
<tr>
<td>Sample Announcement Page (Separate page)</td>
<td>6</td>
</tr>
<tr>
<td>Master’s Sample Title Page (Separate page)</td>
<td>7</td>
</tr>
<tr>
<td>Doctoral Sample Title Page (Separate page)</td>
<td>8</td>
</tr>
<tr>
<td>Sample Acceptance Page (Separate page)</td>
<td>10</td>
</tr>
<tr>
<td>Sample Copyright Page (Separate page)</td>
<td>11</td>
</tr>
<tr>
<td>Sample Abstract (Separate page)</td>
<td>12</td>
</tr>
<tr>
<td>Absentee Arrangements</td>
<td>13</td>
</tr>
<tr>
<td>Master’s Degree Final Checklist</td>
<td>13</td>
</tr>
<tr>
<td>Ph.D. Degree Final Checklist</td>
<td>14</td>
</tr>
</tbody>
</table>
INTRODUCTION

Congratulations! By the time you read this manual, you will probably be almost finished with the writing of your master’s thesis or doctoral dissertation. The end is in sight, and this manual will help you get through the last steps with as few complications as possible. Actually, in terms of the requirements of the University Graduate School, the process is relatively straightforward and simple. Individual departments or committees, however, may have additional requirements to which you must conform. This manual is just a basic guide to the general standards of the University Graduate School; for additional information, please see also the relevant sections of the University Graduate School Bulletin. Be sure to check with both your department and your committee on any additional standards before you submit your final version. You will thus avoid confusion and frustration later.

This manual includes a discussion of the chronology in which the last few steps must proceed, as well as information about format and distribution regulations. It also contains several sample pages, some of which show how various standardized pages should look. In case of special problems not covered here, call the Recorder of the University Graduate School (812-855-1117-doctoral; 812-855-9345 masters) or check with your departmental secretary.

CHRONOLOGY

Master’s Thesis

A master’s thesis must be approved by at least three members of the faculty, usually the professors who have directed your research and writing. Once three professors have read your final draft and approved it, have them sign the acceptance page that appears right after the title page. After they have signed the acceptance page and your work is in final form, have at least two copies (both copies must be on 100 per-cent cotton rag bond paper) bound in a regular, sewn library binding. Direct the bindery to print the thesis title and your name on the front and spine of each copy. (One bound copy must include the original signed acceptable page; photocopies of the signed acceptance page may be used in additional bound volumes.) File two bound copies with the University Graduate School. These volumes are later placed in the University Library (see Masters Degree Final Checklist p.17) for specific format requirements. You must also file at least one additional copy with your major department. Be sure that the Registrar’s Office has your correct name and diploma-mailing address. The diploma, which certifies that you have completed the degree, should be issued within approximately three months of the submission of the bound copies to the University Graduate School. Usually your degree is dated the last day of the month following the month in which you submitted the bound copies.

Doctoral Dissertation

When your research committee has read a final draft of your dissertation and agreed that it is ready to be defended, provide each of the members of your committee with a full, unbound copy and arrange a mutually agreeable time and place for your defense. Make sure to allow at least four weeks before the defense so that they will have sufficient time to read and criticize your work; the four-week waiting period will also allow other faculty members who might be interested in your work to plan to attend your defense as well. Once the defense time and date are set, go to the Office of the University Graduate School in Kirkwood Hall and submit a one page dissertation defense announcement (see Sample Dissertation Announcement Page, p.18). The announcement must include the time and place of the defense, as well as your educational career data, (i.e., B.S., I.U., 1986, etc. – the major area is not needed). The chairperson of your research committee must approve and sign the announcement. The University Graduate School distributes the announcement throughout the University on its website so the announcement should be phrased in non-technical language. The announced time and place cannot be changed without the approval of the Dean of the University Graduate School. At the same time that you submit the announcement form, you should make sure to pick up information and forms for both microfilming and copyrighting.

