Department of Geosciences
Georgia State University

Self Study for Academic Program Review

Review Period: FY 2008 – FY 2010

Self-Study Committee
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Section A: Unit Assessment of Strengths and Weaknesses

Quality of the instruction, research, and service associated with the department

The Department of Geosciences at Georgia State University, which is a new and emerging unit, provides quality undergraduate and graduate programs with the faculty conducting significant research and being responsive to the needs demanded for service to the University and outreach to the community and our profession. The faculty members are active in various capacities ranging from offering successful and relevant instruction to conducting meaningful research that has led to publication and external funding. Our students distinguish themselves by attaining either desired employment or enrollment into graduate school that is based on the skills acquired in their Geosciences studies. As indicated in the student and alumni surveys, the Bachelor’s degree programs are perceived by students as both challenging and providing a strong education in the Geosciences. As is shown in Section F, the faculty members have high standards for scholarship. Faculty research activities appear to be stronger in terms of publications compared to those of peer geosciences departments (i.e. Florida Atlantic University, University of Arkansas, and University of Missouri – Kansas City) (Table F2). The department has averaged approximately 14 tenure-track faculty members over the past three years, and, over that time period, the faculty has published 37 peer-reviewed research articles and one book, has been investigators on 17 grants, and has given 55 conference presentations. In addition, the department contains excellent equipment/instrumentation for pedagogical purposes (see Section G). As illustrated in Section F, the faculty has excelled in service and outreach over the past three years by, for example, serving as editors-in-chief of two journals (Cartographica and Earth Science Informatics), reviewing approximately 60 manuscripts submitted for publication in journals, serving as chairs, vice-chairs, and board members of divisions and specialty groups of national geographical and geological organizations, and being involved actively with the Science Olympiad.

This self study has revealed several weaknesses in the area of instruction and one large weakness in the area of research. For the Bachelor’s and Master’s programs, there is a high level of student dissatisfaction with the perceived infrequency of course offerings primarily at the upper division undergraduate and graduate levels. Probably as a result of a small number of graduate-only courses, graduate students, especially Geography M.A. students, do not feel that the program is challenging enough (see Section D). While the department has made strides to minimize the number of part-time instructors and has made one excellent recent lecturer hire, there is still an over-reliance on part-time instructors to teach Geography 1101 (Introduction to Human Geography) (see Section B). Finally, there is a need to increase the amount of external funding to support the department’s mission (see section F).

Centrality of the department to the university

The Department of Geosciences is critical to the central focus of Georgia State University and its mission. Firstly, because of the department’s inclusion of the subdisciplines contained in both geography, a discipline that often bridges both physical and social science, and geology, it is the only department with strong research and instructional foci in a combination of global physical and social elements as well as geospatial technologies and analysis, human-environment interaction, social theory and construction in regional space, and world regional study and analysis. Research and instructional foci include biogeography, clay mineralogy, climatology, critical cartography, environmental geology, fluvial geomorphology and hydrology,
geochemistry, geographic information systems (GIS), geoinformatics, hydrogeology, paleoecology, remote sensing, sedimentology, urban geography, and world regional geography. These areas of inquiry address several of the most pressing issues facing 21st century global society including climate change, human-environment interactions, urban processes and spatial disparities, the geopolitics of the Middle East, and the social construction of China among others.

Secondly, over 11,000 credit hours are generated in the department’s introductory courses that satisfy the university’s Area D (Science, Mathematics, and Technology) requirements. Approximately 2,800 students (including multiple enrollments), are enrolled in those courses annually. Those students receive high-quality instruction from dedicated faculty: approximately 70% of the students are taught by either tenure-track faculty or permanent, full-time lecturers. Thirdly, faculty in the department teach and co-teach both ISCI and NSCI courses, which provide enhanced science education to current and future K-12 teachers. Thirdly, activities by faculty and students are noted frequently on the university’s home page and GSU Magazine (e.g., Jordan Clayton’s and Hassan Babaie’s summer field courses, Daniel Deocampo’s NSF grant addressing the Deepwater Horizon oil spill, etc.). These activities underscore the importance and the kinds of work done in the Department of Geosciences, and in specific cases, these reviews note the importance of the department’s work to society.

Despite the centrality of the Department of Geosciences, it is just coming into its own in terms of general recognition within the broader University. The department was created in 2006 from the merger of the Geography program, which was formerly in the Department of Anthropology and Geography, and the Geology program, which was a stand-alone department. Therefore, the department is only in its fifth year of existence and there has not been sufficient time for it to be known as such. Other reasons for why the department is not a “key” player at the university level is the lack of collaboration with other departments on large, externally funded research projects where some opportunities certainly exist and where Geosciences is able to provide expertise (e.g. analytical geochemistry and GIS). Finally, the department has not capitalized significantly on the urban-environment aspect of the department. As will be discussed in Section H of the report, the department can rectify the above weaknesses with the proper goals and objectives in place in upcoming years.

Viability of the department

The Department of Geosciences has proven to be an extremely viable department. The department has grown with respect to number of faculty members, credit-hours generated, and undergraduate majors over the past three years (Table A1). As noted earlier, the department generates a lot of credit hours relative to its size, and the number of total credit hours increased by 17% from FY 2008 to FY 2010. The increase has occurred at the following levels: undergraduate core, undergraduate upper-division, and graduate. The number of undergraduate majors increased 61% from FY 2008 to FY 2010, with the number of majors in Fall 2010 exceeding 120. Results from the Office of Institutional Research surveys indicate that the department serves its undergraduate majors very well (see Appendix D5). A healthy percentage (i.e. 75%) of graduates secures a job aligned strongly with their Geosciences education or entered Master’s or Ph.D. programs (see Section E). Finally, the department enjoys a considerable comparative advantage over other departments in other colleges and universities in the Atlanta metropolitan area when considering Bachelor’s or Master’s degree studies in the Geosciences (i.e. Geography and Geology).
Table A1. Number of faculty, credit-hours generated, majors, and degrees conferred for the Department of Geosciences, FY 2008 – FY 2010

<table>
<thead>
<tr>
<th>FY</th>
<th>Permanent, Full-time Faculty</th>
<th>Credit Hours (Total)</th>
<th>Credit Hours (UG Core)</th>
<th>Credit Hours (UG Upper)</th>
<th>Credit Hours (Graduate)</th>
<th>B.A. &amp; B.S. (Majors)</th>
<th>M.A. &amp; M.S. (Majors)</th>
<th>B.A. &amp; B.S. (Degrees)</th>
<th>M.A. &amp; M.S. (Degrees)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>13</td>
<td>15,286</td>
<td>12,663</td>
<td>1,233</td>
<td>1,278</td>
<td>74</td>
<td>44</td>
<td>16</td>
<td>8</td>
</tr>
<tr>
<td>2009</td>
<td>17</td>
<td>16,535</td>
<td>13,866</td>
<td>1,206</td>
<td>1,335</td>
<td>97</td>
<td>42</td>
<td>20</td>
<td>8</td>
</tr>
<tr>
<td>2010</td>
<td>17</td>
<td>17,872</td>
<td>14,508</td>
<td>1,499</td>
<td>1,459</td>
<td>119</td>
<td>46</td>
<td>11</td>
<td>15</td>
</tr>
<tr>
<td>Increase 2008-2010</td>
<td>31%</td>
<td>17%</td>
<td>15%</td>
<td>22%</td>
<td>14%</td>
<td>61%</td>
<td>5%</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

The department has some areas that reduce its viability substantially. The department may be one of the few at the university that does not have any non-administrative faculty members at the rank of Professor (see Section B); Risa Palm, the Senior Vice President for Academic Affairs and Provost, is a member of the Geosciences faculty. In addition, the department does not have a Ph.D. program. The student/tenure-track faculty ratios are not as high as the department would like, even though those ratios are in line with the peer departments (see Section B). The level of recruitment of future majors from the introductory courses, especially the Geography courses, is miniscule. For example, at least 2,600 students were exposed to either Geography 1112 or Geography 1113 from FY 2008 – FY 2010, but the department added only 12 Geography majors during that time span (Tables B4 and B9). There have been relatively low numbers of degrees conferred at both the undergraduate and graduate levels compared to numbers at peer departments (Table B6). Graduate-assistantship stipends are not nationally competitive: graduate teaching assistants receive only $3,000 per semester. As a result, graduate students typically must hold outside part-time employment for their living expenses. Also concerning graduate students is the low frequency and small variety of course offerings (see Section D) mentioned earlier. The two Geography-based graduate programs (i.e. Geography M.A. and GIS certificate) are below university averages with respect to enrolling accepted students (see Section E), and contributing factors may be poor “selling” of those programs by the department along with the aforementioned low stipends. Finally, the department’s ability to field graduate seminars and graduate-only courses is inhibited by (1) the minimum enrollment of 12 students for graduate seminars; (2) the increase in the minimum enrollment to 15 students in 4000/6000 level classes; and (3) large contributions of courses in Area D (Science, Mathematics, and Technology) and courses supporting teacher education programs in the College of Education (i.e. ISCI). In other words, the Department of Geosciences does not have enough full-time faculty members to teach the increased numbers in lower division courses while filling instructional gaps at the upper-division and graduate levels.

The department is in need of additional resources in order to increase its viability. There are not enough full-time faculty members to meet the current credit-hour demand, and there are strategic research and instructional gaps that need to be filled. The department’s most pressing faculty needs, in no particular order, are in the areas of Geoscience education, environmental mineralogy, urban/GIS, and petrology. The amount and quality of space the department occupies is inadequate for research, instruction, and technical support. Rather than relying on student workers in the front office, an additional staff member could be used for administrative and technical support. Larger stipends are needed for graduate student in order for high-quality students to be recruited into the Master’s programs. Finally, without an increase in salaries, the
department runs a high risk of losing its most productive faculty members. Nine-month salaries for the physical-science faculty, other than those who have been at the associate-professor level for many years, are too low to continue to compete with the majority of universities with other physical geography/geology programs of a similar level.

Strategic focus

The focus of the Department of Geosciences has been on maintaining the quality of its undergraduate and graduate programs and to meet the high demand for its introductory courses. The department offers a B.A degree in Geography, a B.S. degree in Geology, an M.A. degree in Geography, and M.S. degree in Geology, a graduate certificate in GIS, and a graduate certificate in Hydrogeology. It is the only department in metropolitan Atlanta where a Master’s degree in Geography or Geology can be obtained along with a graduate certificate in GIS. It also is the only department in metropolitan Atlanta to produce degrees in Geology, a field that is critical to the environmental, water resources, minerals, and energy industries in the state. All programs, except the Hydrogeology certificate, are viable programs with typical enrollments and graduate rates based on comparisons with peer departments (Table B5). The department has two exemplary field courses: a summer geology field course in Montana and an Atlanta-based Maymester physical-geography field course. There is an incredibly high student demand for the department’s two introductory courses in physical geography (i.e. Geography 1112 and 1113). Based on how quickly those classes fill, it is safe to assume that Geography 1112 and 1113 are the two most popular courses within the College of Arts and Sciences students take to fulfill their Area D requirements. The department is committed to increasing further the quality of these courses; for example, NASA funding has been obtained to revise the Geography 1112 labs in order to focus on environmental applications, and to take advantage of new technologies as well as hands-on, inquiry-based pedagogical approaches.

The Department of Geosciences currently lacks a strategic plan; this is a deficiency that will hamper decision making in the near term. Completion of a Departmental Strategic Plan should be accomplished quickly to ensure the department’s alignment with the objectives of the University Strategic Plan currently in preparation. Current strengths of the department that can aid in establishing a strategic vision for the department are as follows: (1) excellent faculty and staff; (2) the centrality of department’s research activities to preliminary objectives defined in the University Strategic Plan; (2) a growing enrollment of undergraduate majors; (3) an effective number of graduate students; (4) good analytical facilities and equipment, some of which can contribute to many research areas campus-wide; and (5) excellent computing facilities, GIS labs, and effective computer support. The department is focusing on merging Geography and Geology into a cohesive Geosciences unit with new curricula and degree programs. A major component of the new structure will be the development of concentrations at the undergraduate level in Environmental Geosciences and Urban Studies, which should increase the number of undergraduate students and thus the overall exposure of the department.

Financial resource analysis

The Department of Geosciences is very efficient financially and acquires the necessary funds to cover some important needs. The department’s credit-hour generation is high which puts our revenue/cost ratio at about 3.8, which is in the top quartile at the university. The department has developed some efficiency in course instruction so that large numbers of students can be accommodated in the introductory courses. The field courses in Geography and Geology are
self-funded by enrollment and fees (i.e. agency funds are sufficient). The supplies line of $81,000 is adequate. Lab-fees funds are used effectively to provide for the instructional needs and supplies for our introductory classes. The department has been successful in obtaining technology-fee support to replace computers in the introductory labs and in the GIS labs as well as to obtain specific instructional tools (e.g., portable X-ray fluorescence spectrometer). Some research efforts attract federal extramural support (i.e. DOE, NASA, and NSF) and then are able to attract good graduate students and enhance research programs.

The department is not as strong as it should be in the area of self-generated funding; hence, low amounts of indirect costs are received and few graduate students receive adequate stipends. The department’s sales/services accounts generate only modest support (i.e. < $3,000 per year). Most analytical equipment is not supported by technicians or service contracts; they are instead maintained directly by faculty who spend significant amounts of time maintaining and repairing equipment.

Section B: Historical and Current Contexts

Historical and contextual explanation of the unit and its programs

The Department of Geosciences was formed in January 2006 from the Department of Geology and the Geography program within the former Department of Anthropology and Geography. Immediately prior to the merger, the Geography faculty lost a full professor to retirement, and both a full professor and associate professor to acceptance of positions in the Department of Geography at the University of North Carolina – Greensboro. Immediately after the merger, the department lost an associate professor to directorship of the Middle East Institute. Therefore, the Department of Geosciences essentially began with six tenure-track geologists and just two tenure-track geographers. By the end of FY 2008, the department had added five more tenure-track geographers. At the present time, there are 12 tenure-track faculty members, with approximately equal numbers of geographers and geologists, and three full-time, permanent lecturers, two visiting lecturers, and one visiting instructor. For detailed information on the faculty distribution during the past three fiscal years, refer to Appendix B6. The department has Bachelor’s programs in Geography and Geology, Master’s programs in Geography and Geology, graduate-level certificates in Geographic Information Systems (GIS) and Hydrogeology, and a Ph.D. degree offered through the Department of Chemistry. The former Department of Geology offered a B.S. degree in Geology, an M.S. degree in Geology, a certificate in Hydrogeology, and the aforementioned Ph.D. degree. The Department of Geosciences is now very similar to geosciences departments at the following universities: Florida Atlantic University, University of Arkansas, and University of Missouri – Kansas City (Table B1). These are the peer departments of the Department of Geosciences, and the criteria used to select them are presented in Appendix B1. Data obtained for the peer departments for FY 2008 – FY 2010 provide an excellent means to assess the strengths and weaknesses of the Department of Geosciences at Georgia State University.
Table B1. Characteristics of faculty and programs of the Department of Geosciences and peer Geosciences departments as of August 2010

<table>
<thead>
<tr>
<th>Institution</th>
<th>TT faculty</th>
<th>TT faculty (Geography)</th>
<th>TT faculty (Geology)</th>
<th>TT faculty (Other)</th>
<th>Bachelor's programs</th>
<th>Master's programs</th>
<th>Ph.D. program</th>
</tr>
</thead>
<tbody>
<tr>
<td>Florida Atlantic University</td>
<td>13</td>
<td>6</td>
<td>6</td>
<td>1</td>
<td>Geography, Geology</td>
<td>Geography, Geology</td>
<td>Geosciences</td>
</tr>
<tr>
<td>Georgia State University</td>
<td>12</td>
<td>7</td>
<td>5</td>
<td>0</td>
<td>Geography, Geology</td>
<td>Geography, Geology</td>
<td>Chemistry with Geology specialization</td>
</tr>
<tr>
<td>University of Arkansas</td>
<td>17</td>
<td>6</td>
<td>9</td>
<td>2</td>
<td>Geography, Geology, Earth Science</td>
<td>Geography, Geology</td>
<td></td>
</tr>
<tr>
<td>University of Missouri – Kansas City</td>
<td>11</td>
<td>6</td>
<td>5</td>
<td>0</td>
<td>Geography, Geology, Environmental Studies</td>
<td>Environmental and Urban Geosciences</td>
<td>Interdisc.</td>
</tr>
</tbody>
</table>

**Characteristics of full-time faculty**

As of August 2010, there were 16 full-time faculty members in the department. Detailed information on the characteristics of all Geosciences faculty over the past three years is in Appendix B6. The breakdown of the full-time faculty is as follows: five tenured faculty, seven non-tenured tenure-track faculty, three permanent lecturers, two visiting lecturers, and one visiting instructor. In addition, the department has only full professor, Risa Palm, who is the Senior Vice President for Academic Affairs and Provost. Since there are more non-tenured faculty members than tenured faculty members, the department could be classified as “bottom heavy.” Nevertheless, a major shift should occur within the next four years with the promotion of junior faculty members.

**Faculty research productivity**

Faculty publication productivity in the Department of Geosciences was reasonably strong over the past three fiscal years (Tables B2 and B3). The department produced 55 publications, and this number included 37 refereed research articles, one book, and 16 other scholarly works (i.e. chapters, reviews, interviews, and editorials). Thus, nearly 70% of faculty publications were refereed research articles. Faculty members also gave 55 presentations at conferences, and many of those presentations had published abstracts, which have not been counted in the publications totals. More detailed information on faculty publications is presented in Section F (Faculty Quality).
Table B2. Faculty publication productivity for the Department of Geosciences, FY 2008 – FY 2010

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>FY 2008</th>
<th>FY 2009</th>
<th>FY 2010</th>
<th>Per TT Faculty FY 2008</th>
<th>Per TT Faculty FY 2009</th>
<th>Per TT Faculty FY 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refereed Research Articles</td>
<td>37</td>
<td>11</td>
<td>11</td>
<td>15</td>
<td>0.9</td>
<td>0.8</td>
<td>1.0</td>
</tr>
<tr>
<td>Books</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Other Scholarly Works</td>
<td>17</td>
<td>6</td>
<td>3</td>
<td>8</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Conference Presentations</td>
<td>55</td>
<td>13</td>
<td>21</td>
<td>21</td>
<td>1.1</td>
<td>1.5</td>
<td>1.4</td>
</tr>
</tbody>
</table>

Faculty members also were active in securing internal and external funding for their research activities (Table B3). The department received 10 internal grants over the past three years. There were three external grants involving Geosciences faculty from which the university received indirect costs, and those were a sub-award ($171,230 over two years) from the National Science Foundation, a grant ($149,617 over two years) from the U.S. Department of Energy, and a contract ($499,945 over three years) from the National Aeronautical and Space Administration (NASA). Two of those awards (NSF and DOE) were housed in the department, while the other award (NASA) was housed in the Department of Physics and Astronomy. During FY 2011, faculty members will be principal investigators on grants from the American Chemical Society ($65,000), the Georgia Department of Transportation ($74,982), the National Science Foundation ($61,537), and the U.S. Geological Survey ($50,000). In addition, a faculty member will be a co-investigator on a grant from the National Institute of Health ($366,000). More detailed information on internal and external funding is in Table F3.