At your oral examination, your full committee should be present to sign acceptance page (see Sample Acceptance Page, p.13) that confirms their approval and acceptance of your dissertation. If you know in advance that any member of your committee will be absent, you should, with the approval of the Dean, arrange to have another faculty member sit on the committee. Occasionally an absent committee member can participate by telephone. At this time, you should also make sure that all the committee members sign a copy of the abstract of your dissertation. You need one signed abstract and at least one unsigned abstract. The University Graduate School retains the signed copy and sends the unsigned copy to University
Microfilms International. If desired, you may also include another copy in your text. In case your committee should insist on extensive revisions before giving their full approval, your dissertation chairperson will probably retain the acceptance page until you fulfill the committee’s recommendations. You will probably not have to go through a second oral examination in any case. After your successful defense, you should bring several items to the University Graduate School. These include: the unbound dissertation, complete with any typewritten corrections, in a box preferably 9 inches by 11-1/2 inches in size; the Microfilm Contract (with an attached copy of the title page - see Doctoral Sample Title Page, p.12) and Survey Form with your signature; an acceptance page, signed by all members of your committee and placed immediately after the title page of the unbound dissertation. (The original signed acceptance page must be in the unbound volume; photocopies may be used in the bound volumes); two loose abstracts of the dissertation (see Sample Abstract, p.15), not to exceed 350 words in length (one unsigned and one signed by all members of your committee); a copyright page (see Sample Copyright Page, p.14) if you have decided to copyright your work should be inserted in the text; a fee receipt from the Bursar’s Office to prove that you have paid for microfilming, and if desired, for copyrighting your work; a vita page, placed at the end of each copy of the dissertation; and two bound copies of your dissertation. The University Graduate School must receive the bound copies before the degree can be certified or awarded.

Before you have the copies bound, check with your department about whether or not it prefers to bind the abstract with the rest of the text. The University Graduate School accepts only the library binding which uses the oversewn method. Velo binding available from some photocopying businesses is not acceptable. Ask the bindery to put the dissertation title and your full name on the front covers and the title and your last name on the spines of the bound copies. You may arrange for the bindery to send them directly to the University Graduate School. At this time, you should verify that the Office of the Registrar has on file the correct spelling of your name and the correct diploma-mailing address. Bear in mind, however, that the University Graduate School will recommend a candidate to the Board of Trustees for the degree only after the bound copies of the final approved version of the dissertation have been turned in. Ordinarily, you will receive the diploma for your degree within three months after you turn in the bound copies, although it may take a bit longer in the summer.

**FORMAT FOR THESSES AND DISSERTATIONS**

The University Graduate School has relatively few rules about the visual format of theses and dissertations. Both kinds of work must be typewritten or word-processed with a letter-quality printer. Generally laser and ink-jet printers produce such copy. Dot-matrix printers are not acceptable. We advise students to check with the University Graduate School to see that their print meets University Graduate School standards.

The material should be double-spaced, on watermarked, 100-percent cotton rag bond paper, 8-1/2 inches by 11 inches. The unbound version and at least one of the bound copies must be on paper of this quality. I.U. bond is not 100% cotton and not acceptable. The second bound copy of a Ph.D dissertation must meet departmental requirements. The University Graduate School does not accept script or italic fonts, although italics may be used to emphasize certain words. Be sure to correct errors on the typewriter or word-processor, not by hand. You may use either photocopying or the multilith process if the copies are of good quality. Mimeographed theses and dissertations are unacceptable. If photographs are part of the work, all copies must contain the best possible positive prints, not photocopies (though scanned color photocopies are acceptable). If you have any questions about the acceptability of your format, do consult the Recorder. A cautionary phone call could save you time and money.

Margins should be at least 1-1/2 inches on the left and 1 inch on the other three sides. Although this requirement may seem somewhat arbitrary, it is nonetheless necessary for successful binding and copying. Most copying processes tend to expand the material by two or three per cent, leaving less white space around the text. Binderies sew along the left-hand margin and then trim the other sides. Inadequate margins can result in part of your material being lost after the combination of copying and binding; even if all the material remains, insufficient margins can certainly affect the readability and the appearance of your work. Ordinarily, the text and any other materials will appear on the right-hand page only. If, however, you and your committee agree that it is absolutely necessary to include facing material on the left-hand page as well, be sure to leave 1-1/2 inches on the right-hand side of the facing page. These margin requirements apply to all materials included in the thesis or dissertation, including figures, tables, maps, plates, the abstract (if you decide to have it bound with the rest of your work), and any preliminary mate-
rial you choose to include. You must print page numbers on each page.