Table B3. Department of Geosciences funding, FY 2008 – FY 2010

<table>
<thead>
<tr>
<th>Internal Grants</th>
<th>External Grants</th>
<th>Internal Funding</th>
<th>External Funding (All)</th>
<th>Direct Costs (All)</th>
<th>Indirect Costs (All)</th>
<th>External Funding (Geos.)</th>
<th>Direct Costs (Geos.)</th>
<th>Indirect Costs (Geos.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>3</td>
<td>$102,920</td>
<td>$412,687</td>
<td>$207,617</td>
<td>$88,383</td>
<td>$246,039</td>
<td>$88,008</td>
<td>$41,344</td>
</tr>
</tbody>
</table>

Student enrollment and graduation

The number of majors in the department increased markedly over the past three years (Table B4). Detailed information is in Appendix B7. The department currently has approximately 120 undergraduate majors and 46 graduate students, and most of the growth over the past three years has occurred in the undergraduate programs, especially the B.S. in Geology where the number of majors nearly doubled over a three-year period. The number of undergraduate majors increased by 61% from FY 2008 to FY 2010, and this was due mostly to an increase in geology majors. Despite a total enrollment in introductory Geography courses (1101, 1112, and 1113) exceeding 2,300 annually (Table B9), There was increase of only 12 Geography B.A. students over the three-year period. The number of graduate majors remained essentially unchanged over the past three years. The certificate in hydrogeology is being terminated due to a lack of interest among students. Student enrollment in the department is similar to that at the peer departments, and the
student to tenure-track ratios for GSU Geosciences is in line with ratios for the peer departments (Table B5).

Table B4. Enrollment in the Department of Geosciences per fiscal year and the annual mean, FY 2008 – FY 2010

<table>
<thead>
<tr>
<th>FY</th>
<th>B.A. Geography</th>
<th>B.S. Geology</th>
<th>M.A. Geography</th>
<th>M.S. Geology</th>
<th>Certificate GIS</th>
<th>Certificate Hydrology</th>
<th>Total B.A. &amp; B.S.</th>
<th>Total M.A. &amp; M.S.</th>
<th>Total Certificate</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>32</td>
<td>42</td>
<td>24</td>
<td>20</td>
<td>6</td>
<td>1</td>
<td>74</td>
<td>44</td>
<td>7</td>
</tr>
<tr>
<td>2009</td>
<td>38</td>
<td>59</td>
<td>24</td>
<td>18</td>
<td>8</td>
<td>0</td>
<td>97</td>
<td>42</td>
<td>8</td>
</tr>
<tr>
<td>2010</td>
<td>44</td>
<td>75</td>
<td>23</td>
<td>23</td>
<td>6</td>
<td>1</td>
<td>119</td>
<td>46</td>
<td>7</td>
</tr>
<tr>
<td>Annual Mean</td>
<td>38</td>
<td>59</td>
<td>24</td>
<td>20</td>
<td>7</td>
<td>1</td>
<td>97</td>
<td>44</td>
<td>7</td>
</tr>
</tbody>
</table>

Table B5. Student enrollment and degrees conferred for the Department of Geosciences and peer departments at other universities, FY 2008 – FY 2010

<table>
<thead>
<tr>
<th>Institution</th>
<th>Undergraduate enrollment</th>
<th>Graduate enrollment</th>
<th>UG/TT ratio</th>
<th>G/TT ratio</th>
<th>Undergraduate degrees (per year)</th>
<th>Graduate degrees (per year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Florida Atlantic University</td>
<td>91</td>
<td>33</td>
<td>7.8</td>
<td>2.8</td>
<td>19</td>
<td>9</td>
</tr>
<tr>
<td>Georgia State University</td>
<td>97</td>
<td>44</td>
<td>7.0</td>
<td>3.2</td>
<td>16</td>
<td>10</td>
</tr>
<tr>
<td>University of Arkansas</td>
<td>115</td>
<td>57</td>
<td>6.7</td>
<td>3.3</td>
<td>20</td>
<td>15</td>
</tr>
<tr>
<td>University of Missouri – Kansas City</td>
<td>121</td>
<td>21</td>
<td>12.1</td>
<td>2.1</td>
<td>23</td>
<td>0</td>
</tr>
</tbody>
</table>

The department graduates a small number of students annually (Table B6). Detailed information is in Appendix B7. Approximately 16 Bachelor’s and 10 Master’s degrees are conferred annually. The numbers are divided evenly between Geography and Geology. Although the gradation numbers appear small, they are, however, similar to the graduation numbers at all three peer departments (Table B5). Nevertheless, GSU Geosciences graduates fewer undergraduates than do all three peer departments; consequently, the number of Bachelor’s degrees conferred must increase.

Table B6. Degrees conferred per fiscal year and the annual mean, FY 2008 – FY 2010

<table>
<thead>
<tr>
<th>FY</th>
<th>B.A. Geography</th>
<th>B.S. Geology</th>
<th>M.A. Geography</th>
<th>M.S. Geology</th>
<th>Certificate GIS</th>
<th>Certificate Hydrology</th>
<th>Total B.A. &amp; B.S.</th>
<th>Total M.A. &amp; M.S.</th>
<th>Total Certificate</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>9</td>
<td>7</td>
<td>1</td>
<td>7</td>
<td>4</td>
<td>0</td>
<td>16</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>2009</td>
<td>8</td>
<td>12</td>
<td>5</td>
<td>3</td>
<td>1</td>
<td>0</td>
<td>20</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>2010</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>4</td>
<td>0</td>
<td>11</td>
<td>15</td>
<td>4</td>
</tr>
<tr>
<td>Annual Mean</td>
<td>7</td>
<td>8</td>
<td>4</td>
<td>6</td>
<td>3</td>
<td>0</td>
<td>16</td>
<td>10</td>
<td>3</td>
</tr>
</tbody>
</table>
The department has had high graduation rates recently (Appendix B8). The combined Geography and Geology junior cohorts from 2003 to 2009 had three-year graduation rates either larger than or equivalent to that of the mean of all university programs. The three-year graduation rate for Fall 2006 cohorts of juniors and Master’s students was 75%. Only five of the 16 juniors and two of the eight Master’s students did not graduate within three years. A noticeable blemish on the department’s graduation record is the graduation of only one M.A. student from the Fall 2004 cohort of seven students; however, this anomaly is linked directly to the departure of half the tenure-track geographers in 2005 immediately prior to the merger of the Geography and Geology programs. Those students were in the second year of the M.A. program when three tenure-track Geography faculty members left the program. In fact, the college did not allow any Master’s students to enter the program in 2005. The Geography M.A. program has rebounded extremely well over the past five years. Since the department has average to above-average graduation rates and the number of majors, especially B.A. and B.S. students, increases each year, the number of graduates in upcoming years should be larger than during the past three years.

Credit-hour generation

The Department of Geosciences generates a relatively large number of credit hours (Table B7). The department generates more credit hours at both the undergraduate and graduate levels than does its peer departments. The department generated ~25% more credit hours than did UA Geosciences, which had the second largest number of credit hours. There was a steady growth in credit-hour generation from FY 2008 through FY 2010 (Table B8). Detailed information is in Appendix B9 and B10. In FY 2008, more credit hours were generated by lecturers and other faculty than by tenure-track faculty; however, in FY 2010, tenure-track faculty generated nearly 50% of the credit hours. Increases in tenure-track contribution to credit hours occurred for the core, upper-division course, and graduate course. The core courses (Geography 1101, Geography 1112, Geography 1113, Geology 1121K, Geology 1122K, and Geology 2001) in the department had a cumulative enrollment for FY 2010 of 3,864 students (Table B9). Tenure-track faculty and full-time lecturers taught the majority of students in all but one core course, Geography 1101, where 64% of students were taught by part-time faculty. Geography 1101 has approximately half the enrollment of both Geography 1112 and Geography 1113, yet a much lower percentage of students in the latter two courses are taught by part-time instructors. More full-time faculty should be teaching Geography 1101 to make it comparable to the other core courses in the department. Finally, Geography 2206, which is the only 2000-level geography course, has had an average enrollment of only 15 students per offering over the past three years (see Appendix D4). The department should either devise strategies for increasing enrollment in Geography 2206 or replace it with a course (e.g., Urban Environments) with a larger enrollment potential.
Table B7. Annual credit hours generated by the Department of Geosciences and peer departments at other universities, FY 2008 – FY 2010

<table>
<thead>
<tr>
<th>Institution</th>
<th>Total credit hours</th>
<th>Undergraduate credit hours</th>
<th>Graduate credit hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Florida Atlantic University</td>
<td>11,685</td>
<td>11,102</td>
<td>583</td>
</tr>
<tr>
<td>Georgia State University</td>
<td>16,564</td>
<td>15,207</td>
<td>1,357</td>
</tr>
<tr>
<td>University of Arkansas</td>
<td>13,408</td>
<td>12,392</td>
<td>1,016</td>
</tr>
<tr>
<td>University of Missouri – Kansas City</td>
<td>2,779</td>
<td>2,579</td>
<td>200</td>
</tr>
</tbody>
</table>

Table B8. Total credit hours and percentage of credit hours from tenure-track faculty generated by the Department of Geosciences at the undergraduate (UG) level for core, lower division, and upper division courses as well as credit hours generated at the graduate levels, FY 2008 – FY 2010

<table>
<thead>
<tr>
<th>FY</th>
<th>Total UG Core</th>
<th>UG Lower</th>
<th>UG Upper</th>
<th>Graduate</th>
<th>Total (TT)</th>
<th>UG Core (TT)</th>
<th>UG Lower (TT)</th>
<th>UG Upper (TT)</th>
<th>Graduate (TT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>15,286</td>
<td>12,663</td>
<td>112</td>
<td>1,233</td>
<td>1,278</td>
<td>37%</td>
<td>30%</td>
<td>100%</td>
<td>63%</td>
</tr>
<tr>
<td>2009</td>
<td>16,535</td>
<td>13,866</td>
<td>128</td>
<td>1,206</td>
<td>1,335</td>
<td>40%</td>
<td>33%</td>
<td>100%</td>
<td>74%</td>
</tr>
<tr>
<td>2010</td>
<td>17,872</td>
<td>14,508</td>
<td>406</td>
<td>1,499</td>
<td>1,459</td>
<td>50%</td>
<td>43%</td>
<td>31%</td>
<td>83%</td>
</tr>
<tr>
<td>Annual Mean</td>
<td>16,564</td>
<td>13,679</td>
<td>215</td>
<td>1,313</td>
<td>1,357</td>
<td>43%</td>
<td>36%</td>
<td>56%</td>
<td>74%</td>
</tr>
</tbody>
</table>

Table B9. Number of students enrolled and percentage of students taught by full-time, permanent faculty in undergraduate core courses offered by the Department of Geosciences, FY 2008 – FY 2010

<table>
<thead>
<tr>
<th>FY</th>
<th>Total Geog 1101</th>
<th>Geog 1112</th>
<th>Geog 1113</th>
<th>Geol 1121K</th>
<th>Geol 1122K</th>
<th>Geol 2001</th>
<th>Geog 1101 (FT)</th>
<th>Geog 1112 (FT)</th>
<th>Geog 1113 (FT)</th>
<th>Geol 1121K (FT)</th>
<th>Geol 1122K (FT)</th>
<th>Geol 2001 (FT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>3,275</td>
<td>570</td>
<td>907</td>
<td>785</td>
<td>451</td>
<td>355</td>
<td>179</td>
<td>26%</td>
<td>26%</td>
<td>51%</td>
<td>89%</td>
<td>66%</td>
</tr>
<tr>
<td>2009</td>
<td>3,560</td>
<td>538</td>
<td>1024</td>
<td>896</td>
<td>487</td>
<td>385</td>
<td>198</td>
<td>47%</td>
<td>93%</td>
<td>88%</td>
<td>92%</td>
<td>51%</td>
</tr>
<tr>
<td>2010</td>
<td>3,864</td>
<td>544</td>
<td>1126</td>
<td>994</td>
<td>503</td>
<td>380</td>
<td>288</td>
<td>31%</td>
<td>81%</td>
<td>89%</td>
<td>100%</td>
<td>81%</td>
</tr>
<tr>
<td>Annual Mean</td>
<td>3,418</td>
<td>554</td>
<td>966</td>
<td>841</td>
<td>469</td>
<td>370</td>
<td>189</td>
<td>35%</td>
<td>69%</td>
<td>77%</td>
<td>94%</td>
<td>66%</td>
</tr>
</tbody>
</table>

Evidence of program relevance and the degree to which community, student, and professional needs are served by the department

The Department of Geosciences is committed to the mission of Georgia State University. With an emphasis on environmental issues, students within the department are exposed to a richly diverse, interdisciplinary curriculum and research endeavors that are strongly interdisciplinary. The rigor of instruction/training in the department has prepared students well for careers, especially in the state and federal government, as well as for advanced studies in top-tier graduate programs. Engagement of our faculty and students in public outreach and community partnerships benefits greatly the greater community.
Information on similar departments at other institutions

Extensive internet searches revealed that the aforementioned geosciences departments at Florida Atlantic University, University of Arkansas, and University of Missouri – Kansas City were closely aligned with the Department of Geosciences at Georgia State University. General characteristics of the four departments are provided in Table B1. Therefore, the following data were sought for each department: (1) numbers of majors and degrees conferred for the past three fiscal years; (2) student (undergraduate major, master)/TT faculty ratios for the past three fiscal years; (3) number of credit hours generated for each of the past three fiscal years; and (4) SAT and GRE scores of students for each of the past three fiscal years. Chairs of those departments did not respond to e-mails expressing their cooperation in the self-study. As a result, the above data were obtained from Office of Institutional Effectiveness and Analysis (http://iea.fau.edu/) at Florida Atlantic University, the Office of Institutional Research (http://oir.uark.edu/) at the University of Arkansas, and the Office of Institutional Research, Assessment, and Planning (http://irapweb.umkc.edu/) at the University of Missouri – Kansas City. Publications information for faculty at the peer departments were accessed from on-line biographies and CVs as well as searches using Web of Science®.

Section C: Progress toward Goals and Objectives

This section of the report would comprise typically an analysis of progress toward goals and objectives as enumerated in the self study from the last cycle. This analysis is complicated by the merging of the faculties in 2006 from the former Department of Geology and the Geography program within the former Department of Anthropology and Geography. The discussion below provides specific responses to the objectives and goals stated in the previous self-study reports from those two departments. Overall, most of the goals were not met.

Geography goals and objectives (from 2003/2004 self study)

The first goal was to enrich the quality, variety, and quantity of the curriculum. The objectives were as follows: (1) add five new tenure-track lines distributed across the subdisciplines of each program; (2) provide graduate-funding packages that will increase the quality and viability of each graduate program; (3) increase the number of faculty and students in underrepresented segments of the population; (4) provide high quality advisement and mentorship for all students; and (5) utilize the Professional Certificate Program in Geographic Information Sciences (GISc) to increase enrollment of graduate students in anthropology and geography. The first goal is far from being met: only one new tenure-track line (i.e. GIS and Urban Health) has been added. The remaining hires done since the self study replaced four departed faculty members (i.e. Truman Hartshorn, Susan Walcott, John Yin, and Paul Knapp). In addition, one more geographer, Dona Stewart, has left. Current graduate student packages ($6,000 per academic year) are equivalent to the packages that existed in the Department of Anthropology and Geography; thus, no progress has been made on the second goal. With respect to the third goal, it is unknown if there has been an increase in the number students from underrepresented segments of the population, but the addition of Katherine Hankins and Parama Roy has increased the representation of female geographers. It also is unknown if the fourth goal was met, since no specific metrics were proposed in the 2004 report. While GIS continues to be a significant draw for both undergraduate and graduate students in the Geography program, it is
not known if the GIS certificate program actually has increased the number of Geography M.A. students. Comparing enrollments in FY 2003 with the average enrollments over the past three years, the number of GIS certificate students has not increased while the number Geography M.A. students has increased from 17 to 24. Therefore, the best that can be noted about the fifth goal is that it has been met partially.

The second goal was to develop a distinguished department with model graduate programs in Anthropology and Geography. The objectives were as follows: (1) continue productive, high-level scholarship; (2) increase extramural and intramural funding for research; and (3) expand research laboratory space. As documented in Section F, geography faculty in continue to conduct research at a nationally competitive level, comparable to scholarship at peer departments. Greater support of graduate research assistantships was identified in the last self study as a key ingredient to achieving this objective, particularly a GRA assigned to faculty conducting funded research; however, this objective was not achieved. With respect to the second goal, it is impossible to determine if intramural and extramural funding has increased, since detailed information (e.g., specific dollar amounts to GSU on multi-institution collaborative grants) was not provided in the 2004 report. Nevertheless, from FY 2001 to FY 2003, faculty in the Department of Anthropology and Geography were linked to approximately $1.1 million of funding, while from FY 2008 to FY 2010, faculty in the Department of Geosciences were linked to at least $920,000 in funding. Finally, the third goal has only been met partially: Jeremy Diem acquired a small laboratory space on the fourth floor of Sparks Hall dedicated to climate research. New geography faculty members Jordan Clayton and Lawrence Kiage both conduct laboratory-intensive aspects of their research, and they have been sharing laboratory space in Kell 315 and Kell 336 with Daniel Deocampo that was previously used by departed geology faculty members Beth Christiansen and Pamela Burnley, respectively.

Geology objectives (from 2001/2002 self study)

The first objective category dealt with the department’s programs. The objectives endorsed by the external-review committee were as follows: (1) strengthen the programs in environmental groundwater studies; (2) strengthen the existing program in ICPMS studies, develop new ICPMS collaborations with research and development corporations, and enhance international collaboration in Iranian ophiolites; and (3) participate in interdisciplinary efforts to create an integrated science sequence for teacher preparation students. The first objective was based on Seth Rose being the sole faculty member involved in groundwater studies at the time of the last self study. This remains the case, although the addition of Jordan Clayton on the geography side now builds strength in surface water. The Hydrogeology certificate is being discontinued due to a lack of student interest and lack of faculty (e.g., the loss of Suvasis Dixit) needed to field this certificate. Concerning the second objective, the departure of Mohamad Ghazi in 2002 diminished greatly the prominence of geochemical studies of Iranian ophiolites. However, the addition of Eirik Krogstad in 2004 has led to new developments in the ICPMS laboratory, specifically the incorporation of isotope dilution methods for the measurement of Rb-Sr, U-Pb isotope ratios and Rare earth element signatures. With respect to the third objective, Kenneth Terrell has taught a total of 176 undergraduate students in an ISCI course, which is a teacher-preparation course, since Fall 2009, and the department also houses at least one NSCI course. This is a significant investment of departmental resources for programs outside the College of Arts and Sciences.
The second objective category dealt with the department’s identity. The objectives endorsed by the external-review committee were as follows: (1) increase the diversity of both the faculty and student body; (2) develop collaborative relationships with geology faculty at other schools in Georgia; (3) obtain substantial technician support; (4) improve the quality of space for research and instruction; (5) improve instructional technology support to a minimum acceptable level; and (6) increase the numbers of undergraduate and graduate geology majors. No progress has been made on the first objective. The two female geology faculty members from the previous self-study both resigned, thereby leaving geology faculty with no females or under-represented minorities. The second objective has been attained through collaborations with faculty at the Georgia Institute of Technology. Crawford Elliott maintains active and funded research collaboration with several faculty members at the Georgia Institute of Technology, three of whom also are supporting collaborators on Daniel Deocampo’s and Crawford Elliott’s pending $234,000 NSF proposal to acquire a state-of-the-art X-ray diffraction facility. No progress has been made on the third objective, mostly because the merge necessitated hiring a laboratory coordinator, Atieh Tajik, to help with the introductory labs. Space for research and instruction remains in Kell Hall, which continues to deteriorate; thus, no progress has been made on the fourth objective. The fifth objective was met through the development of the Department of Geosciences, whereby a PC systems specialist was hired at the department level. Finally, the sixth objective appears to have been met partially due to an increase in Geology B.S. students from 42 in FY 2008 to 75 in FY 2010. The causes of the increase remain unknown, but are likely tied to increases in petroleum-industry and environmental-consulting hiring. The number of Geology M.S. students has remained stable over the years.

Section D: Curricula Quality

Evidence of student learning

The Department of Geosciences represents the very recent merger of two once-separate entities, and as a result, there is significant variation in the specification and assessment of learning outcomes among the four degree programs within the department, as shown in Appendix D1. The learning outcomes for the Geography BA and MA programs are identical, and emphasize broad skill sets that are developed within the context of the discipline of geography, including oral, visual and written communication skills, critical thinking skills, quantitative skills, and technical skills. In contrast, the learning outcomes for the BS in geology stress the acquisition of a factual body of knowledge pertaining to earth materials, earth processes, and earth history, while the learning outcomes for the Geology M.S. program are focused upon student enrollment and graduation rates, as well as the quality of the thesis or non-thesis project.

Assessment plans differ accordingly (Appendix D1). In many instances, much thought and work has been devoted to assessing the outcomes, although approaches differ greatly. A detailed rubric for measuring outcomes has been developed for the Geography BA, in which instructors of seven core courses rate student output based upon term projects, papers, presentations, and tests as appropriate, with care taken to ensure that all outcomes are measured adequately through the differing types of skills that are utilized in the tests and projects that are encompassed among the core offerings. Similarly, but with a smaller measurement set due to the smaller number of course offerings, the Geography MA program utilizes learning outcome measurement through
instructor evaluations of graduate-only courses, the thesis or non-thesis project, and oral and written comprehensive evaluations. A different approach is taken for the Geology B.S. program: an extensive exit examination has been developed for measuring the knowledge acquired by graduating seniors. Assessment of achievement of the learning outcomes for the Geology M.S. program requires instructors to evaluate the thesis and non-thesis projects.

Learning outcomes are, by and large, being met throughout the department, with some exceptions. However, there are acknowledged needs for improved assessment tools, and greater emphasis must be placed on ensuring that thorough assessments are performed and evaluated every year. In addition, any appropriate follow-up actions must be taken to ensure that student learning levels remain acceptable.

Thus, three forces have converged that necessitate much more emphasis be placed by the department upon specifying and assessing learning outcomes, as well as acting upon any shortcomings that may be noted. The first is the wide disparity in the nature of the learning outcomes and their assessment that currently exists within the department as the result of the merger of Geology and Geography. The second is the ongoing change in departmental degree offerings. As discussed in Section H, a number of new degrees and concentrations are anticipated for this department, all of which will require the specification of learning outcomes and how to assess them. The third force is a need for more thorough and consistent analysis of student learning and the continual formation of action plans to ensure steady improvement.

Lastly, the department has participated fully in the CTW initiative, which was launched in Fall 2009. The department currently has five CTW courses, although two are being consolidated into one capstone course for all Geosciences undergraduate majors. The courses include Urban Geography, Climatic Change, Sedimentary Environments, and the Geosciences Senior Seminar (formerly Geology Senior Seminar and Geography Senior Seminar). These courses have tailored assignments to enhance students’ critical thinking skills within their respective disciplines, and these are assessed on assignment-specific rubrics. Syllabi for the CTW courses are in Appendix D2.

Evaluative statements about curricula quality

Surveys conducted by the GSU Office of Institutional Research polled current students, alumni, and faculty members on various aspects of the department, including curricula quality (Appendix D5). The following responded: 40 undergraduate majors; 18 graduate students; 23 undergraduate alumni, 15 graduate alumni, and 9 faculty members. Responses by students enrolled in the program (undergraduate majors and graduate students) follow approximately the same patterns as undergraduate and graduate-student alumni; for the sake of clarity, we have used only students enrolled in the program as of Spring 2010 to analyze the surveys. Questions had five options, ranging from “Strongly Disagree” or “Poor”, both of which a score of one, to “Strongly Agree” or “Excellent,” both of which had a score of five. A score of three indicated neutrality. For the sake of ease in interpreting the results, we have grouped the answers into two categories: “Positive” (where students answered with 4 or 5, with 5 being “Excellent” or “Strongly Agree”) and “Negative” (where students answered either 1 or 2, with 1 being “Poor” or “Strongly Disagree.”). A summary of numerical results from the surveys is provided in Table D1.

There seems to be a substantial degree of satisfaction on the part of undergraduate students in both geography and geology with respect to the academic rigor of the department; however, graduate students appear somewhat less satisfied about the program as a whole. When asked
whether the program is “academically challenging.” 90% of currently enrolled undergraduates (mean of 4.52) answered positively, which compares very favorably with the university mean for the same population, which is 4.12 for current undergraduates. Sixty-seven percent of graduate students answered positively (mean of 3.78) compared to a mean of 4.08 for the University. There was some difference between geography and geology students, where geography students responded with a mean score of 3.5 versus 4.14 for geology graduate students. A related question about whether faculty members are “interested in the academic development of Geosciences majors” also elicited a positive response from 90% of current undergraduates (mean of 4.59) and 89% among graduate students (mean of 4.17). Compared to the university mean (3.91 for undergraduates) and (4.16 for graduates), the department meets or exceeds the experience of students in other departments. Among undergraduates, there is also a high degree of satisfaction with regard to whether faculty members are “appropriately prepared for their courses”: 93% positive for current undergraduates (4.54 mean, compared to 4.06 university mean) and 67% positive for graduate students (with a 3.88 mean, compared to a university mean of 4.16). This question is closely related to “Effectiveness of teaching methods used by faculty”: 90% positive for undergraduate majors (mean of 4.36 versus 3.83 for the university), and 78% positive for graduate students (mean of 3.94 versus 3.97 for the university).

In terms of student perceptions regarding communication between faculty and students, results are largely very good. Although undergraduate students seem to be generally satisfied with their interaction with Geosciences faculty, there seems to be somewhat greater concern among graduate students. The question about “open communication between faculty and students” elicited the following responses: 85% positive (mean of 4.40 compared to 3.71 for the university) for undergraduates and 72% positive from the graduate students (mean of 3.94 compared to 3.84 for the university). At the same time, with respect to “availability of faculty to students outside the classroom” the departmental mean is higher than that of the University for both undergraduates and graduates: 4.33 versus 3.74 and 4.18 versus 4.02. Students were relatively pleased with “procedures used to evaluate student performance:” 83% of undergraduates answered positively (mean of 4.21 compared to the university mean of 3.68) and 72% of graduate students answered positively (mean of 3.83, which is slightly lower than the university’s mean of 3.93).

 Academic advisement is another area where the department serves its students rather well. When asked about the availability of academic advisement in the department, 80% of undergraduates (4.15 mean compared to a university mean of 3.51) and 77% of graduate students (3.83 compared to a university mean of 3.69) answered positively. On the other hand, responses to the question about “clarity of degree requirements” were mixed: 77% of undergraduates are satisfied, with a mean of 4.13 (compared to the university’s 3.72 mean); whereas 72% of graduate students are satisfied, with a mean of 3.44, compared to the university mean of 3.97.

Whereas in terms of quality of teaching, communication between faculty and students, and academic advising and degree requirements, the positive opinions clearly outweigh the negative ones, one area of concern for both undergraduates and graduates is the availability of career advisement and career preparation in the department. The question about the availability of career advisement in the department elicited the following responses: only 55% of undergraduate students answered with a 4 or 5, and the mean was 3.85 (although this still compares favorably with the university mean of 3.24). For graduate students, only 33% of students answered positively, with a mean of 3.27 (compared to 3.31 for the university as a whole). The question about the degree to which the program “is preparing me for my
professional career and/or further study” elicited mixed responses. Eighty-five percent of undergraduates responded positively (mean of 4.42, compared to the university mean of 3.87) versus 61% of graduate students answering positively (mean of 3.5, compared to a university mean of 4.07).

One significant problem area, common to undergraduates, graduate students, and the faculty, is the ability of the department to offer courses frequently and with variety. Just 32% of undergraduates answered positively to the question about the “frequency of undergraduate major course offerings” (with a mean of 2.90 compared to the university mean of 3.04) and just two students of 18 among graduate students answered positively (a mean of 2.44 compared to the university mean of 3.34). Likewise, only 53% of undergraduates answered positively regarding the “variety of course offerings” (with a mean of 3.38, just slightly above the university mean of 3.36) compared to a dismal 2.61 mean among graduate students, where only two responded with a “positive” answer (compared to the university mean of 3.51). The department clearly lags behind the university. Budgetary constraints and the increase in the required minimum enrollment from 5 to 12 students for graduate seminars and the increase in the minimum enrollment to 15 students in 4000-6000 level classes has forced the cancelation of several courses in the department.

As a whole, the faculty members identified similar issues as that of the students in terms of the frequency of course offerings and the variety of course offerings. Less than half of those surveyed answered positively about the frequency of course offerings, with a mean of 3.44, compared to the university average of 4.20. Likewise, two of the nine faculty members identified the variety of course offerings as negative (a 1 or 2), with the mean score a 3.11, compared to the university mean of 3.93.

Table D1. Responses from current students, alumni, and faculty to curricula-quality questions on Office of Institutional Research surveys. Possible scores on the surveys ranged from 1 (strongly disagree or poor) to 5 (strongly agree or excellent).

<table>
<thead>
<tr>
<th></th>
<th>B.A. Geography</th>
<th>B.S. Geology</th>
<th>B.A. &amp; B.S. University</th>
<th>M.A. Geography</th>
<th>M.S. Geology</th>
<th>M.A. &amp; M.S. University</th>
<th>Faculty Geosciences</th>
<th>Faculty University</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty members in the department were interested in the academic development of majors</td>
<td>4.3</td>
<td>4.6</td>
<td>3.9</td>
<td>4.3</td>
<td>4.2</td>
<td>4.2</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>The program of study was academically challenging</td>
<td>4.2</td>
<td>4.7</td>
<td>4.0</td>
<td>3.8</td>
<td>4.0</td>
<td>4.0</td>
<td>3.9</td>
<td>4.2</td>
</tr>
<tr>
<td>Faculty in the department were appropriately prepared for their courses</td>
<td>4.5</td>
<td>4.6</td>
<td>4.1</td>
<td>4.1</td>
<td>4.0</td>
<td>4.2</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>I feel the program prepared me for my professional career and/or further study</td>
<td>3.9</td>
<td>4.2</td>
<td>3.8</td>
<td>3.4</td>
<td>3.6</td>
<td>4.0</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Effectiveness of teaching methods used by faculty</td>
<td>4.3</td>
<td>4.5</td>
<td>3.9</td>
<td>3.9</td>
<td>3.9</td>
<td>4.0</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Procedures used to evaluate student performance</td>
<td>4.0</td>
<td>4.2</td>
<td>3.7</td>
<td>4.0</td>
<td>3.9</td>
<td>4.0</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Frequency of course offerings</td>
<td>3.1</td>
<td>3.0</td>
<td>3.3</td>
<td>2.3</td>
<td>2.8</td>
<td>3.5</td>
<td>3.4</td>
<td>4.2</td>
</tr>
<tr>
<td>Variety of course offerings</td>
<td>3.2</td>
<td>3.3</td>
<td>3.5</td>
<td>2.3</td>
<td>3.2</td>
<td>3.6</td>
<td>3.1</td>
<td>3.9</td>
</tr>
<tr>
<td>Clarity of degree requirements</td>
<td>4.0</td>
<td>4.4</td>
<td>3.9</td>
<td>3.1</td>
<td>3.7</td>
<td>4.1</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Mean</td>
<td>3.9</td>
<td>4.2</td>
<td>3.8</td>
<td>3.5</td>
<td>3.7</td>
<td>4.0</td>
<td>3.5</td>
<td>4.1</td>
</tr>
</tbody>
</table>

On-going improvements to curricula quality
The department has recognized the dissatisfaction of students with respect to career advisement and preparation and has revised several key courses. One course already redesigned
to include a focus on career advisement and placement is the Geosciences Senior Seminar, a CTW course, which as of Spring 2010 includes a substantial focus on “life after the major,” with an emphasis on preparation for graduate school and/or career placement. Regarding graduate courses, the graduate committee, in the process of formulating a single degree (an M.S. in Geosciences) ongoing in 2010-2011, anticipates including career advisement in its revised degree program.

Curricula quality in the department also has been improved through the renovation of Geography 1112 (Introduction to Weather and Climate) labs enabled by NASA funding for climate-change education. Students were very dissatisfied with the previous labs; therefore, ten new labs that are inquiry-based and visualization-driven have been created and are constantly being modified.

Section E: Student Quality

Input quality metrics

The six programs housed in the Department of Geosciences have admission requirements either similar to or slightly different than requirements at the university/college level. There are no additional admission requirements for the undergraduate programs. In addition to the general requirements (i.e. official transcripts and test scores) of the College of Arts and Sciences, the Department of Geosciences requires students applying to the Master’s programs to submit three letters of recommendation from professional sources and provide a statement of educational and career goals. The GIS certificate program requires the students to have a Bachelor’s degree in geography or a related field, to provide a letter of intent, and to provide GRE scores and transcripts. The Hydrogeology certificate program, which is being discontinued, required three letters of recommendation and a goal statement.

Undergraduate majors in the department tend to have above-average SAT scores (Tables E1 and E2). Freshman Index scores are not discussed here due to the peculiarities of student grade point averages. SAT scores of both Geography and Geology majors were higher than the university mean, with Geology majors having higher scores than did Geography majors. SAT scores of GSU Geosciences also compare favorable with SAT scores of undergraduate students in the peer departments (Table E2). Since actual SAT scores were available only for Florida Atlantic University, it is difficult to make a solid comparison between GSU Geosciences and the other departments.

Table E1. Program-specific and university-wide SAT scores for each fiscal year and the annual mean, FY 2008 – FY 2010

<table>
<thead>
<tr>
<th>FY</th>
<th>Geography SAT (Combined)</th>
<th>Geology SAT (Combined)</th>
<th>University SAT (Combined)</th>
<th>Geography SAT (Verbal)</th>
<th>Geology SAT (Verbal)</th>
<th>University SAT (Verbal)</th>
<th>Geography SAT (Math)</th>
<th>Geology SAT (Math)</th>
<th>University SAT (Math)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>1,091</td>
<td>1,096</td>
<td>1,058</td>
<td>539</td>
<td>543</td>
<td>533</td>
<td>552</td>
<td>553</td>
<td>525</td>
</tr>
<tr>
<td>2009</td>
<td>1,073</td>
<td>1,112</td>
<td>1,058</td>
<td>534</td>
<td>552</td>
<td>533</td>
<td>539</td>
<td>560</td>
<td>525</td>
</tr>
<tr>
<td>2010</td>
<td>1,071</td>
<td>1,094</td>
<td>1,057</td>
<td>540</td>
<td>535</td>
<td>533</td>
<td>531</td>
<td>559</td>
<td>524</td>
</tr>
<tr>
<td>Annual Mean</td>
<td>1,076</td>
<td>1,102</td>
<td>1,058</td>
<td>538</td>
<td>544</td>
<td>533</td>
<td>538</td>
<td>558</td>
<td>525</td>
</tr>
</tbody>
</table>
Table E2. SAT scores for majors in the Department of Geosciences and peer departments at other universities, FY 2008 – FY 2010

<table>
<thead>
<tr>
<th>Institution</th>
<th>SAT (Combined)</th>
<th>SAT (Verbal)</th>
<th>SAT (Math)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Florida Atlantic University</td>
<td>1091</td>
<td>568</td>
<td>523</td>
</tr>
<tr>
<td>Georgia State University</td>
<td>1090</td>
<td>540</td>
<td>550</td>
</tr>
<tr>
<td>University of Arkansas</td>
<td>1190*</td>
<td>574*</td>
<td>616*</td>
</tr>
<tr>
<td>University of Missouri – Kansas City</td>
<td>1010*</td>
<td>490*</td>
<td>520*</td>
</tr>
</tbody>
</table>

* converted from ACT score

Student quality based on GRE scores has varied widely among the graduate programs (Tables E3, E4, and E5). Detailed information is in Appendix E1. The mean GRE scores of GIS Certificate students were consistently higher than the mean scores for university-wide certificate students, students in both of the department’s Master’s programs, and university-wide M.A. and M.S. students. The mean GRE scores of Geography M.A. students were consistently lower than the university-wide mean score for M.A. students. Nevertheless, the mean undergraduate GPA of enrolled Geography M.A. students was a respectable 3.2. While the three-year mean GRE score for Geology M.S. students implies that the students were generally weaker than both the Geography M.A. and university-wide M.S. students, the relatively low mean GRE score for the Geology M.S. students can be attributed to a weak pool of applicants to the program in FY 2009.

Table E3. Mean GRE scores (verbal plus quantitative) for GIS Certificate students and for university-wide enrolled certificate students for each fiscal year and the annual mean

<table>
<thead>
<tr>
<th>FY</th>
<th>GIS Applied Count</th>
<th>GIS Accepted Count</th>
<th>GIS Enrolled Count</th>
<th>GIS Applied GRE</th>
<th>GIS Accepted GRE</th>
<th>GIS Enrolled GRE</th>
<th>University Applied GRE</th>
<th>University Accepted GRE</th>
<th>University Certificate GRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>6</td>
<td>6</td>
<td>2</td>
<td>1,114</td>
<td>1,114</td>
<td>1,290</td>
<td>998</td>
<td>1,032</td>
<td>1,091</td>
</tr>
<tr>
<td>2009</td>
<td>14</td>
<td>8</td>
<td>5</td>
<td>1,083</td>
<td>1,138</td>
<td>1,102</td>
<td>1,020</td>
<td>1,046</td>
<td>1,064</td>
</tr>
<tr>
<td>2010</td>
<td>17</td>
<td>10</td>
<td>3</td>
<td>1,068</td>
<td>1,143</td>
<td>1,160</td>
<td>1,027</td>
<td>1,060</td>
<td>1,041</td>
</tr>
<tr>
<td>Annual Mean</td>
<td>12</td>
<td>8</td>
<td>3</td>
<td>1,081</td>
<td>1,134</td>
<td>1,157</td>
<td>1,016</td>
<td>1,047</td>
<td>1,061</td>
</tr>
</tbody>
</table>
Table E4. Mean GRE scores (verbal plus quantitative) for Geography M.A. students and for university-wide enrolled M.A. students for each fiscal year and the annual mean

<table>
<thead>
<tr>
<th>FY</th>
<th>Geography Applied Count</th>
<th>Geography Accepted Count</th>
<th>Geography Enrolled Count</th>
<th>Geography Applied GRE</th>
<th>Geography Accepted GRE</th>
<th>Geography Enrolled GRE</th>
<th>University Applied GRE</th>
<th>University Accepted GRE</th>
<th>University M.A. GRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>16</td>
<td>14</td>
<td>8</td>
<td>1,118</td>
<td>1,133</td>
<td>1,092</td>
<td>1,058</td>
<td>1,146</td>
<td>1,113</td>
</tr>
<tr>
<td>2009</td>
<td>12</td>
<td>10</td>
<td>4</td>
<td>1,004</td>
<td>1,021</td>
<td>1,023</td>
<td>1,053</td>
<td>1,136</td>
<td>1,117</td>
</tr>
<tr>
<td>2010</td>
<td>14</td>
<td>11</td>
<td>5</td>
<td>1,091</td>
<td>1,098</td>
<td>1,090</td>
<td>1,061</td>
<td>1,135</td>
<td>1,120</td>
</tr>
<tr>
<td>Annual Mean</td>
<td>14</td>
<td>12</td>
<td>6</td>
<td>1,076</td>
<td>1,090</td>
<td>1,075</td>
<td>1,058</td>
<td>1,139</td>
<td>1,117</td>
</tr>
</tbody>
</table>

Table E5. Mean GRE scores (verbal plus quantitative) for Geology M.S. students and for university-wide enrolled M.S. students for each fiscal year and the annual mean

<table>
<thead>
<tr>
<th>FY</th>
<th>Geology Applied Count</th>
<th>Geology Accepted Count</th>
<th>Geology Enrolled Count</th>
<th>Geology Applied GRE</th>
<th>Geology Accepted GRE</th>
<th>Geology Enrolled GRE</th>
<th>University Applied GRE</th>
<th>University Accepted GRE</th>
<th>University Enrolled GRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>9</td>
<td>6</td>
<td>4</td>
<td>1,132</td>
<td>1,133</td>
<td>1,170</td>
<td>1,031</td>
<td>1,071</td>
<td>1,053</td>
</tr>
<tr>
<td>2009</td>
<td>12</td>
<td>8</td>
<td>6</td>
<td>976</td>
<td>958</td>
<td>930</td>
<td>1,045</td>
<td>1,092</td>
<td>1,080</td>
</tr>
<tr>
<td>2010</td>
<td>11</td>
<td>7</td>
<td>6</td>
<td>1,070</td>
<td>1,094</td>
<td>1,081</td>
<td>1,030</td>
<td>1,106</td>
<td>1,046</td>
</tr>
<tr>
<td>Annual Mean</td>
<td>11</td>
<td>7</td>
<td>5</td>
<td>1,052</td>
<td>1,053</td>
<td>1,047</td>
<td>1,035</td>
<td>1,077</td>
<td>1,059</td>
</tr>
</tbody>
</table>

Both Master’s programs in the department accept a relatively high percentage of applicants, and those accepted students tend to have relatively low GRE scores compared to university averages. Detailed information is in Appendix E1. The acceptance percentages of students into the Geography M.A. and Geology M.S. programs during FY 2008 – FY 2010 were 86% and 64%, respectively. The university-wide acceptance percentages of M.A. and M.S. students during FY 2008 – FY 2010 were 53% and 52%, respectively. Unfortunately, there were insufficient data from the peer departments in order to facilitate comparisons with those departments.