Most of the preliminary materials or front matter will depend on the nature of your thesis or dissertation and on your personal preference, but a few items are mandatory. The front matter must include the title page, the original signed acceptance page, and the copyright page (if you decide to copyright your work). Your department may also require that the abstract be bound with the dissertation. Normally a master’s thesis does not include an abstract. In addition, the University Graduate School strongly recommends that you provide a table of contents. Beyond that, other kinds of material are optional. Depending on the nature of your work, you may also wish to include lists of tables, figures, appendixes, or abbreviations (include page numbers on these). Depending on your personal inclination, you may wish to include a dedication, a preface, or a set of acknowledgments. The latter are designed to recognize people or agencies to whom you feel grateful for any academic, technical, financial, or personal aid in the preparation of your thesis or dissertation; as a matter of courtesy, you would ordinarily mention the members of your committee here, as well as institutions that provided funding, your typist, or anyone else who helped. With the exception of the title page, Roman numerals must be used for the front matter. The front matter should appear in the following order:

- Title page (mandatory)
- Acceptance page with original signatures (mandatory)
- Copyright page (mandatory if you choose to copyright)
- Dedication (optional)
- Acknowledgments (recommended)
- Preface (optional)
- Abstract (mandatory for Ph.D.; optional by department for Master’s Thesis)
- Table of Contents (strongly recommended)
- Lists of tables, figures, appendixes, or abbreviations (recommended if appropriate)

In addition to this front matter, you must also include a vita page at the end of the thesis or dissertation. You may write it in paragraph form, but the standard vita format is preferred. Page numbers must be clear and consecutive throughout and printed on every page, including appendixes, tables, figures, maps, charts, photographs, etc. The title page and vita page are the only exceptions to printed pagination.

Arabic numerals should be used in the body of the work, the bibliography, and any appendixes, while small Roman numerals are used for the front matter; the vita page at the end is not paginated. The title page counts as page i, but does not bear a number. Begin numbering with the acceptance page as page ii, and continue with small Roman numerals until the start of the actual text. That page, whether part of your full introduction or of your first chapter, will be numbered page 1 and every page will be numbered consecutively until you reach the vita page. Ordinarily, page numbers should be centered at the top or bottom of the page, entered midway between the edge of paper and the text to prevent their loss during the binding process, although some other method may be accepted if you clear it first with your committee and use that method consistently. Before you turn in your copies for binding, make sure that all of the pages are in correct numerical order and that they are right-side up.

Just as the format of the front matter may vary, so the format for your text and references will depend largely on your particular field or topic. In terms of the text, for example, most theses and dissertations should be written in English and should present your findings on original research. Other works, however, are more appropriately written in other languages or may present original works of art. Likewise, different disciplines have different methods and standards for citing reference materials. You must check with your department and your committee to determine which forms they prefer.

A few basic standards cut across departments, however. Although all texts should be either double-spaced or on occasion produced at space-and-a-half intervals, long quotations within the text should be typed single-spaced and with wider margins. Footnotes must appear either on the page where the annotation occurs or at the end of each chapter, or at the end of the dissertation. The University Graduate School imposes no single form for footnotes or bibliographic citations, but it does recommend one of several style manuals as a good starting point. These include: The Chicago Manual of Style; Kate L. Turabian, A Manual for Writers; the Modern Language Association (MLA) style sheet; and the American Psychological Association (APA) style sheet (especially for works in the social sciences). Similarly, the University Graduate School recommends either Webster’s Third International Dictionary or Webster’s Ninth New Collegiate Dictionary as authorities on
spelling and usage. Neither of these sets of recommendations is exhaustive. Your department may already have a style sheet of its own or another manual that it consistently recommends. Your safest strategy is to check with your department.

PUBLICATION AND COPYRIGHT

In terms of theses and dissertations, publication means making your work available to the broader scholarly community. Although both kinds of work represent original scholarly activity, the University Graduate School requires publication through the agency of University Microfilms International (a Division of Bell & Howell Information and Learning) only for dissertations. You may, of course, choose to publish your master’s thesis by this or other means, especially if your committee has recommended this course. If doing so, you would work directly with University Microfilms International. In addition, the University Graduate School encourages, but does not require, that you copyright the Ph.D dissertation in your own name; in that way, choices about the future use of your materials will be up to you. Copyrighting is most easily done through University Microfilms, since they take care of the necessary procedures. Still, the question of copyright is a complicated one and should be discussed with your committee. Whether or not you decide to copyright your Ph.D dissertation, the University Graduate School insists that, except under extraordinary circumstances, University Microfilms shall produce microfilm and photocopies of the work for sale by them. University Microfilms has put out a pamphlet explaining their methods, and it is very helpful. Copies are available at the University Graduate School office.