There is a large disparity among the graduate programs with respect to enrolled/accepted ratios. The percentage of accepted students who enroll in the GIS Certificate, Geography M.A., and Geology M.S. programs, are 38%, 50%, and 71%, respectively. The university-wide percentages for certificate programs, M.A. programs, and M.S. programs are 43%, 53%, and 65%, respectively. Therefore, the two Geography-based programs are below-average with respect to enrolling accepted students.

Output quality metrics

Geosciences majors have done an excellent job demonstrating their scholarly skills outside the classroom during the past three years. During FY 2008 – FY 2010, there were 25 presentations by Geosciences students at conferences (Appendix E2). Thus, the department averages approximately eight student presentations per year. The two most popular conferences have been the Annual Meeting of the Association of American Geographers, where six
presentations were given, and the Geological Society of America Annual Meeting, where five presentations were given. In addition, three students gave presentations at the Georgia State Undergraduate Research Conference. Concerning publications, an M.S. student was the lead author on a paper published in *Chemical Geology*, and an M.A. student was a co-author on a paper published in the *Southeastern Geographer*. Two B.A. students and one M.A. student are co-authors on a paper published in the *Journal of Applied Meteorology and Climatology* in FY 2011. A B.A. student is a co-author on an accepted paper to *ACME*. In addition, an M.A. student is a co-author on a paper submitted to *Icarus*, an M.A. student is a co-author on a paper submitted to *Landscape and Urban Planning*, an M.A. student and an M.S. student are co-authors on a paper submitted to *Southeastern Geographer*, and an M.A. student is co-author on a paper submitted to *Journal of Social and Cultural Geography*. Finally, a B.S. student received the Geological Society of America ExxonMobil Bighorn Basin Field Award, and a B.A. student was awarded a National Cancer Institute R25E Summer Research Experience at The University of Texas.

Geosciences graduates have been successful in job placement and acceptance to graduate programs (Appendix E3). Based on the survey results, approximately 75% of Geosciences graduates secured a job aligned strongly with their Geosciences education or entered Master’s or Ph.D. programs. Students typically gained employment with local, state, and federal government agencies, non-profit organizations, or with environmental consulting firms. Many of those positions involve the use of GIS. Besides continuing their education in graduate programs in the department, students also entered graduate programs at the following institutions: Clark University, Colorado School of Mines, Colorado State University, Florida State University, Georgia Institute of Technology, University of Colorado, University of Delaware, University of Delaware, University of Illinois, University of Tennessee, University of Utah, and Western Washington University. At least four Geosciences graduates from FY 2007 – FY 2010 are pursuing Ph.D. degrees; thus, approximately one graduate per year enrolls in a Ph.D. program.

**Section F: Faculty Quality**

Quality and quantity of scholarly and creative productivity

Geosciences faculty have been producing high-quality scholastic works over the past three years (Table F1). A listing of all publications, except books, is provided in Appendix F6. The department averaged approximately 18 publications (i.e. refereed research articles, books, chapters, reviews, interviews and editorial) per year, which translates into 1.3 publications per faculty member. There were approximately 12 refereed research articles, which carry considerably more weight than do the other publications except for books, per year. The number of research articles in peer-reviewed journals increased from FY 2009 to FY 2010 and should increase further in FY 2011. Approximately 80% of the refereed research articles had 2009 impact factors greater than 1.0. Therefore, only 20% of the articles either did not have an impact factor or were published in journals where articles are typically cited just once to two years after publication. Finally, Wiley-Blackwell published in 2010 a book by Jeremy Crampton entitled “Mapping: A Critical Introduction to Cartography and GIS.”
Table F1. Number and quality of publications and number of conference presentations per year and the annual mean

<table>
<thead>
<tr>
<th>FY</th>
<th>Publications (total)</th>
<th>Refereed research articles (lead-authored)</th>
<th>Refereed research articles (Impact Factor* &gt; 1)</th>
<th>Publications (per TT)</th>
<th>Refereed research articles (per TT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>17</td>
<td>11</td>
<td>8</td>
<td>1.4</td>
<td>0.9</td>
</tr>
<tr>
<td>2009</td>
<td>14</td>
<td>11</td>
<td>9</td>
<td>1.0</td>
<td>0.8</td>
</tr>
<tr>
<td>2010</td>
<td>24</td>
<td>15</td>
<td>12</td>
<td>1.6</td>
<td>1.0</td>
</tr>
<tr>
<td>Annual Mean</td>
<td>18</td>
<td>12</td>
<td>12</td>
<td>1.3</td>
<td>0.9</td>
</tr>
</tbody>
</table>

* This is the 2009 impact factor for journals available from Journal Citation Reports

Based on comparisons with peer departments, GSU Geosciences has produced a suitable number of high-quality peer-reviewed articles over the past three years (Table F2). Peer-reviewed articles by FAU-Geosciences have been fewer and of a lower quality than those produced by GSU Geosciences and the other two peer departments. Therefore, production by GSU Geosciences was equivalent in quantity and quality to that of Arkansas Geosciences and UM-KC Geosciences. What set GSU Geosciences apart from the other departments was a relatively large percentage (62%) of publications that were lead-authored by a Geosciences faculty member.

Table F2. Faculty publication productivity for the Department of Geosciences and peer departments at other universities, FY 2008 – FY 2010

<table>
<thead>
<tr>
<th>Institution</th>
<th>Refereed research articles (total)</th>
<th>Refereed research articles (per TT)</th>
<th>Lead-authored</th>
<th>Impact Factor* &gt; 1</th>
<th>Impact Factor* &gt; 1 (per TT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Florida Atlantic University</td>
<td>22</td>
<td>1.9</td>
<td>50%</td>
<td>13</td>
<td>1.1</td>
</tr>
<tr>
<td>Georgia State University</td>
<td>37</td>
<td>2.7</td>
<td>62%</td>
<td>29</td>
<td>2.1</td>
</tr>
<tr>
<td>University of Arkansas</td>
<td>42</td>
<td>2.5</td>
<td>36%</td>
<td>32</td>
<td>1.9</td>
</tr>
<tr>
<td>University of Missouri – Kansas City</td>
<td>31</td>
<td>3.1</td>
<td>26%</td>
<td>23</td>
<td>2.3</td>
</tr>
</tbody>
</table>

* This is the 2009 impact factor for journals available from Journal Citation Reports

In addition to publishing, faculty members were highly active in disseminating research results through conference presentations (Appendix F7). Faculty members gave 13, 21, and 21 conference presentations in FY 2008, FY 2009, and FY 2010, respectively. Therefore, the department averaged approximately 18 conference presentations per year, with the most popular conferences were as follows: Annual Meeting of the Association of American Geographers (33%), Annual Meeting of the Southeastern Division of the Association of American Geographers (11%), Geological Society of America Annual Meeting (9%), and Greater Atlanta Geomorphology and Hydrology Research Conference (7%).

The Geosciences faculty has extremely high standards for scholarship. A recent survey of the faculty conducted by the Office of Institutional Research for this self study revealed that the faculty members who responded think the scholarship of the department is average to above-average (i.e. 3.67 on a scale of 1 to 5), which appears to be the lowest rating given by faculty in 45 university departments (Appendix D5). For example, none of the nine respondents felt the scholarship of the faculty was “excellent.” Results from the survey also revealed that the Geosciences faculty has above-average rates of publishing and conference presentations. In
addition, it was shown previously that GSU Geosciences appears to be stronger than its peer departments in the area of scholarship. The high level of scholarship by faculty in the Department of Geosciences is impressive; thus, we find it necessary to state a goal of finding strategies to retain a stable faculty cohort.

Results of promotion and tenure and reviews
There were three pre-tenure reviews, four post-tenure reviews, and one P&T review during the period FY 2008 – FY 2010. All pre-tenure reviews were successful. The post-tenure reviews were informative and helpful for each faculty member. A faculty member applied for promotion to professor but was turned down by the Provost.

Faculty honors
There were six notable faculty honors over the past three years. In recognition of their distinguished contribution to the discipline of geology, two faculty members, Hassan Babaie and Crawford Elliott, were elected as fellows of the Geological Society of America. Hassan Babaie and Daniel Deocampo were elected as chairs of the Geoinformatics Division and the Limnogeology Division, respectively, of the Geological Society of America. Lawrence Kiage received the J. Warren Nystrom Award from the Association of American Geographers in 2008. The criteria for this award are as follows: originality of ideas and potential contribution to the advancement of knowledge in particular subfields of the geography; clarity and effectiveness of written style; and quality and effectiveness of oral presentation at the Annual Meeting of the Association of American Geographers. Finally, Katherine Hankins was awarded by The National Council for Geographic Education the 2009 best college/university article in *Journal of Geography*.

Dollar level and source of sponsored research
Faculty research over the past three years has been sponsored by several large external grants and many internal grants, and multiple external grants are in place to fund research over the next few years (Table F3). A National Science Foundation (NSF) sub-award (Microstructural analyses of gouge from the San Andreas Fault Observatory at Depth (SAFOD) borehole in relation to brittle fault mechanics: A collaborative study) totaling $171,230, a U.S. Department of Energy (U.S. DOE) award (The natural enrichment of stable Cs in weathered micaceous materials and its implications for Cs-137 sorption) totaling $149,617, and a National Aeronautics and Space Administration (NASA) Global Climate Change Education award (Creating an enduring legacy of exemplary global climate change education for secondary science teachers and underserved students in Georgia) totaling $499,945 have supported basic and pedagogically-based research by faculty members during the past three years. The NSF sub-award does not extend beyond FY 2010. The U.S. DOE award, which is housed in the Department of Geosciences, will continue through FY 2011. The NASA award will continue through FY 2012, but the Department of Geosciences has and will not receive indirect funds from this award because it is housed in the Department of Physics and Astronomy. Lastly, faculty members were awarded 10 internal grants (e.g., research initiation grants) totaling $102,920 over the past three years.
Several external grants are in place to fund research over the next few years (Table F3). Four awards housed in the department are from NSF, the U.S. Geological Survey (USGS), the American Chemical Society (ACS), and the Georgia Department of Transportation (GDOT). The NSF award (RAPID: Enhancing biodegradation of Deepwater Horizon contaminant hydrocarbons in Louisiana salt marsh using high layer charge montmorillonites) totals $61,537 and extends into FY 2012. The USGS award (Reservoir characterization for carbon sequestration in the state of Georgia: Contribution to the national geologic carbon dioxide sequestration assessment) totals $50,000 and is for FY 2011. The ACS award (Experimental synthesis of authigenic clay minerals: Implications for lacustrine deposition and diagenesis) totals $65,000 and extends into FY 2015. The GDOT award (A Web-based petrologic and geochemical information system of aggregate sources) totals $74,982 and extends through FY 2012. The final award (Examining the mechanisms that explain variation in health outcomes within disadvantaged neighborhoods), which is housed in the Department of Sociology, is from the National Institute of Health and totals $366,000 and extends into FY 2012. While the above awards are respectable and will enhance research in the department, Geosciences faculty will continue to seek large (e.g., ≥ $500,000) external grants housed in the department.

Service and outreach contributions

Faculty members have been very active in service to their respective disciplines. During the past three years, faculty members reviewed 60 manuscripts submitted for publication in journals. Therefore, tenure-track faculty reviewed between one and two manuscripts per year. In addition, the faculty reviewed approximately two NSF proposals per year. Two editors in chief reside among the faculty for *Cartographica* and *Earth Science Informatics*. Faculty members also have served on the editorial boards/executive committees of the following journals: *Elements*,

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**Table F3. Sponsored research (on-going or awarded in FY 2008 – FY2010 or awarded in 2010) in the Department of Geosciences**

<table>
<thead>
<tr>
<th>Type</th>
<th>Geosciences Investigator(s) and Role(s)</th>
<th>Sponsor</th>
<th>Year Awarded</th>
<th>Total Amount</th>
<th>Direct Costs (Geosciences)</th>
<th>Indirect Costs (Geosciences)</th>
</tr>
</thead>
<tbody>
<tr>
<td>External</td>
<td>Babaie (Co-I)</td>
<td>National Science Foundation</td>
<td>2007</td>
<td>$171,230</td>
<td>$36,237</td>
<td>$18,306</td>
</tr>
<tr>
<td>External</td>
<td>Elliott (PI), Krogsd (Co-I), Rose (Co-I)</td>
<td>U.S. Department of Energy</td>
<td>2009</td>
<td>$149,617</td>
<td>$103,541</td>
<td>$46,076</td>
</tr>
<tr>
<td>External</td>
<td>Diem (Co-I), Elliott (Co-I)</td>
<td>National Aeronatics and Space Administration</td>
<td>2009</td>
<td>$499,945</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>External</td>
<td>Hankins (Co-I)</td>
<td>National Institute of Health</td>
<td>2010</td>
<td>$366,000</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>External</td>
<td>Deocampo (PI)</td>
<td>American Chemical Society</td>
<td>2010</td>
<td>$65,000</td>
<td>$65,000</td>
<td>$0</td>
</tr>
<tr>
<td>External</td>
<td>Deocampo (PI), Dai (Co-I)</td>
<td>Georgia Department of Transportation</td>
<td>2010</td>
<td>$74,982</td>
<td>$52,017</td>
<td>$22,915</td>
</tr>
<tr>
<td>External</td>
<td>Deocampo (PI), Elliott (Co-I), Krogstad (Co-I), Rose (Co-I)</td>
<td>National Science Foundation</td>
<td>2010</td>
<td>$61,537</td>
<td>$42,586</td>
<td>$18,951</td>
</tr>
<tr>
<td>External</td>
<td>Deocampo (PI)</td>
<td>U.S. Geological Survey</td>
<td>2010</td>
<td>$50,000</td>
<td>$34,601</td>
<td>$15,397</td>
</tr>
<tr>
<td>Internal</td>
<td>Babaie (PI)</td>
<td>Georgia State University, Research Team Grant</td>
<td>2008</td>
<td>$15,000</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Internal</td>
<td>Deocampo (PI)</td>
<td>Georgia State University, Research Initiation Grant</td>
<td>2008</td>
<td>$10,000</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Internal</td>
<td>Krogstad (PI)</td>
<td>Georgia State University, Research Initiation Grant</td>
<td>2008</td>
<td>$10,000</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Internal</td>
<td>Roy (PI)</td>
<td>Georgia State University, Research Initiation Grant</td>
<td>2008</td>
<td>$10,000</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Internal</td>
<td>Clayton (PI)</td>
<td>Georgia State University, Research Initiation Grant</td>
<td>2008</td>
<td>$9,720</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Internal</td>
<td>Hankins (PI)</td>
<td>Georgia State University, Center for Metropolitan and Neighborhood Studies Research Grant</td>
<td>2009</td>
<td>$3,200</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Internal</td>
<td>Dixit (PI)</td>
<td>Georgia State University, Research Initiation Grant</td>
<td>2009</td>
<td>$10,000</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Internal</td>
<td>Diem (PI)</td>
<td>Georgia State University, STEM Faculty Fellowship</td>
<td>2009</td>
<td>$15,000</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Internal</td>
<td>Dai (PI)</td>
<td>Georgia State University, Research Initiation Grant</td>
<td>2010</td>
<td>$10,000</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Internal</td>
<td>Hankins (PI)</td>
<td>Georgia State University, Research Initiation Grant</td>
<td>2010</td>
<td>$10,000</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>
hydrological processes, and tipularia. another faculty member is the founder and organizer of the greater atlanta geomorphology and hydrology research conference. other service activities have included being the chair, vice-chair, and board member of divisions/specialty groups of the association of american geographers and the geological society of america.

faculty members also have contributed substantially to community outreach. three faculty members have been involved with the science olympiad, with two faculty members consistently supervising events for the middle school competition at the regional-level. in addition, a faculty member has led a geology field trip for local middle school students. the department also has strong ties to the georgia botanical society: a faculty member has been the president of the society as well as an instructor for the society. that same faculty member has developed and taught a masters naturalist class on plant communities administered by the university of georgia cooperative extension. faculty members also have reviewed materials for the following organizations/agencies: upper chattahoochee riverkeeper, city of atlanta, georgia department of natural resources environmental protection division, and the university of georgia cooperative extension.

section g: resource adequacy

faculty resources

geosciences faculty generates a considerable number of credit hours at the undergraduate and graduate levels relative to peer departments (table b8). the numbers of undergraduate and graduate students enrolled and taught in core classes increased substantially over the self-study period (table b5), leading to corresponding increases in both total annual credit hours and the number of credit hours taught by each faculty category (table b5). at the undergraduate level, most credit hour generation is accomplished in introductory courses, much of which by junior and senior lecturers. in particular, geography 1112, geography 1113, and geology 2001 fill quickly and have consistently had unmet demand.

while the department desires to minimize reliance on visiting faculty, there was an increasing reliance on those categories of instructors over the past the three years (table g1). instruction in the department is mostly achieved by twelve permanent, full-time faculty members (including three lecturers): approximately 86% of the department’s credit hours were generated by that faculty. the number of credit hours generated by permanent, full-time faculty increased for all course categories from fy 2008 to fy 2010. nevertheless, for all curricula levels, except for graduate courses, the percent increase in credit hours generated by visiting faculty outpaced the percent increase in credit hours generated by permanent, full-time faculty. active searches are underway for one tenure-track faculty member in geosciences education, which has been vacant for over three years, and one full time lecturer. these hires will help to reduce the reliance on visiting instructors.
Table G1. Credit-hour generation by permanent, full-time faculty (FT) and part-time faculty (PT), FY 2008 – FY 2010

<table>
<thead>
<tr>
<th>FY</th>
<th>Total (FT)</th>
<th>Total (PT)</th>
<th>UG Core (FT)</th>
<th>UG Core (PT)</th>
<th>UG Upper (FT)</th>
<th>UG Upper (PT)</th>
<th>Graduate (FT)</th>
<th>Graduate (PT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>13,683</td>
<td>1,603</td>
<td>11,292</td>
<td>1,371</td>
<td>1,129</td>
<td>104</td>
<td>1,150</td>
<td>128</td>
</tr>
<tr>
<td>2009</td>
<td>14,007</td>
<td>2,528</td>
<td>11,702</td>
<td>2,164</td>
<td>1,000</td>
<td>206</td>
<td>1,177</td>
<td>158</td>
</tr>
<tr>
<td>2010</td>
<td>15,109</td>
<td>2,763</td>
<td>11,913</td>
<td>2,595</td>
<td>1,335</td>
<td>164</td>
<td>1,455</td>
<td>4</td>
</tr>
<tr>
<td>Increase 2008 - 2010</td>
<td>10%</td>
<td>72%</td>
<td>5%</td>
<td>89%</td>
<td>18%</td>
<td>58%</td>
<td>27%</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Administrative resources

The department has two permanent office staff, a laboratory coordinator, an intermediate PC systems specialist, and one student worker (15 hours/week). Our two staff members are charged with the financial management (internal and external funding) and enrollment activities in the department. Basirat Lawal, our administrator coordinator, is exceptionally skilled and is a recent recipient of the College of Arts and Sciences Outstanding Junior Staff Award. Given recent increases in external funding and student enrollment, our office staff is currently overburdened and could use additional support. Faculty survey responses suggest that there is some dissatisfaction with the availability of clerical support. For comparison purposes, a neighboring academic unit, Anthropology, has three full-time office staff members serving 10 faculty members.