The process of publication is fairly simple. Obtain the microfilm and copyright contract and survey form from the University Graduate School office when you go there to turn in your Ph.D defense announcement. Pay the fees at the Bursar’s Office in Franklin Hall; the fees currently are $60.00 for microfilming (mandatory), and $45.00 for copyrighting (optional). Finally, bring the fee receipt, the signed microfilm contract and survey form, an extra title page, two loose abstracts, and the unbound dissertation (this may be a photocopy made on the 100% cotton paper) to the University Graduate School office after your defense. The University Graduate School and University Microfilms will handle the rest.

Before you reach that point, however, you should consider that the way most people will learn about your work is through Dissertation Abstracts Interna-
Announcing the Final Examination of
(Student’s Name)
for the Degree of Doctor of Philosophy in (department).
(Day, Date, Time)
(Room, Building)

Dissertation: (Title)
(The summary of the dissertation should be limited to one page and not more than 300 words. It should contain a statement of the problem, a description of the methods or procedures used, and a formulation of the results and conclusions. Unlike the abstract, which is for specialists in the field, an attempt should be made in the summary, whenever possible; to communicate the findings in a language and style that can be understood by the University community at large.)

Outline of Studies
Major: (Field)
Minor(s): (Field and Department)

Educational Career
(Degree, Institution, year graduated, major area not needed)

Committee in Charge
(Professorial Rank) (Name), Chair (Phone Number), (Department)
(Alphabetically list other committee members)

Approved: (Signature of Chair)

(Chairman’s Name)

Any member of the Graduate Faculty may attend.
As a courtesy, please notify the Committee Chairman in advance.
MASTER’S SAMPLE TITLE PAGE.

Create a separate page and center on page.

TITLE CENTERED, ALL IN CAPITAL LETTERS:
THE IMPORTANCE OF KEY WORDS IN THE SUCCESSFUL INDEX

Author’s Name

Submitted to the faculty of the University Graduate School
in partial fulfillment of the requirements
for the degree
Master of (Arts or Sciences)
in the Department (or School) of
Indiana University
Month, Year

Note: The date should reflect the actual date of the degree.
Create a separate page and center on page.

TITLE CENTERED, ALL IN CAPITAL LETTERS:
THE IMPORTANCE OF KEY WORDS IN THE SUCCESSFUL INDEX

Author’s Name

Submitted to the faculty of the University Graduate School
in partial fulfillment of the requirements
for the degree
Doctor of Philosophy
in the Department (or School) of
Indiana University
Month Year

Note: The date should reflect the actual date of the degree.
Create a separate page and center on page.

Accepted by the Graduate Faculty, Indiana University, in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

________________________________________________________________________
(Chairperson’s signature)

Chairperson’s name typed, Ph.D.

________________________________________________________________________
(Second reader’s signature)

Name typed

________________________________________________________________________
(Third reader’s signature)

Name typed

Doctoral Committee:

Date of Oral Examination:

________________________________________________________________________
(Fourth reader’s signature)

Name typed
Create a separate page and center on page.

© (enter correct year)
Student’s Name
ALL RIGHTS RESERVED
SAMPLE ABSTRACT

Create a separate page and center on page.

Student’s Name

Dissertation Title
(may be underlined or in caps)

The abstract is double-spaced and limited to 350 words as University Microfilms will not publish a longer abstract. The University Graduate School requires two abstracts—one unsigned and one signed by each member of the research committee. The University Graduate School forwards the unsigned version for publication in Dissertation Abstracts and retains the signed version in our records. (The student may wish to provide signature lines for the signed version to ensure neatness.) If the student wishes to include the abstract in the dissertation, he or she should do so using a third copy (unsigned and including proper pagination).
ABSENTEE ARRANGEMENTS

If you cannot be in residence at Indiana University during the final stages of your dissertation, you can still get through the process without too much trouble. Whether absent or not, you must be registered until the dissertation is complete. Indeed, you must register each semester after passing the qualifying examination until the degree is granted. Only those graduating during the summer must register for a summer session. For the rest, you need to do the same things that any other student has to do: arrange a mutually agreeable time with your committee, set up the oral exam at least thirty days prior to when you wish to defend (leave a little extra time to allow for problems with the mails), submit your defense announcement, come back and defend. Ordinarily, the defense is conducted here at Indiana University, but under extraordinary circumstances, other arrangements can sometimes be made; individuals have had their oral examinations at conventions, for example. Check with your committee or with the University Graduate School to see if this would work for you.