Technology support

Computer support in the Department of Geosciences is carried out by Philip Jack Reed. His support for laboratory technology, faculty member needs, and for office staff has been excellent. More recently, IS&T requested to buy out 20% of Mr. Reed’s salary to run the Visualization Wall in the Petit Science Building. This request substantiates Mr. Reed’s competence and ability to assist with geo-visualization technologies (e.g., the new Visualization Wall) for the department and other units in the university (e.g., Office of the President). However, the reduction in Mr. Reed’s availability to the department warrants additional internal computer staff, particularly considering the increasing number of credit hours Mr. Reed is asked to assist. The faculty appreciates greatly Mr. Reed’s efforts and recommends additional part-time computer assistance.

Space resources

The department occupies approximately 13,000 square feet in Kell Hall, 3,700 square feet in Sparks Hall, and 1,500 square feet in Arts and Humanities. Several issues arise regarding space adequacy: (1) outdated or inadequate space for wet labs in Kell Hall, except for the ICPMS lab; (2) no fume hoods, except for the ICPMS lab; (3) a difficult to find and insufficiently large GIS laboratory facility, thereby making it challenging to promote GIS/cartographic work and support classroom needs; (4) a grossly-insufficient ‘make-shift’ room for computer data storage and repairs- also currently serving as Mr. Reed’s office; (5) a need for more space to teach introductory labs (i.e. 50 labs/semester that are currently handled by 530 sq ft in KH 300 and AH 405); (6) faculty offices in Kell Hall are windowless and undesirable; (7) an unattractive front
office space, which does not assist in promoting and enhancing the department; (8) a lack of professional meeting space which results in requiring guest lectures and symposia to be held in run-down classrooms (e.g., a dry lab is used for formal invited lectures); (9) a lack of contiguous faculty offices, which affects the connectivity and collegiality of the department; (10) insufficient storage; and (11) insufficient social gathering space (e.g., there is a need for a larger version of our well-used “Green Room” occupied by majors in the department). Many of these issues are under discussion as plans are being made to move faculty offices, introductory classrooms, meeting space, and the department front office from the third floor of Kell Hall to the Sun Trust Building, and to provide up-to-date laboratory space on the fifth and sixth floors of Kell Hall. We do not envision the need to move the existing teaching lab in Arts and Humanities, which, as noted below, is a top-notch instructional space.

Laboratory resources

While the ICPMS lab (funded both NSF and GSURF in the middle 1990s) has all necessary functions (i.e. hoods and chemical storage), other research labs in the department are insufficient. Most research labs are “wet” labs and are badly under-maintained in that they do not have fume hoods nor do they house lines for deionized water. There is not effective sample storage space; thus, many labs fill up with samples from former projects. The rock preparation (e.g., saws, vacuum pumps, thin section, lap wheels, etc.) room has ineffective ventilation and old equipment that needs replacement. Given the diverse laboratory space housed in the department and ongoing vehicle maintenance needed for sample collection and field instruction, a geosciences technician is badly needed to help with repairs and to ensure the smooth functioning of our labs and physical resources.

Recent enrollment increases have forced the department to use classroom space for the teaching labs. For example, introductory geology and geography labs are taught in three different rooms (Kell 300, Sparks 369, and Arts and Humanities 405) due to high enrollments and the need to field 50 labs per semester. Arts and Humanities 405 is a superb facility that has reconfigured to suit the new NASA-funded labs used in Geography 1112; thus, this course does not require new laboratory space. Kell 300 and Sparks 369 are classrooms used to teach other introductory courses and preclude our ability to incorporate experimentation into the lab courses. The plans for new space in Kell Hall include 2,700 square feet for introductory labs (i.e. three labs at 900 square feet each).

The department’s laboratory coordinator, Atieh Tajik, oversees the operation of all introductory labs. Approximately 2,600 students per year are enrolled in those labs. This position was created by the past chair and appears to be functioning well, though additional support – particularly in light of large increases in credit hour generation – is warranted.

GSU Foundation resources

The amount of Foundation resources has been steadily decreased from $10,000 to less than $2,000 in recent years. Resources have been used to hire new faculty members, maintain laboratories and vehicles, and to support student/faculty research expenditures (conferences, journal page charges, supplies, and other expenses). The department has some alumni and faculty support. There is one scholarship, the Ernst Fritz Endowment, for the geology field course and some individual sales/service accounts for cartography and analytical services. These sales/service accounts generate modest amounts of funding (i.e. $2,000/year).
Library resources

The library report was compiled by Joseph Hurley of the University Library, our liaison to the GSU Libraries. The library’s number of monograph titles acquired during FY 2010 for the relevant call number ranges far exceeded that of the department’s three peer institutions. No direct comparison is made to journal holdings, though recent decreases in GSU library journal support makes it more challenging to stay competitive with other leading research institutions (e.g. elimination of subscriptions to leading journals in our fields). Mr. Hurley’s report stresses the availability of the Federal Depository with access to USGS publications, strong book collection in several areas (human geography, geochemistry, and hydrogeology) and cites the need to build collections in areas of GIS and urban geographies (the latter being of interest to our strategic plan, the former having widespread use at GSU including the Partnership in Urban Health).

Section H: Goals and Objectives

The ultimate aspiration of the Department of Geosciences is to become one of the nation’s premiere Geosciences departments. Therefore, the prioritized goals for the department are as follows: (1) merge the department’s programs; (2) increase the number of majors and degrees conferred; (3) increase the amount external funding; (4) maintain and increase the number of graduate faculty; (5) improve student-assessment procedures; (6) improve the department’s physical space; and (7) assure faculty retention.

Goal 1. Merge the department’s programs

The department in its current state does not represent a fully realized merger of the Geography and Geology programs. Therefore, the department is in the process of changing the degrees and associated curricula. The department will offer graduate and graduate degrees in Geosciences, rather than in both Geography and Geology.

The first objective is to develop new undergraduate concentrations within the Geosciences degree. The proposed concentrations are Geography, Geology, Environmental Geosciences, and Urban Studies. The two new concentrations, Environmental Geosciences and Urban Studies, will fill some major needs in the environmental sciences, thereby further centralizing our mission. It is desired that the Geography and Environmental Geosciences concentrations will have both a B.A. and a B.S. option, while the Geology concentration will be restricted to a B.S. and the Urban Studies concentration will be restricted to a B.A.

The second objective is to modify the graduate programs. The proposed M.S. degree will have concentrations in Geography and Geology. The graduate certificate in GIS will be retained, especially since it is a projected growth area (see Goal 2). The Hydrogeology certificate will be discontinued due to a lack of student interest and lack of faculty needed to field the certificate.

Goal 2. Increase the number of majors and degrees conferred

The department will strive to increase significantly the number of undergraduate and graduate majors by the time the next self-study is conducted. Increases in the number of majors are anticipated to effect the following changes: (1) improve the department’s ability to serve upper-level undergraduate and graduate students by ensuring minimum enrollment levels in upper-level courses are maintained; (2) improve standards for instruction by graduate students by
making teaching assistant positions competitive; and (3) increase our service to the university community by increasing student-faculty ratios. In FY 2010, the department had 119 undergraduate majors and 46 graduate majors. The undergraduate student/tenure-track faculty member ratio was 7.9, and the graduate student/tenure-track faculty member ratio was 3.1. The department aims to increase the ratios to 20.0 and 5.0, respectively: the former ratio is the ratio enjoyed by the Department of Anthropology, which is a small department known for its robust undergraduate program, and the latter ratio applies to many departments in the College of Arts and Sciences at the present time. Therefore, the target numbers of undergraduate majors and graduate majors for FY 2018 are 300 and 75, respectively.

The first objective is to make the undergraduate degree more attractive to potential majors. The change in structure of the undergraduate programs from the current two programs (Geography and Geology) to a four concentration (Geography, Geology, Environmental Geosciences, and Urban Studies) system should increase the number of undergraduate majors. For example, in the Department of Geosciences at University of Missouri – Kansas City, which has Geography, Geology, and Environmental Studies as options, approximately 70% of the 149 students in FY 2010 were majoring in Environmental Studies. Therefore, if GSU Geosciences had the two additional concentrations (i.e. Environmental Geosciences and Urban Studies) it desires, we suspect that there would be 300 majors within a few years of the implementation of the new undergraduate degree structure. A specific course modification that could help meet the above objective it to replace Geography 2206 as an Area F requirement with a proposed course, Urban Environments, which would draw in a wide variety of students and expose students to the range of faculty interests in the department.

The second objective is to better advertise the graduate programs. The mean number of applicants to the Geography M.A., Geology M.S., and GIS certificate programs over the past three years has been 14, 11, and 12, respectively. With GIS becoming more prevalent in many different sectors and GSU located in the center of a large metropolitan area, the number of applicants to the GIS certificate program should be several dozen, rather than about a dozen. The Master’s programs need to be advertised more intensively both regionally and nationally.

The third objective is to increase the ratio of enrolled to accepted students for the Geography M.A. program. The current ratio for the program is 0.49, while the mean value for M.A. programs university-wide is 0.59. Therefore, the Geography M.A. program should be enrolling at least 59% of the accepted students. One way of increasing the ratio is to make the graduate-student stipends more competitive with stipends at other universities: the current stipend is only $3,000 per semester. Adding discussion sections to Geography 1101 and thus making it a four-credit course would make the program more appealing to graduate students whose focus area is human geography with those students then having the opportunity to teach human geography discussion sections rather than physical geography labs.

The fourth objective is to increase communication with undergraduate and graduate majors. Effective and consistent communication between the advisers and the students is needed to ensure that students graduate in a timely manner. If it is not already there, all information pertinent to majors should be placed on the department’s Web site. In addition, up-to-date electronic mailing lists should be created so students can be notified of upcoming deadlines, events, changes to course offerings, etc. For example, the undergraduate adviser should be notified immediately when a student has declared Geosciences as his/her major.

The fifth objective is to offer graduate-only courses more frequently, and to improve the diversity of these course offerings. This was a major complaint of current and former graduate
students via the surveys. The objective can only be met if the number of graduate students in the department increases.

Goal 3. Increase the amount of external funding

No specific objectives exist for this goal, but one recommendation is to have each faculty member formally set annual funding targets appropriate to supporting a research group and associated facilities in their sub-discipline. Funding levels vary across the Geosciences; therefore, each tenure-track faculty member is not necessarily expected to obtain large, external grants. Nevertheless, each tenured/tenure-track faculty member should, as appropriate, strive to obtain external funding to (1) support one or more graduate research assistants, which is linked to the previous goal; (2) attract post-doctoral scholars who can advance the faculty member’s research agenda; and (3) build the field and lab research infrastructure necessarily for a vibrant research community.

Goal 4. Maintain and increase the number of graduate faculty

The department strives to recruit and retain faculty of the highest caliber to achieve the dual objectives of (1) developing a forward-looking, cutting edge, and funded research community focused on critical geoscientific issues, and (2) supporting undergraduate and graduate curricula that are rooted in disciplinary tradition and that reach for the boundaries of knowledge. Developing a specific hiring plan toward these ends will depend on a departmental strategic plan; however, several possible areas of emphasis are clear now that can achieve these objectives and that are aligned with priorities articulated in the new University Strategic Plan. Building on strategic strengths, these areas can include the following examples of areas focused on human-environment interactions, especially in the global urban environment: (1) mineralogy (e.g., medical mineralogy); (2) petrology (e.g., minerals exploration, engineering geology, etc.); and (3) urban environments.

Goal 5. Improve student-assessment procedures

The objective is to restructure our learning-outcomes assessments. As can be discerned by reading Section D of the report, there is a need for more thorough and consistent analysis of student learning and the continual formation of action plans to ensure steady improvement towards instructional goals. Therefore, a department-level learning outcomes committee will be established.

Goal 6. Improve the department's physical space

The first objective is to obtain physical space that will enable faculty offices, break rooms, and staff offices to be contiguous. At the present time, the above spaces exist on either the third floor of Kell Hall or on the third and fourth floors of Sparks Hall. There are plans to demolish Sparks Hall in the next few years; in addition, the third floor of Kell Hall will be transformed into classrooms. Therefore, the department is being forced to occupy new space. A sensible option is to relocate offices, break rooms, classrooms, and computer labs to the SunTrust Building. The department needs an attractive reception area with a full-time staff member ready to field questions from visitors and do office work. The current set-up of the Department of Anthropology, which occupies the same space as some Geosciences office on the third floor of Sparks Hall, is a good example of what the Department of Geosciences desires. The department needs an attractive, functional lecture hall for hosting invited speakers and other departmental
functions, including attracting new hires. The current space for such events is in old, dark, and unattractive and reflects poorly on the department.

The second objective is to relocate departmental classrooms and the GIS laboratories to either the aforementioned contiguous space or nearby space. In order to enhance the community atmosphere of the department, it would be optimal if most upper-division Geography and Geology courses could be taught in departmental classrooms located near faculty offices and a proposed student break room (i.e., a room similar to the “Green Room” described in Section G). With the increasing popularity of GIS, it is desirable to have two GIS laboratories, with one dedicated to the instruction of GIS, remote sensing, digital cartography, and quantitative spatial analysis, and the other devoted to research.

The third objective is to move all research labs and most instructional labs to the fifth and sixth floors of Kell Hall. For example, separate lab rooms would exist for Geography 1113, Geology 1121K, and Geology 1122K. This would improve our ability to field a large number of intro labs without time/space conflicts. We could also keep course-specific items in the classrooms or in adjoining storage space. Keeping these laboratories in roughly contiguous space near upper-level laboratories (e.g., Sedimentology and Mineralogy) will allow easy occasional sharing of materials such as special specimens and thin-sections for the introductory students.

The fourth objective is to retain 405 Arts and Humanities as the Geography 1112 lab room. This space, which is approximately 1,500 square feet with 10-foot ceilings, has been ideal for instruction of the Geography 1112 labs. The room is equipped with 15 high-end PCs with large, dual monitors. A locked storage room (~200 square feet) exists within the lab room.

Goal 7. Assure faculty retention

There has been considerable turnover of Geographers and Geologists since the self studies by the Department of Anthropology and the Department of Geology. Twelve faculty members have departed GSU since those self studies, with only two departures (Truman Hartshorn and Timothy La Tour) due to retirements. Two faculty members (Paul Knapp and Susan Walcott) were actively recruited from GSU. Two faculty members (William Fritz and David Vanko) sought senior administrative positions outside GSU. Three faculty members (Pamela Burnley, Beth Christenson, Dona Stewart, and Zhi-Yong Yin) left on their own volition. Finally, the contracts of two faculty members (Suvasis Dixit and Mohamad Ghazi) were not renewed.

While many of the above departing faculty members have been replaced, the current situation warrants improved measures to increase faculty retention. The main objective is to maintain a stable and productive cohort. Therefore, we request the college/university backing to help find resources when requested to improve the circumstances (e.g., salaries) of Geosciences faculty members.
Appendix B1: Rationale for choices of peer programs

Geosciences departments at Florida Atlantic University, University of Arkansas, and University of Missouri – Kansas City were chosen as peer departments because they matched or were very similar to the Department of Geosciences at Georgia State University in the following areas: (1) research universities with high research activity per the Carnegie Classification of Institutions of Higher Education; (2) number of tenure-track Geography faculty; (3) number of tenure-track Geology faculty; (4) Bachelor’s programs; and (5) Master’s programs.
Appendix B2: Organization of unit governance and committee structure

Department of Geosciences

Organizational Chart
November, 2010
GEOSCIENCES DEPARTMENT STANDING COMMITTEES
Academic Year 2010-2011
* denotes chair/co-chair.

Graduate Programs: Crampton*, Babaie, Deocampo, and Clayton

Undergraduate Programs: Diem, Kiage, Rose*

Executive: Allensworth, Krogstad

Appeals: Rose, Clayton, Hankins, Kiage, Krogstad*

Assessment: Elliott*, Members of Graduate Programs, Undergraduate program committees.

Retention Report: Diem

Academic Program Review: Rose, Edwards, Diem*

Web Site (Editorial): Reed, Roy

Library: Diem

Space: Allensworth, Terrell

Safety: Terrell*, Elliott, Krogstad

Computer and Technology: Babaie*, Crampton, Reed, Dai

Alumni Relations: Rose*, Hankins

Student Recruiting: Hankins, Rose, Deocampo*, Kiage, Roy, Everyone.

Honors and Awards: Diem

Rock Prep lab: Babaie

Introductory Lab Courses: Tajik, Allensworth, Clayton,* Diem, Edwards, Terrell

P&T 1: All Tenured faculty members.
P&T 2: All Tenured faculty members having rank of Professor.

Undergraduate Council: Diem, Rose  Graduate Council: Crampton, Babaie

University Senate Representatives: Elliott (09-11); Crampton (08-10)

Professional Education Council: Deocampo  STEM College Working Group: Elliott

CTW: Critical Thinking Writing Representative: Hankins.