MASTER’S DEGREE FINAL CHECKLIST

1. Submit an Application for Advanced Degree form (available from your department or the University Graduate School) to the University Graduate School, at least sixty days prior to the desired degree date.

2. Verify that the Office of the Registrar has the correct spelling of your name and your correct diploma-mailing address. The Registrar mails the diploma to your permanent address. Also verify that your name does not appear on the University Checklist as the Registrar will not release your diploma or transcripts until all entries are cleared.

3. If you have prepared a thesis as one of your degree requirements, you should submit to the University Graduate School the following:
   a. Two bound copies. You may make arrangements for the bindery to send them; however, the University Graduate School must receive the bound copies before the degree can be certified and/or awarded. Direct the bindery to print the thesis title and your name on the front and spine of each. The University Graduate School accepts only regular library binding, which uses the oversewn method. Both copies must be on 20 or 24 pound, 100-percent cotton rag, watermarked bond paper which measures 8-1/2 inches by 11 inches. You must also submit at least one additional bound copy of the thesis to your department.
   b. A signed acceptance page with original signatures should be included in one of the bound copies after the title page. Photocopies of the signed acceptance may be used in additional bound volumes.
   c. The vita page placed at the end of the thesis.
1. Arrange a time for your defense with your committee.

2. Submit a (one page) defense announcement to the University Graduate School, at least thirty days before the defense. Make sure all members of your committee have copies of your work at that time.

3. Pass the dissertation defense!

4. Remind your major professor to remove all “R” grades recorded for dissertation credit. To do so, he/she must complete a Removal of “I” or “R” Grades form and forward it to the proper school for processing.

5. Bring the following to the University Graduate School after your successful defense:
   
a. The unbound dissertation (on twenty-pound, 100-percent cotton rag, watermarked bond paper) in a box 9 x 11-1/2 inches.

b. The signed acceptance page with original signatures should be included in the unbound dissertation after the title page. (Photocopies of the signed acceptance may be used in the bound volumes.)

c. Two abstracts, one unsigned copy and one copy signed by your full committee. These should be separate from the dissertation. The signed copy remains on file at the University Graduate School Office. The unsigned copy is published in Dissertation Abstracts. (See e. below)

d. Copyright page, if you are copyrighting (placed in dissertation).

e. Microfilm contract and survey form. You should sign both. Make sure to attach an extra title page and the unsigned abstract (see c. above) to the microfilm contract, include your chair’s name on this abstract.

f. Fee receipts from the Bursar’s Office for microfilming (required) and for copyrighting (optional).

g. The vita page (placed at the end of the dissertation).

h. Two bound copies. Copies may be submitted later than the items above, or may be sent by the bindery, by arrangement; however, the University Graduate School must receive the required bound copies before the degree can be certified and awarded. One of the copies must be on twenty pound, 100-percent cotton rag, watermarked bond, and the second must meet departmental requirements. The University Graduate School accepts only regular library binding, which uses the oversewn method.

NOTE: Two bound copies are required from all areas except the School of Business, School of Education, School of Journalism, and Department of Chemistry which require only one bound copy.

REMINDER: The title page and vita page are the only exceptions to printed pagination.

NOTE: You must enroll each semester after passing the qualifying examination, with the exception of summers; however, if you are graduating during the summer, you must enroll for at least one session during that summer.

Last Updated: 10-29-2003
Copyright 1999-2009
The Trustees of Indiana University
APPENDIX 5

EXAMPLE OF A MASTERS THESIS - PRINTING AND BINDING
APPENDIX 5 GUIDELINES FOR MS THESIS

Format:

- Typed, double-spaced.
- Ink-jet or laser printers only.
- No officially required font and size (check with Mary and your advisor for suggestions).
- 1-1/2” left margin and 1” right, top, and bottom margins for all text pages, figures, tables, plates, maps, appendices, etc.
- Required material in front of thesis (known as front matter in graduate handbook) includes, as follows:
  