TT Faculty Search: Deocampo, Carruth (Neuroscience Institute), Clayton
Lecturer Search  Rose*, Edwards, Terrell
Appendix B3: Unit bylaws if available

This appendix is not applicable to the Department of Geosciences.
Appendix B4: Current faculty roster that indicates names, hire date, entry rank, current rank, tenure status, and full or part-time status of faculty members

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<th>Hire Date</th>
<th>Entry Rank</th>
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<th>Tenure Status</th>
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Appendix B5: Center report(s) if relevant

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</table>

*Includes instructor, lecturer, clinical, research
**Includes deans, assoc. deans, etc.
***Includes provosts, assoc. provosts, etc.
### Table B-3a

Program Types by Majors and Concentrations and Unduplicated Number (Headcount) of Major Students and Degrees Conferred

**FY 2008** - **FY 2010**

**GEO SCIENCES**

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<th>Major</th>
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Appendix B8a: Retention and graduation rates of cohorts of juniors by degree and major

Retention and Graduation Rates by Degree & Major

### Fall 03 Cohort Juniors (60-75 total credit hours at start of term)

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<th>Total Graduated Fall 05</th>
<th>Total Graduated Fall 06</th>
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<th>Total Graduated Fall 06</th>
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## Appendix B8b: Retention and graduation rates cohort of graduate students by degree and major

### Fall 2020 Graduate Students

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### Fall 2022 Graduate Students

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### Fall 2023 Graduate Students

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### Fall 2024 Graduate Students

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### Fall 2025 Graduate Students

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### Fall 2028 Graduate Students

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### Fall 2029 Graduate Students

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Appendix B9: Credit hours taught by faculty by level and faculty type

### TABLE B-4
GEOSCIENCES

**FY 2008 CREDIT HOURS TAUGHT BY FACULTY BY LEVEL AND FACULTY TYPE**

<table>
<thead>
<tr>
<th>FACULTY TYPE</th>
<th>UGRD</th>
<th>UGRAD CORE</th>
<th>UGRAD LOWER</th>
<th>UGRAD UPPER</th>
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**FY 2009 CREDIT HOURS TAUGHT BY FACULTY BY LEVEL AND FACULTY TYPE**

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**FY 2010 CREDIT HOURS TAUGHT BY FACULTY BY LEVEL AND FACULTY TYPE**

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<tr>
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<td>1,499</td>
<td>1,459</td>
<td>17,872</td>
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*Includes deans, assoc. deans, etc.
**Includes provosts, assoc. provosts, etc.
Appendix B10: Average annual number of faculty members by rank and status, average annual credit hours by level, and average annual credit hours by faculty type

### Average Annual # of faculty members by rank and status

<table>
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<th>3 YR AVG</th>
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<td>6</td>
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<td>6.0</td>
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<tr>
<td>T Ast P</td>
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<td>0</td>
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<td>0.0</td>
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<tr>
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### Average Annual Credit Hours by Level

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<th>3 YR AVG</th>
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<tbody>
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<td>UG Core</td>
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<td>13,866</td>
<td>14,508</td>
<td>13,879</td>
</tr>
<tr>
<td>UG Lower</td>
<td>112</td>
<td>128</td>
<td>406</td>
<td>215</td>
</tr>
<tr>
<td>UG Upper</td>
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<td>1,206</td>
<td>1,499</td>
<td>1,313</td>
</tr>
<tr>
<td>Grad</td>
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<td>1,335</td>
<td>1,459</td>
<td>1,357</td>
</tr>
<tr>
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<td>16,535</td>
<td>17,872</td>
<td>16,564</td>
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</table>

### Average Annual Credit Hours by Faculty Type

<table>
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<th>3 YR AVG</th>
</tr>
</thead>
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<td>14,266.3</td>
</tr>
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<td>16,535</td>
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</tbody>
</table>

*Includes deans, assoc. deans, etc.

**Includes provosts, assoc. provosts, etc.
Appendix D1: Learning outcome statements and assessment plans

Georgia State University

Detailed Assessment Report
2009-2010 Geography BA

Mission/Purpose

The geography program of the Department of Geosciences presents an integrative perspective on the relations among social, political, economic, and physical phenomena occurring across space. The program is committed to teaching the concepts and research methods of the discipline in order to prepare geography majors for professional careers or advanced study or both. Students acquire geographic knowledge and thinking skills in order to understand the complex nature of the human and environmental patterns found in the world around them. Therefore, the program is committed to excellence in both the theoretical and applied arenas. Through scholarship, teaching, and service, the geography program of the Department of Geosciences is dedicated to improving our community, nation, and world.

Student Learning Outcomes, with Any Associations and Related Measures, Achievement Targets, Findings, and Action Plans

O 1: Foundational-Knowledge Acquisition

Students demonstrate knowledge of key geographical concepts, theories, methods, and facts.

Related Measures:

M 1: GEOG 4518 (Digital Cartography) A

Source of Evidence: Writing exam to assure certain proficiency level
Student performance on final examination in Geography 4518 (Digital Cartography). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

Achievement Target:

The mean score for this measure should equal or exceed 3.5.

Findings (2009-2010) - Achievement Target: Met

There were nine Geography majors in the course, and the mean score for those majors was 4.1
Related Action Plans (by Established cycle, then alpha):

For full information, see the Action Plan Details section of this report.

Increase the number of measures for certain outcomes
Established in Cycle: 2008-2009

It has been determined that the program needs at least six measures per learning outcome. There were 82 outcome/measure combi...

M 4: GEOG 4520 (Quantitative Spatial Analysis) A
This measure is based on student responses on final examination in Geography 4520 (Quantitative Spatial Analysis). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

Source of Evidence: Writing exam to assure certain proficiency level

Achievement Target:

The mean score for this measure should equal or exceed 3.5.

Findings (2009-2010) - Achievement Target: Met
There were 12 Geography majors in the course, and the mean score for those majors was 3.7

Related Action Plans (by Established cycle, then alpha):

For full information, see the Action Plan Details section of this report.

Increase the number of measures for certain outcomes
Established in Cycle: 2008-2009

It has been determined that the program needs at least six measures per learning outcome. There were 82 outcome/measure combi...

M 5: GEOG 4520 (Quantitative Spatial Analysis) B
This measure is based on student statements in final assignment in Geography 4520 (Quantitative Spatial Analysis). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

Source of Evidence: Written assignment(s), usually scored by a rubric

Achievement Target:

The mean score for this measure should equal or exceed 3.5.
Findings (2009-2010) - Achievement Target: Met
There were 12 Geography majors in the course, and the mean score for those majors was 3.8.

Related Action Plans (by Established cycle, then alpha):
For full information, see the Action Plan Details section of this report.

Increase the number of measures for certain outcomes
Established in Cycle: 2008-2009

It has been determined that the program needs at least six measures per learning outcome. There were 82 outcome/measure combi...

M 8: GEOG 4644 (Environmental Conservation) B
This measure is based on student performance on term paper in Geography 4644 (Environmental Conservation). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

Source of Evidence: Project, either individual or group

Achievement Target:
The mean score for this measure should equal or exceed 3.5.

Findings (2009-2010) - Achievement Target: Met
There were seven Geography majors in the course, and the mean score for those majors was 4.6.

Related Action Plans (by Established cycle, then alpha):
For full information, see the Action Plan Details section of this report.

Increase the number of measures for certain outcomes
Established in Cycle: 2008-2009

It has been determined that the program needs at least six measures per learning outcome. There were 82 outcome/measure combi...

M 9: GEOG 4644 (Environmental Conservation) C
This measure is based on student performance on oral presentation and class discussion in Geography 4644 (Environmental Conservation). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

Source of Evidence: Presentation, either individual or group
Achievement Target:

The mean score for this measure should equal or exceed 3.5.

Findings (2009-2010) - Achievement Target: Met

There were seven Geography majors in the course, and the mean score for those majors was 4.9.

Related Action Plans (by Established cycle, then alpha):

For full information, see the Action Plan Details section of this report.

Increase the number of measures for certain outcomes
Established in Cycle: 2008-2009

It has been determined that the program needs at least six measures per learning outcome. There were 82 outcome/measure combi...

M 10: GEOG 4764 (Urban Geography) A

Source of Evidence: Written assignment(s), usually scored by a rubric
This measure is based on student performance on weekly writing assignments in Geography 4764 (Urban Geography). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

Achievement Target:

The mean score for this measure should equal or exceed 3.5.

Findings (2009-2010) - Achievement Target: Met

There were eight Geography majors in the course, and the mean score for those majors was 3.9.

Related Action Plans (by Established cycle, then alpha):

For full information, see the Action Plan Details section of this report.

Increase the number of measures for certain outcomes
Established in Cycle: 2008-2009

It has been determined that the program needs at least six measures per learning outcome. There were 82 outcome/measure combi...
M 11: GEOG 4764 (Urban Geography) B

Source of Evidence: Writing exam to assure certain proficiency level
This measure is based on student performance on midterm and final examinations in Geography 4764 (Urban Geography). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

Achievement Target:

The mean score for this measure should equal or exceed 3.5.

Findings (2009-2010) - Achievement Target: Met
There were eight Geography majors in the course, and the mean score for those majors was 4.1.

Related Action Plans (by Established cycle, then alpha):
For full information, see the Action Plan Details section of this report.

Increase the number of measures for certain outcomes
Established in Cycle: 2008-2009

It has been determined that the program needs at least six measures per learning outcome. There were 82 outcome/measure combi...

M 12: GEOG 4764 (Urban Geography) C

Source of Evidence: Project, either individual or group
This measure is based on student performance on final project in Geography 4764 (Urban Geography). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

Achievement Target:

The mean score for this measure should equal or exceed 3.5.

Findings (2009-2010) - Achievement Target: Met
There were eight Geography majors in the course, and the mean score for those majors was 4.0.

Related Action Plans (by Established cycle, then alpha):
For full information, see the Action Plan Details section of this report.
Increase the number of measures for certain outcomes  
*Established in Cycle: 2008-2009*

It has been determined that the program needs at least six measures per learning outcome. There were 82 outcome/measure combi...

**M 13: GEOG 4778 (Political Geography) A**

*Source of Evidence:* Performance (recital, exhibit, science project)  
This measure is based on student performance on oral participation in Geography 4778 (Political Geography). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

**Achievement Target:**

The mean score for this measure should equal or exceed 3.5.

**Findings (2009-2010) - Achievement Target: Met**

There were eight Geography majors in the course, and the mean score for those majors was 4.5.

**Related Action Plans (by Established cycle, then alpha):**

For full information, see the *Action Plan Details* section of this report.

Increase the number of measures for certain outcomes  
*Established in Cycle: 2008-2009*

It has been determined that the program needs at least six measures per learning outcome. There were 82 outcome/measure combi...

**M 14: GEOG 4778 (Political Geography) B**

*Source of Evidence:* Written assignment(s), usually scored by a rubric  
This measure is based on student performance on in-class assignments in Geography 4778 (Political Geography). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

**Achievement Target:**

The mean score for this measure should equal or exceed 3.5.
Findings (2009-2010) - Achievement Target: Met  
There were eight Geography majors in the course, and the mean score for those majors was 4.0.

Related Action Plans (by Established cycle, then alpha):

For full information, see the Action Plan Details section of this report.

Increase the number of measures for certain outcomes  
Established in Cycle: 2008-2009

It has been determined that the program needs at least six measures per learning outcome. There were 82 outcome/measure combi...

M 17: GEOG 4784 (Climatic Change) B

Source of Evidence: Writing exam to assure certain proficiency level  
This measure is based on student performance on take-home essay examinations in Geography 4784 (Climatic Change). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

Achievement Target:

The mean score for this measure should equal or exceed 3.5.

Findings (2009-2010) - Achievement Target: Met  
There were eight Geography majors in the course, and the mean score for those majors was 3.9.

M 19: GEOG 4830 (Senior Seminar) A

Source of Evidence: Written assignment(s), usually scored by a rubric  
This measure is based on student performance on speaker evaluation essays in Geography 4830 (Senior Seminar). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

Achievement Target:

The mean score for this measure should equal or exceed 3.5.

Findings (2009-2010) - Achievement Target: Met  
There were eight Geography majors in the course, and the mean score for those majors was 3.9.
Related Action Plans (by Established cycle, then alpha):

For full information, see the Action Plan Details section of this report.

Increase the number of measures for certain outcomes
Established in Cycle: 2008-2009

It has been determined that the program needs at least six measures per learning outcome. There were 82 outcome/measure combi...

M 20: GEOG 4830 (Senior Seminar) B

Source of Evidence: Written assignment(s), usually scored by a rubric

This measure is based on student performance on research ethics essay in Geography 4830 (Senior Seminar). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

Achievement Target:

The mean score for this measure should equal or exceed 3.5.

Findings (2009-2010) - Achievement Target: Met

There were seven Geography majors in the course, and the mean score for those majors was 3.9.

Related Action Plans (by Established cycle, then alpha):

For full information, see the Action Plan Details section of this report.

Increase the number of measures for certain outcomes
Established in Cycle: 2008-2009

It has been determined that the program needs at least six measures per learning outcome. There were 82 outcome/measure combi...

M 21: GEOG 4830 (Senior Seminar) C

Source of Evidence: Project, either individual or group

This measure is based on student performance on research project in Geography 4830 (Senior Seminar). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).
Achievement Target:

The mean score for this measure should equal or exceed 3.5.

Findings (2009-2010) - Achievement Target: Met
There were seven Geography majors in the course, and the mean score for those majors was 4.1.

O 2: Communication -- Written

Students communicate effectively using appropriate writing conventions and formats.

Associations:

General Education or Core Curriculum:
1 Written Communication

Related Measures:

M 5: GEOG 4520 (Quantitative Spatial Analysis) B
This measure is based on student statements in final assignment in Geography 4520 (Quantitative Spatial Analysis). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

Source of Evidence: Written assignment(s), usually scored by a rubric

Achievement Target:

The mean score for this measure should equal or exceed 3.5.

Findings (2009-2010) - Achievement Target: Met
There were 12 Geography majors in the course, and the mean score for those majors was 3.8.

Related Action Plans (by Established cycle, then alpha):

For full information, see the Action Plan Details section of this report.

Increase the number of measures for certain outcomes
Established in Cycle: 2008-2009

It has been determined that the program needs at least six measures per learning outcome. There were 82 outcome/measure combi...

M 10: GEOG 4764 (Urban Geography) A
Source of Evidence: Written assignment(s), usually scored by a rubric
This measure is based on student performance on weekly writing assignments in Geography 4764 (Urban Geography). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

Achievement Target:

The mean score for this measure should equal or exceed 3.5.

Findings (2009-2010) - Achievement Target: Met
There were eight Geography majors in the course, and the mean score for those majors was 4.0.

Related Action Plans (by Established cycle, then alpha):
For full information, see the Action Plan Details section of this report.

Increase the number of measures for certain outcomes
Established in Cycle: 2008-2009

It has been determined that the program needs at least six measures per learning outcome. There were 82 outcome/measure combi...

M 11: GEOG 4764 (Urban Geography) B

Source of Evidence: Writing exam to assure certain proficiency level
This measure is based on student performance on midterm and final examinations in Geography 4764 (Urban Geography). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

Achievement Target:

The mean score for this measure should equal or exceed 3.5.

Findings (2009-2010) - Achievement Target: Met
There were eight Geography majors in the course, and the mean score for those majors was 4.0.

Related Action Plans (by Established cycle, then alpha):
For full information, see the Action Plan Details section of this report.
Increase the number of measures for certain outcomes  
*Established in Cycle: 2008-2009*

It has been determined that the program needs at least six measures per learning outcome. There were 82 outcome/measure combi...

**M 12: GEOG 4764 (Urban Geography) C**

*Source of Evidence: Project, either individual or group*  
This measure is based on student performance on final project in Geography 4764 (Urban Geography). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

**Achievement Target:**

The mean score for this measure should equal or exceed 3.5.

**Findings (2009-2010) - Achievement Target: Met**  
There were eight Geography majors in the course, and the mean score for those majors was 4.0.

**M 13: GEOG 4778 (Political Geography) A**

*Source of Evidence: Performance (recital, exhibit, science project)*  
This measure is based on student performance on oral participation in Geography 4778 (Political Geography). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

**Achievement Target:**

The mean score for this measure should equal or exceed 3.5.

**Findings (2009-2010) - Achievement Target: Met**  
There were eight Geography majors in the course, and the mean score for those majors was 5.0.

**Related Action Plans (by Established cycle, then alpha):**

For full information, see the Action Plan Details section of this report.

**Increase the number of measures for certain outcomes**  
*Established in Cycle: 2008-2009*
It has been determined that the program needs at least six measures per learning outcome. There were 82 outcome/measure combi...

**M 15: GEOG 4778 (Political Geography) C**

*Source of Evidence:* Project, either individual or group
This measure is based on student performance on final project in Geography 4778 (Political Geography). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

Achievement Target:
The mean score for this measure should equal or exceed 3.5.

**Findings (2009-2010) - Achievement Target: Met**
There were eight Geography majors in the course, and the mean score for those majors was 3.9.

**M 16: GEOG 4784 (Climatic Change) A**

*Source of Evidence:* Written assignment(s), usually scored by a rubric
This measure is based on student performance on paragraphs in Geography 4784 (Climatic Change). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

Achievement Target:
The mean score for this measure should equal or exceed 3.5.

**Findings (2009-2010) - Achievement Target: Met**
There were seven Geography majors in the course, and the mean score for those majors was 3.7.

**Related Action Plans (by Established cycle, then alpha):**
For full information, see the *Action Plan Details* section of this report.

**Increase the number of measures for certain outcomes**
*Established in Cycle: 2008-2009*

It has been determined that the program needs at least six measures per learning outcome. There were 82 outcome/measure combi...

**M 17: GEOG 4784 (Climatic Change) B**
Source of Evidence: Writing exam to assure certain proficiency level
This measure is based on student performance on take-home essay examinations in Geography 4784 (Climatic Change). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

Achievement Target:

The mean score for this measure should equal or exceed 3.5.

Findings (2009-2010) - Achievement Target: Met
There were eight Geography majors in the course, and the mean score for those majors was 3.9.

Related Action Plans (by Established cycle, then alpha):

For full information, see the Action Plan Details section of this report.

Increase the number of measures for certain outcomes
Established in Cycle: 2008-2009

It has been determined that the program needs at least six measures per learning outcome. There were 82 outcome/measure combi...

M 18: GEOG 4784 (Climatic Change) C

Source of Evidence: Written assignment(s), usually scored by a rubric
This measure is based on student performance on literature-review paper in Geography 4784 (Climatic Change). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

Achievement Target:

The mean score for this measure should equal or exceed 3.5.

Findings (2009-2010) - Achievement Target: Met
There were eight Geography majors in the course, and the mean score for those majors was 3.9.

M 19: GEOG 4830 (Senior Seminar) A

Source of Evidence: Written assignment(s), usually scored by a rubric
This measure is based on student performance on speaker evaluation essays in Geography 4830 (Senior Seminar). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

**Achievement Target:**

The mean score for this measure should equal or exceed 3.5.

**Findings (2009-2010) - Achievement Target: Met**

There were eight Geography majors in the course, and the mean score for those majors was 3.6.

**Related Action Plans (by Established cycle, then alpha):**

For full information, see the Action Plan Details section of this report.

**Increase the number of measures for certain outcomes**

*Established in Cycle: 2008-2009*

It has been determined that the program needs at least six measures per learning outcome. There were 82 outcome/measure combi...

**M 20: GEOG 4830 (Senior Seminar) B**

*Source of Evidence: Written assignment(s), usually scored by a rubric*

This measure is based on student performance on research ethics essay in Geography 4830 (Senior Seminar). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

**Achievement Target:**

The mean score for this measure should equal or exceed 3.5.

**Findings (2009-2010) - Achievement Target: Met**

There were seven Geography majors in the course, and the mean score for those majors was 3.9.

**Related Action Plans (by Established cycle, then alpha):**

For full information, see the Action Plan Details section of this report.

**Increase the number of measures for certain outcomes**

*Established in Cycle: 2008-2009*
It has been determined that the program needs at least six measures per learning outcome. There were 82 outcome/measure combi...

**M 21: GEOG 4830 (Senior Seminar) C**

**Source of Evidence:** Project, either individual or group  
This measure is based on student performance on research project in Geography 4830 (Senior Seminar). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

**Achievement Target:**  
The mean score for this measure should equal or exceed 3.5.

**Findings (2009-2010) - Achievement Target: Met**  
There were seven Geography majors in the course, and the mean score for those majors was 4.0.

**O 3: Communication -- Oral**  
Students communicate effectively using appropriate oral or signed conventions and formats.

**Associations:**

**General Education or Core Curriculum:**  
2 Oral Communication

**Related Measures:**

**M 2: GEOG 4518 (Digital Cartography) B**

**Source of Evidence:** Written assignment(s), usually scored by a rubric  
This measure is based on student performance on final assignment in Geography 4518 (Digital Cartography). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

**Achievement Target:**  
The mean score for this measure should equal or exceed 3.5.

**Findings (2009-2010) - Achievement Target: Not Met**  
There were nine Geography majors in the course, and the mean score for those majors was 3.3.
M 12: GEOG 4764 (Urban Geography) C

Source of Evidence: Project, either individual or group
This measure is based on student performance on final project in Geography 4764 (Urban Geography). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

Achievement Target:
The mean score for this measure should equal or exceed 3.5.

Findings (2009-2010) - Achievement Target: Met
There were eight Geography majors in the course, and the mean score for those majors was 4.1.

Related Action Plans (by Established cycle, then alpha):
For full information, see the Action Plan Details section of this report.

Increase the number of measures for certain outcomes
Established in Cycle: 2008-2009

It has been determined that the program needs at least six measures per learning outcome. There were 82 outcome/measure combi...

M 13: GEOG 4778 (Political Geography) A

Source of Evidence: Performance (recital, exhibit, science project)
This measure is based on student performance on oral participation in Geography 4778 (Political Geography). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

Achievement Target:
The mean score for this measure should equal or exceed 3.5.

Findings (2009-2010) - Achievement Target: Met
There were eight Geography majors in the course, and the mean score for those majors was 4.0.

Related Action Plans (by Established cycle, then alpha):
For full information, see the Action Plan Details section of this report.
Increase the number of measures for certain outcomes  
*Established in Cycle: 2008-2009*

It has been determined that the program needs at least six measures per learning outcome. There were 82 outcome/measure combinations...

**M 21: GEOG 4830 (Senior Seminar) C**

*Source of Evidence: Project, either individual or group*

This measure is based on student performance on a research project in Geography 4830 (Senior Seminar). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

**Achievement Target:**

The mean score for this measure should equal or exceed 3.5.

**Findings (2009-2010) - Achievement Target: Met**

There were seven Geography majors in the course, and the mean score for those majors was 4.3.

**Related Action Plans (by Established cycle, then alpha):**

For full information, see the *Action Plan Details* section of this report.

Increase the number of measures for certain outcomes  
*Established in Cycle: 2008-2009*

It has been determined that the program needs at least six measures per learning outcome. There were 82 outcome/measure combinations...

**O 4: Communication -- Visual**

Students effectively develop effective visual-communication skills (e.g., graphics construction), especially cartographic mapping.

**Related Measures:**

**M 3: GEOG 4518 (Digital Cartography) C**

This measure is based on student performance on in-class exercises in Geography 4518 (Digital Cartography). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

*Source of Evidence: Project, either individual or group*
Achievement Target:

The mean score for this measure should equal or exceed 3.5.

**Findings (2009-2010) - Achievement Target: Met**

There were nine Geography majors in the course, and the mean score for those majors was 3.8.

**Related Action Plans (by Established cycle, then alpha):**

For full information, see the Action Plan Details section of this report.

**Increase the number of measures for certain outcomes**
**Established in Cycle: 2008-2009**

It has been determined that the program needs at least six measures per learning outcome. There were 82 outcome/measure combi...

**M 12: GEOG 4764 (Urban Geography) C**

*Source of Evidence:* Project, either individual or group

This measure is based on student performance on final project in Geography 4764 (Urban Geography). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

**Achievement Target:**

The mean score for this measure should equal or exceed 3.5.

**Findings (2009-2010) - Achievement Target: Met**

There were eight Geography majors in the course, and the mean score for those majors was 4.4.

**M 21: GEOG 4830 (Senior Seminar) C**

*Source of Evidence:* Project, either individual or group

This measure is based on student performance on research project in Geography 4830 (Senior Seminar). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

**Achievement Target:**

The mean score for this measure should equal or exceed 3.5.
Findings (2009-2010) - Achievement Target: Met
There were seven Geography majors in the course, and the mean score for those majors was 4.4.

O 5: Quantitative Skills -- Arithmetic Operations

Students perform arithmetic operations effectively.

Associations:

General Education or Core Curriculum:
6 Quantitative Skills

Related Measures:

M 3: GEOG 4518 (Digital Cartography) C
This measure is based on student performance on in-class exercises in Geography 4518 (Digital Cartography). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

Source of Evidence: Project, either individual or group

Achievement Target:

The mean score for this measure should equal or exceed 3.5.

Findings (2009-2010) - Achievement Target: Not Met
There were nine Geography majors in the course, and the mean score for those majors was 3.0

M 4: GEOG 4520 (Quantitative Spatial Analysis) A
This measure is based on student responses on final examination in Geography 4520 (Quantitative Spatial Analysis). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

Source of Evidence: Writing exam to assure certain proficiency level

Achievement Target:

The mean score for this measure should equal or exceed 3.5.

Findings (2009-2010) - Achievement Target: Met
There were 12 Geography majors in the course, and the mean score for those majors was 3.7.

Related Action Plans (by Established cycle, then alpha):

For full information, see the Action Plan Details section of this report.
Increase the number of measures for certain outcomes  
*Established in Cycle: 2008-2009*

It has been determined that the program needs at least six measures per learning outcome. There were 82 outcome/measure combi...

**O 6: Quantitative Skills -- Problem Solving**

Students effectively and appropriately apply quantitative methods to geographical problems.

**Associations:**

**General Education or Core Curriculum:**
- 6 Quantitative Skills

**Related Measures:**

**M 4: GEOG 4520 (Quantitative Spatial Analysis) A**

This measure is based on student responses on final examination in Geography 4520 (Quantitative Spatial Analysis). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

*Source of Evidence:* Writing exam to assure certain proficiency level

**Achievement Target:**

The mean score for this measure should equal or exceed 3.5.

**Findings (2009-2010) - Achievement Target: Met**

- There were 12 Geography majors in the course, and the mean score for those majors was 4.8.

**Related Action Plans (by Established cycle, then alpha):**

For full information, see the *Action Plan Details* section of this report.

**Increase the number of measures for certain outcomes  
Established in Cycle: 2008-2009**

It has been determined that the program needs at least six measures per learning outcome. There were 82 outcome/measure combi...

**M 5: GEOG 4520 (Quantitative Spatial Analysis) B**

This measure is based on student statements in final assignment in Geography 4520 (Quantitative Spatial Analysis). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).
Source of Evidence: Written assignment(s), usually scored by a rubric

Achievement Target:

The mean score for this measure should equal or exceed 3.5.

Findings (2009-2010) - Achievement Target: Met
There were 12 Geography majors in the course, and the mean score for those majors was 3.8.

Related Action Plans (by Established cycle, then alpha):

For full information, see the Action Plan Details section of this report.

Increase the number of measures for certain outcomes
Established in Cycle: 2008-2009

It has been determined that the program needs at least six measures per learning outcome. There were 82 outcome/measure combi...

M 17: GEOG 4784 (Climatic Change) B

Source of Evidence: Writing exam to assure certain proficiency level
This measure is based on student performance on take-home essay examinations in Geography 4784 (Climatic Change). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

Achievement Target:

The mean score for this measure should equal or exceed 3.5.

Findings (2009-2010) - Achievement Target: Met
There were eight Geography majors in the course, and the mean score for those majors was 3.9.

O 7: Critical Thinking -- Question Formulation (1)

Students formulate appropriate questions for geographical research.

Associations:

General Education or Core Curriculum:
4 Critical Thinking
**Related Measures:**

**M 8: GEOG 4644 (Environmental Conservation) B**
This measure is based on student performance on term paper in Geography 4644 (Environmental Conservation). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

*Source of Evidence:* Project, either individual or group

**Achievement Target:**

The mean score for this measure should equal or exceed 3.5.

**Findings (2009-2010) - Achievement Target: Met**
There were seven Geography majors in the course, and the mean score for those majors was 4.6.

**Related Action Plans (by Established cycle, then alpha):**

For full information, see the *Action Plan Details* section of this report.

**Increase the number of measures for certain outcomes**
*Established in Cycle: 2008-2009*

It has been determined that the program needs at least six measures per learning outcome. There were 82 outcome/measure combinations.

**M 9: GEOG 4644 (Environmental Conservation) C**
This measure is based on student performance on oral presentation and class discussion in Geography 4644 (Environmental Conservation). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

*Source of Evidence:* Presentation, either individual or group

**Achievement Target:**

The mean score for this measure should equal or exceed 3.5.

**Findings (2009-2010) - Achievement Target: Met**
There were seven Geography majors in the course, and the mean score for those majors was 4.6.

**Related Action Plans (by Established cycle, then alpha):**

For full information, see the *Action Plan Details* section of this report.
Increase the number of measures for certain outcomes  
*Established in Cycle: 2008-2009*

It has been determined that the program needs at least six measures per learning outcome. There were 82 outcome/measure combi...

**M 14: GEOG 4778 (Political Geography) B**

*Source of Evidence:* Written assignment(s), usually scored by a rubric  
This measure is based on student performance on in-class assignments in Geography 4778 (Political Geography). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

**Achievement Target:**

The mean score for this measure should equal or exceed 3.5.

**Findings (2009-2010) - Achievement Target: Met**

There were eight Geography majors in the course, and the mean score for those majors was 4.0.

**Related Action Plans (by Established cycle, then alpha):**

For full information, see the *Action Plan Details* section of this report.

Increase the number of measures for certain outcomes  
*Established in Cycle: 2008-2009*

It has been determined that the program needs at least six measures per learning outcome. There were 82 outcome/measure combi...

**M 20: GEOG 4830 (Senior Seminar) B**

*Source of Evidence:* Written assignment(s), usually scored by a rubric  
This measure is based on student performance on research ethics essay in Geography 4830 (Senior Seminar). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

**Achievement Target:**

The mean score for this measure should equal or exceed 3.5.
Findings (2009-2010) - Achievement Target: Met
There were seven Geography majors in the course, and the mean score for those majors was 3.9.

Related Action Plans (by Established cycle, then alpha):
For full information, see the Action Plan Details section of this report.

Increase the number of measures for certain outcomes
Established in Cycle: 2008-2009

It has been determined that the program needs at least six measures per learning outcome. There were 82 outcome/measure combi...

M 21: GEOG 4830 (Senior Seminar) C

Source of Evidence: Project, either individual or group
This measure is based on student performance on research project in Geography 4830 (Senior Seminar). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

Achievement Target:
The mean score for this measure should equal or exceed 3.5.

Findings (2009-2010) - Achievement Target: Met
There were seven Geography majors in the course, and the mean score for those majors was 4.0.

O 8: Critical Thinking -- Question Formulation (2)

Students use the results of analyses to appropriately construct new arguments and formulate new geographical questions.

Associations:

General Education or Core Curriculum:
  4 Critical Thinking

Related Measures:

M 10: GEOG 4764 (Urban Geography) A

Source of Evidence: Written assignment(s), usually scored by a rubric
This measure is based on student performance on weekly writing assignments in Geography 4764 (Urban Geography). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

**Achievement Target:**

The mean score for this measure should equal or exceed 3.5.

**Findings (2009-2010) - Achievement Target: Met**

There were eight Geography majors in the course, and the mean score for those majors was 4.0.

**M 11: GEOG 4764 (Urban Geography) B**

**Source of Evidence:** Writing exam to assure certain proficiency level

This measure is based on student performance on mid-term and final examinations in Geography 4764 (Urban Geography). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

**Achievement Target:**

The mean score for this measure should equal or exceed 3.5.

**Findings (2009-2010) - Achievement Target: Met**

There were eight Geography majors in the course, and the mean score for those majors was 4.0.

**M 12: GEOG 4764 (Urban Geography) C**

**Source of Evidence:** Project, either individual or group

This measure is based on student performance on final project in Geography 4764 (Urban Geography). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

**Achievement Target:**

The mean score for this measure should equal or exceed 3.5.

**Findings (2009-2010) - Achievement Target: Met**

There were eight Geography majors in the course, and the mean score for those majors was 4.0.

**M 15: GEOG 4778 (Political Geography) C**
Source of Evidence: Project, either individual or group
This measure is based on student performance on final project in Geography 4778 (Political Geography). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

Achievement Target:
The mean score for this measure should equal or exceed 3.5.

Findings (2009-2010) - Achievement Target: Not Met
There were eight Geography majors in the course, and the mean score for those majors was 3.3.

Related Action Plans (by Established cycle, then alpha):
For full information, see the Action Plan Details section of this report.

Increase the number of measures for certain outcomes
Established in Cycle: 2008-2009

It has been determined that the program needs at least six measures per learning outcome. There were 82 outcome/measure combi...

M 21: GEOG 4830 (Senior Seminar) C

Source of Evidence: Project, either individual or group
This measure is based on student performance on research project in Geography 4830 (Senior Seminar). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

Achievement Target:
The mean score for this measure should equal or exceed 3.5.

Findings (2009-2010) - Achievement Target: Met
There were seven Geography majors in the course, and the mean score for those majors was 3.7.

O 9: Critical Thinking -- Evidence Collection
Students effectively collect appropriate evidence.

Associations:
**General Education or Core Curriculum:**

4 Critical Thinking

**Related Measures:**

**M 2: GEOG 4518 (Digital Cartography) B**

*Source of Evidence:* Written assignment(s), usually scored by a rubric

This measure is based on student performance on final assignment in Geography 4518 (Digital Cartography). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

**Achievement Target:**

The mean score for this measure should equal or exceed 3.5.

**Findings (2009-2010) - Achievement Target: Not Met**

There were nine Geography majors in the course, and the mean score for those majors was 3.4.

**M 7: GEOG 4644 (Environmental Conservation) A**

This measure is based on student performance on take-home essay examinations in Geography 4644 (Environmental Conservation). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

*Source of Evidence:* Writing exam to assure certain proficiency level

**Achievement Target:**

The mean score for this measure should equal or exceed 3.5.

**Findings (2009-2010) - Achievement Target: Met**

There were seven Geography majors in the course, and the mean score for those majors was 4.7

**Related Action Plans (by Established cycle, then alpha):**

For full information, see the Action Plan Details section of this report.

**Increase the number of measures for certain outcomes**

*Established in Cycle: 2008-2009*

It has been determined that the program needs at least six measures per learning outcome. There were 82 outcome/measure combi...
M 8: GEOG 4644 (Environmental Conservation) B
This measure is based on student performance on term paper in Geography 4644 (Environmental Conservation). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

Source of Evidence: Project, either individual or group

Achievement Target:
The mean score for this measure should equal or exceed 3.5.

Findings (2009-2010) - Achievement Target: Met
There were seven Geography majors in the course, and the mean score for those majors was 5.0.

Related Action Plans (by Established cycle, then alpha):
For full information, see the Action Plan Details section of this report.

Increase the number of measures for certain outcomes
Established in Cycle: 2008-2009

It has been determined that the program needs at least six measures per learning outcome. There were 82 outcome/measure combi...

M 11: GEOG 4764 (Urban Geography) B

Source of Evidence: Writing exam to assure certain proficiency level
This measure is based on student performance on midterm and final examinations in Geography 4764 (Urban Geography). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

Achievement Target:
The mean score for this measure should equal or exceed 3.5.

Findings (2009-2010) - Achievement Target: Met
There were eight Geography majors in the course, and the mean score for those majors was 4.3.

M 12: GEOG 4764 (Urban Geography) C

Source of Evidence: Project, either individual or group
This measure is based on student performance on final project in Geography 4764 (Urban Geography). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

Achievement Target:
The mean score for this measure should equal or exceed 3.5.

Findings (2009-2010) - Achievement Target: Met
There were eight Geography majors in the course, and the mean score for those majors was 4.3.

M 19: GEOG 4830 (Senior Seminar) A

Source of Evidence: Written assignment(s), usually scored by a rubric
This measure is based on student performance on speaker evaluation essays in Geography 4830 (Senior Seminar). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

Achievement Target:
The mean score for this measure should equal or exceed 3.5.

Findings (2009-2010) - Achievement Target: Met
There were eight Geography majors in the course, and the mean score for those majors was 3.7.

Related Action Plans (by Established cycle, then alpha):
For full information, see the Action Plan Details section of this report.

Increase the number of measures for certain outcomes
Established in Cycle: 2008-2009

It has been determined that the program needs at least six measures per learning outcome. There were 82 outcome/measure combi...

M 20: GEOG 4830 (Senior Seminar) B

Source of Evidence: Written assignment(s), usually scored by a rubric
This measure is based on student performance on research ethics essay in Geography 4830 (Senior Seminar). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).
Achievement Target:
The mean score for this measure should equal or exceed 3.5.

Findings (2009-2010) - Achievement Target: Met
There were seven Geography majors in the course, and the mean score for those majors was 3.9.

M 21: GEOG 4830 (Senior Seminar) C

Source of Evidence: Project, either individual or group
This measure is based on student performance on research project in Geography 4830 (Senior Seminar). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

Achievement Target:
The mean score for this measure should equal or exceed 3.5.

Findings (2009-2010) - Achievement Target: Met
There were seven Geography majors in the course, and the mean score for those majors was 3.9.

O 10: Critical Thinking -- Information Evaluation
Students appropriately evaluate claims, arguments, evidence and hypotheses.

Associations:
General Education or Core Curriculum:
4 Critical Thinking

Related Measures:

M 4: GEOG 4520 (Quantitative Spatial Analysis) A
This measure is based on student responses on final examination in Geography 4520 (Quantitative Spatial Analysis). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

Source of Evidence: Writing exam to assure certain proficiency level

Achievement Target:
The mean score for this measure should equal or exceed 3.5.
Findings (2009-2010) - Achievement Target: Met
There were 12 Geography majors in the course, and the mean score for those majors was 3.7

Related Action Plans (by Established cycle, then alpha):
For full information, see the Action Plan Details section of this report.

Increase the number of measures for certain outcomes
Established in Cycle: 2008-2009

It has been determined that the program needs at least six measures per learning outcome. There were 82 outcome/measure combi...

M 5: GEOG 4520 (Quantitative Spatial Analysis) B
This measure is based on student statements in final assignment in Geography 4520 (Quantitative Spatial Analysis). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

Source of Evidence: Written assignment(s), usually scored by a rubric

Achievement Target:
The mean score for this measure should equal or exceed 3.5.

Findings (2009-2010) - Achievement Target: Met
There were 12 Geography majors in the course, and the mean score for those majors was 3.8.

Related Action Plans (by Established cycle, then alpha):
For full information, see the Action Plan Details section of this report.

Increase the number of measures for certain outcomes
Established in Cycle: 2008-2009

It has been determined that the program needs at least six measures per learning outcome. There were 82 outcome/measure combi...

M 7: GEOG 4644 (Environmental Conservation) A
This measure is based on student performance on take-home essay examinations in Geography 4644 (Environmental Conservation). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

Source of Evidence: Writing exam to assure certain proficiency level
Achievement Target:
The mean score for this measure should equal or exceed 3.5.