  Title
  Acceptance and Signature page
  Acknowledgments
  Abstract
  Table of Contents
  Lists of tables, figures, and appendices
- There are no required sections for the body of the thesis (check with your advisor for suggestions).
- Each page must be numbered consecutively, except the title and vita pages. These pages do not have numbers. Use lower-case Roman numbers on the front matter (e.g., Acceptance - ii, Acknowledgments – iii). Use Arabic numbers on the body of the thesis, starting on the introduction page or first chapter and ending on the last page before the vita page. The last page could be the conclusions or appendix.
- Photographs
- Paper required for bound thesis is 20 or 24 lb. weight, watermarked, 100% cotton rag bond, and standard size (8-1/2” x 11”). IU bond cannot be used.
- Binding: Four bound copies are required (2 for the graduate school, 1 for the department, and 1 for your advisor).
- It is suggested to have your thesis bound at the following IU accepted bindery:
  
  The Smith Bookbindery
  112 West Tenth Street, Bloomington, IN 47404 (812) 332-2743
- Prices for binding a thesis (always verify prices by calling):
  
  Under 200 pages = $44.00 a copy
  Over 200 pages = $xx.00 a copy
  Title = $2.50 per line for titles over two lines
  Delivery to graduate school = $8.50
- Check with other committee members if other binding methods are acceptable for their copies, if you plan to give your thesis to all committee members. The other suggested binding method is Velo binding, not spiral. It is available at Kinko’s for $3.45 a copy.
- Other: CV needs to include birth date and birth place
- Printing, copying, etc.
APPENDIX 6

RESEARCH SKILL COURSES
### Appendix 6 Research Skill Subjects

Research Skill Subjects (updated 2008)

(Note: This is not an exhaustive list, other subjects may be taken with permission of the Graduate Committee)

<table>
<thead>
<tr>
<th>Mathematics</th>
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<tr>
<td>Applied Mathematics</td>
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<td>E538 Statistics for Environmental Science</td>
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## Appendix 6 Research Skill Subjects

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<th>Course Code</th>
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<tr>
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<tr>
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<td>A306</td>
<td>Object oriented programming in C++</td>
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<td>A346</td>
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<td>Analog Electronics and Semiconductor devices</td>
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<td>P432</td>
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<td>C315</td>
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<td>C318</td>
<td>Spectrochemistry and Separations</td>
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APPENDIX 7

WORK ALLOWANCES FOR
F-1 INTERNATIONAL STUDENTS
• During Fall and Spring Sessions, F-1 students cannot work more than 20 hours a week.

• During the Summer, Christmas, Thanksgiving and Spring Break periods on the University’s official calendar, you can work 40 hours on-campus only per week, without needing further authorization.

• To work full or part-time off-campus, you need to use Curricular Practical Training (CPT), which must be authorized by the International Office (Franklin Hall Rm 306). You must have been a full-time student on the campus for two semesters or nine months before you are eligible to apply for CPT. Any off-campus work you do must be related to your degree.

• To work more than 20 hours during Spring and Fall sessions, you must also get authorization for Curricular Practical Training.

• NOTE: All F visa international students have 12 months of Curricular Practical Training and 12 months of Optional Practical Training (which is used to allow you to work after having graduated while still on the F visa). You can sacrifice the 12 months of OPT and have 24 months maximum of CPT. Note also that if you accidentally do more than 12 months of CPT, you will automatically lose your 12 months of OPT, regardless of whether you use all 24 months of CPT or not.

• The International Office is obliged to monitor hours worked by International students and to report this information to the SEVIS system. If you have any questions about whether your work situation is within status, contact the International Office at 855-9086; intlserv@indiana.edu or visit their webpage: http://www.indiana.edu/~intlcent/
APPENDIX 8

400-LEVEL COURSES APPLIED TOWARD GRADUATE CREDIT
400 Level Courses that Count for Graduate Credit within Department of Geological Sciences

G-404, Geobiology
G-406, Introduction to Geochemistry
G-411, Invertebrate Paleontology
G-413, Introduction to Earth Physics
G-415, Geomorphology
G-416, Economic Geology
G-417, Optical Mineralogy
G-418, Igneous and Metamorphic Petrology
G-420, Regional Geology Field Trip
G-423, Methods in Applied Geophysics
G-427, Introduction to X-Ray Mineralogy
G-429, Field Geology in the Rocky Mountains
G-451, Hydrogeology