Findings (2009-2010) - Achievement Target: Met
There were seven Geography majors in the course, and the mean score for those majors was 4.7.

Related Action Plans (by Established cycle, then alpha):
For full information, see the Action Plan Details section of this report.

Increase the number of measures for certain outcomes
Established in Cycle: 2008-2009

It has been determined that the program needs at least six measures per learning outcome. There were 82 outcome/measure combi...

M 8: GEOG 4644 (Environmental Conservation) B
This measure is based on student performance on term paper in Geography 4644 (Environmental Conservation). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

Source of Evidence: Project, either individual or group

Achievement Target:
The mean score for this measure should equal or exceed 3.5.

Findings (2009-2010) - Achievement Target: Met
There were seven Geography majors in the course, and the mean score for those majors was 4.6.

Related Action Plans (by Established cycle, then alpha):
For full information, see the Action Plan Details section of this report.

Increase the number of measures for certain outcomes
Established in Cycle: 2008-2009

It has been determined that the program needs at least six measures per learning outcome. There were 82 outcome/measure combi...

M 9: GEOG 4644 (Environmental Conservation) C
This measure is based on student performance on oral presentation and class discussion in Geography 4644 (Environmental Conservation). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral),
4 (agree), and 5 (strongly agree).

*Source of Evidence:* Presentation, either individual or group

**Achievement Target:**

The mean score for this measure should equal or exceed 3.5.

**Findings (2009-2010) - Achievement Target: Met**

There were seven Geography majors in the course, and the mean score for those majors was 4.7.

**Related Action Plans (by Established cycle, then alpha):**

For full information, see the *Action Plan Details* section of this report.

**Increase the number of measures for certain outcomes**  
*Established in Cycle: 2008-2009*

It has been determined that the program needs at least six measures per learning outcome. There were 82 outcome/measure combi...

**M 10: GEOG 4764 (Urban Geography) A**

*Source of Evidence:* Written assignment(s), usually scored by a rubric

This measure is based on student performance on weekly writing assignments in Geography 4764 (Urban Geography). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

**Achievement Target:**

The mean score for this measure should equal or exceed 3.5.

**Findings (2009-2010) - Achievement Target: Met**

There were eight Geography majors in the course, and the mean score for those majors was 3.9.

**Related Action Plans (by Established cycle, then alpha):**

For full information, see the *Action Plan Details* section of this report.

**Improve scores on Outcome 10 in GEOG 4764**  
*Established in Cycle: 2008-2009*
to improve scores on Outcome 10 (Critical Th...  

**Increase the number of measures for certain outcomes**  
*Established in Cycle: 2008-2009*

It has been determined that the program needs at least six measures per learning outcome. There were 82 outcome/measure combi...

**M 11: GEOG 4764 (Urban Geography) B**

*Source of Evidence: Writing exam to assure certain proficiency level*  
This measure is based on student performance on midterm and final examinations in Geography 4764 (Urban Geography). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

**Achievement Target:**

The mean score for this measure should equal or exceed 3.5.

*Findings (2009-2010) - Achievement Target: Met*  
There were eight Geography majors in the course, and the mean score for those majors was 3.9.

**Related Action Plans (by Established cycle, then alpha):**

For full information, see the *Action Plan Details* section of this report.

**Increase the number of measures for certain outcomes**  
*Established in Cycle: 2008-2009*

It has been determined that the program needs at least six measures per learning outcome. There were 82 outcome/measure combi...

**M 12: GEOG 4764 (Urban Geography) C**

*Source of Evidence: Project, either individual or group*  
This measure is based on student performance on final project in Geography 4764 (Urban Geography). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

**Achievement Target:**

The mean score for this measure should equal or exceed 3.5.
Findings (2009-2010) - Achievement Target: Met
There were eight Geography majors in the course, and the mean score for those majors was 3.9.

M 14: GEOG 4778 (Political Geography) B

Source of Evidence: Written assignment(s), usually scored by a rubric
This measure is based on student performance on in-class assignments in Geography 4778 (Political Geography). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

Achievement Target:
The mean score for this measure should equal or exceed 3.5.

Findings (2009-2010) - Achievement Target: Met
There were eight Geography majors in the course, and the mean score for those majors was 4.0.

Related Action Plans (by Established cycle, then alpha):
For full information, see the Action Plan Details section of this report.

Increase the number of measures for certain outcomes
Established in Cycle: 2008-2009

It has been determined that the program needs at least six measures per learning outcome. There were 82 outcome/measure combi...

M 17: GEOG 4784 (Climatic Change) B

Source of Evidence: Writing exam to assure certain proficiency level
This measure is based on student performance on take-home essay examinations in Geography 4784 (Climatic Change). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

Achievement Target:
The mean score for this measure should equal or exceed 3.5.
Findings (2009-2010) - Achievement Target: Met
There were eight Geography majors in the course, and the mean score for those majors was 3.9.

M 19: GEOG 4830 (Senior Seminar) A

Source of Evidence: Written assignment(s), usually scored by a rubric
This measure is based on student performance on speaker evaluation essays in Geography 4830 (Senior Seminar). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

Achievement Target:
The mean score for this measure should equal or exceed 3.5.

Findings (2009-2010) - Achievement Target: Met
There were eight Geography majors in the course, and the mean score for those majors was 3.7.

Related Action Plans (by Established cycle, then alpha):
For full information, see the Action Plan Details section of this report.

Increase the number of measures for certain outcomes
Established in Cycle: 2008-2009

It has been determined that the program needs at least six measures per learning outcome. There were 82 outcome/measure combi...

M 20: GEOG 4830 (Senior Seminar) B

Source of Evidence: Written assignment(s), usually scored by a rubric
This measure is based on student performance on research ethics essay in Geography 4830 (Senior Seminar). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

Achievement Target:
The mean score for this measure should equal or exceed 3.5.

Findings (2009-2010) - Achievement Target: Met
There were seven Geography majors in the course, and the mean score for those majors was 3.9.
M 21: GEOG 4830 (Senior Seminar) C

Source of Evidence: Project, either individual or group
This measure is based on student performance on research project in Geography 4830 (Senior Seminar). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

Achievement Target:
The mean score for this measure should equal or exceed 3.5.

Findings (2009-2010) - Achievement Target: Met
There were seven Geography majors in the course, and the mean score for those majors was 4.0.

O 11: Technology
Students effectively use computers and other technology appropriate to geography.

Associations:
General Education or Core Curriculum:
7 Technology

Related Measures:

M 2: GEOG 4518 (Digital Cartography) B

Source of Evidence: Written assignment(s), usually scored by a rubric
This measure is based on student performance on final assignment in Geography 4518 (Digital Cartography). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

Achievement Target:
The mean score for this measure should equal or exceed 3.5.

Findings (2009-2010) - Achievement Target: Met
There were nine Geography majors in the course, and the mean score for those majors was 3.9.

Related Action Plans (by Established cycle, then alpha):
For full information, see the Action Plan Details section of this report.
Increase the number of measures for certain outcomes  
*Established in Cycle: 2008-2009*

It has been determined that the program needs at least six measures per learning outcome. There were 82 outcome/measure combi...

**M 3: GEOG 4518 (Digital Cartography) C**
This measure is based on student performance on in-class exercises in Geography 4518 (Digital Cartography). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

*Source of Evidence:* Project, either individual or group

**Achievement Target:**

The mean score for this measure should equal or exceed 3.5.

**Findings (2009-2010) - Achievement Target: Met**
There were nine Geography majors in the course, and the mean score for those majors was 3.9.

**Related Action Plans (by Established cycle, then alpha):**

For full information, see the *Action Plan Details* section of this report.

Increase the number of measures for certain outcomes  
*Established in Cycle: 2008-2009*

It has been determined that the program needs at least six measures per learning outcome. There were 82 outcome/measure combi...

**M 6: GEOG 4520 (Quantitative Spatial Analysis) C**
This measure is based on student proficiency of software used for in-class exercises in Geography 4520 (Quantitative Spatial Analysis). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

*Source of Evidence:* Performance (recital, exhibit, science project)

**Achievement Target:**

The mean score for this measure should equal or exceed 3.5.

**Findings (2009-2010) - Achievement Target: Met**
There were 12 Geography majors in the course, and the mean score for those majors was 4.3
Related Action Plans (by Established cycle, then alpha):

For full information, see the Action Plan Details section of this report.

Increase the number of measures for certain outcomes
Established in Cycle: 2008-2009

It has been determined that the program needs at least six measures per learning outcome. There were 82 outcome/measure combi...

M 8: GEOG 4644 (Environmental Conservation) B
This measure is based on student performance on term paper in Geography 4644 (Environmental Conservation). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

Source of Evidence: Project, either individual or group

Achievement Target:
The mean score for this measure should equal or exceed 3.5.

Findings (2009-2010) - Achievement Target: Met
There were seven Geography majors in the course, and the mean score for those majors was 3.0.

Related Action Plans (by Established cycle, then alpha):

For full information, see the Action Plan Details section of this report.

Increase the number of measures for certain outcomes
Established in Cycle: 2008-2009

It has been determined that the program needs at least six measures per learning outcome. There were 82 outcome/measure combi...

O 12: Collaboration

Students participate effectively in collaborative activities.

Associations:

General Education or Core Curriculum:
3 Collaboration

Related Measures:
M 9: GEOG 4644 (Environmental Conservation) C
This measure is based on student performance on oral presentation and class discussion in Geography 4644 (Environmental Conservation). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

Source of Evidence: Presentation, either individual or group

Achievement Target:
The mean score for this measure should equal or exceed 3.5.

Findings (2009-2010) - Achievement Target: Met
There were seven Geography majors in the course, and the mean score for those majors was 5.0.

Related Action Plans (by Established cycle, then alpha):
For full information, see the Action Plan Details section of this report.

Increase the number of measures for certain outcomes
Established in Cycle: 2008-2009

It has been determined that the program needs at least six measures per learning outcome. There were 82 outcome/measure combi...

M 15: GEOG 4778 (Political Geography) C

Source of Evidence: Project, either individual or group
This measure is based on student performance on final project in Geography 4778 (Political Geography). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

Achievement Target:
The mean score for this measure should equal or exceed 3.5.

Findings (2009-2010) - Achievement Target: Met
There were eight Geography majors in the course, and the mean score for those majors was 4.6.

Related Action Plans (by Established cycle, then alpha):
For full information, see the Action Plan Details section of this report.
Increase the number of measures for certain outcomes
Established in Cycle: 2008-2009

It has been determined that the program needs at least six measures per learning outcome. There were 82 outcome/measure combi...

O 13: Contemporary Issues -- Diverse Disciplines

Students effectively analyze contemporary issues within the context of diverse disciplinary perspectives.

Associations:

General Education or Core Curriculum:
5 Contemporary Issues

Related Measures:

M 7: GEOG 4644 (Environmental Conservation) A
This measure is based on student performance on take-home essay examinations in Geography 4644 (Environmental Conservation). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

Source of Evidence: Writing exam to assure certain proficiency level

Achievement Target:

The mean score for this measure should equal or exceed 3.5.

Findings (2009-2010) - Achievement Target: Met
There were seven Geography majors in the course, and the mean score for those majors was 4.6.

M 8: GEOG 4644 (Environmental Conservation) B
This measure is based on student performance on term paper in Geography 4644 (Environmental Conservation). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

Source of Evidence: Project, either individual or group

Achievement Target:

The mean score for this measure should equal or exceed 3.5.

Findings (2009-2010) - Achievement Target: Met
There were seven Geography majors in the course, and the mean score for those majors was 4.7.
Related Action Plans (by Established cycle, then alpha):

For full information, see the Action Plan Details section of this report.

Increase the number of measures for certain outcomes
Established in Cycle: 2008-2009

It has been determined that the program needs at least six measures per learning outcome. There were 82 outcome/measure combi...

M 10: GEOG 4764 (Urban Geography) A

Source of Evidence: Written assignment(s), usually scored by a rubric
This measure is based on student performance on weekly writing assignments in Geography 4764 (Urban Geography). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

Achievement Target:

The mean score for this measure should equal or exceed 3.5.

Findings (2009-2010) - Achievement Target: Met
There were eight Geography majors in the course, and the mean score for those majors was 4.3.

M 11: GEOG 4764 (Urban Geography) B

Source of Evidence: Writing exam to assure certain proficiency level
This measure is based on student performance on midterm and final examinations in Geography 4764 (Urban Geography). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

Achievement Target:

The mean score for this measure should equal or exceed 3.5.

Findings (2009-2010) - Achievement Target: Met
There were eight Geography majors in the course, and the mean score for those majors was 4.3.

M 12: GEOG 4764 (Urban Geography) C
**Source of Evidence:** Project, either individual or group
This measure is based on student performance on final project in Geography 4764 (Urban Geography). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

**Achievement Target:**
The mean score for this measure should equal or exceed 3.5.

**Findings** (2009-2010) - Achievement Target: Met
There were eight Geography majors in the course, and the mean score for those majors was 4.3.

**M 13: GEOG 4778 (Political Geography) A**

**Source of Evidence:** Performance (recital, exhibit, science project)
This measure is based on student performance on oral participation in Geography 4778 (Political Geography). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

**Achievement Target:**
The mean score for this measure should equal or exceed 3.5.

**Findings** (2009-2010) - Achievement Target: Met
There were eight Geography majors in the course, and the mean score for those majors was 4.0.

**Related Action Plans (by Established cycle, then alpha):**
For full information, see the Action Plan Details section of this report.

**Increase the number of measures for certain outcomes**
*Established in Cycle: 2008-2009*

It has been determined that the program needs at least six measures per learning outcome. There were 82 outcome/measure combi...

**M 19: GEOG 4830 (Senior Seminar) A**

**Source of Evidence:** Written assignment(s), usually scored by a rubric
This measure is based on student performance on speaker evaluation essays in Geography 4830 (Senior Seminar). Possible scores for each student/outcome
Achievement Target:

The mean score for this measure should equal or exceed 3.5.

Findings (2009-2010) - Achievement Target: Met
There were eight Geography majors in the course, and the mean score for those majors was 3.9.

M 20: GEOG 4830 (Senior Seminar) B

Source of Evidence: Written assignment(s), usually scored by a rubric
This measure is based on student performance on research ethics essay in Geography 4830 (Senior Seminar). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

Achievement Target:

The mean score for this measure should equal or exceed 3.5.

Findings (2009-2010) - Achievement Target: Met
There were seven Geography majors in the course, and the mean score for those majors was 3.9.

Related Action Plans (by Established cycle, then alpha):
For full information, see the Action Plan Details section of this report.

Increase the number of measures for certain outcomes
Established in Cycle: 2008-2009

It has been determined that the program needs at least six measures per learning outcome. There were 82 outcome/measure combi...

M 21: GEOG 4830 (Senior Seminar) C

Source of Evidence: Project, either individual or group
This measure is based on student performance on research project in Geography 4830 (Senior Seminar). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).
Achievement Target:

The mean score for this measure should equal or exceed 3.5.

Findings (2009-2010) - Achievement Target: Met
There were seven Geography majors in the course, and the mean score for those majors was 4.3.

Related Action Plans (by Established cycle, then alpha):
For full information, see the Action Plan Details section of this report.

Increase the number of measures for certain outcomes
Established in Cycle: 2008-2009

It has been determined that the program needs at least six measures per learning outcome. There were 82 outcome/measure combi...

O 14: Contemporary Issues -- "Global"

Students effectively analyze contemporary multicultural, global, and international questions.

Associations:

General Education or Core Curriculum:
5 Contemporary Issues

Related Measures:

M 8: GEOG 4644 (Environmental Conservation) B
This measure is based on student performance on term paper in Geography 4644 (Environmental Conservation). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

Source of Evidence: Project, either individual or group

Achievement Target:

The mean score for this measure should equal or exceed 3.5.

Findings (2009-2010) - Achievement Target: Met
There were seven Geography majors in the course, and the mean score for those majors was 4.4.

Related Action Plans (by Established cycle, then alpha):
For full information, see the Action Plan Details section of this report.
Increase the number of measures for certain outcomes  
*Established in Cycle: 2008-2009*

It has been determined that the program needs at least six measures per learning outcome. There were 82 outcome/measure combinations.

**M 9: GEOG 4644 (Environmental Conservation) C**

This measure is based on student performance on oral presentation and class discussion in Geography 4644 (Environmental Conservation). Possible scores for each student(outcome) combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

*Source of Evidence:* Presentation, either individual or group

**Achievement Target:**

The mean score for this measure should equal or exceed 3.5.

*Findings (2009-2010) - Achievement Target: Met*

There were seven Geography majors in the course, and the mean score for those majors was 4.4.

**Related Action Plans (by Established cycle, then alpha):**

For full information, see the *Action Plan Details* section of this report.

**Increase the number of measures for certain outcomes  
*Established in Cycle: 2008-2009***

It has been determined that the program needs at least six measures per learning outcome. There were 82 outcome/measure combinations.

**M 10: GEOG 4764 (Urban Geography) A**

*Source of Evidence:* Written assignment(s), usually scored by a rubric

This measure is based on student performance on weekly writing assignments in Geography 4764 (Urban Geography). Possible scores for each student(outcome) combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

**Achievement Target:**

The mean score for this measure should equal or exceed 3.5.
Findings (2009-2010) - Achievement Target: Met
There were eight Geography majors in the course, and the mean score for those majors was 4.3.

M 11: GEOG 4764 (Urban Geography) B

Source of Evidence: Writing exam to assure certain proficiency level
This measure is based on student performance on midterm and final examinations in Geography 4764 (Urban Geography). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

Achievement Target:
The mean score for this measure should equal or exceed 3.5.

Findings (2009-2010) - Achievement Target: Met
There were eight Geography majors in the course, and the mean score for those majors was 4.3.

M 12: GEOG 4764 (Urban Geography) C

Source of Evidence: Project, either individual or group
This measure is based on student performance on final project in Geography 4764 (Urban Geography). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

Achievement Target:
The mean score for this measure should equal or exceed 3.5.

Findings (2009-2010) - Achievement Target: Met
There were eight Geography majors in the course, and the mean score for those majors was 4.3.

Related Action Plans (by Established cycle, then alpha):
For full information, see the Action Plan Details section of this report.

Increase the number of measures for certain outcomes
Established in Cycle: 2008-2009

It has been determined that the program needs at least six measures per learning outcome. There were 82 outcome/measure combi...
M 13: GEOG 4778 (Political Geography) A

Source of Evidence: Performance (recital, exhibit, science project)
This measure is based on student performance on oral participation in Geography 4778 (Political Geography). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

Achievement Target:
The mean score for this measure should equal or exceed 3.5.

Findings (2009-2010) - Achievement Target: Met
There were eight Geography majors in the course, and the mean score for those majors was 4.5.

Related Action Plans (by Established cycle, then alpha):
For full information, see the Action Plan Details section of this report.

Increase the number of measures for certain outcomes
Established in Cycle: 2008-2009

It has been determined that the program needs at least six measures per learning outcome. There were 82 outcome/measure combi...

M 14: GEOG 4778 (Political Geography) B

Source of Evidence: Written assignment(s), usually scored by a rubric
This measure is based on student performance on in-class assignments in Geography 4778 (Political Geography). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

Achievement Target:
The mean score for this measure should equal or exceed 3.5.

Findings (2009-2010) - Achievement Target: Met
There were eight Geography majors in the course, and the mean score for those majors was 4.0.

Related Action Plans (by Established cycle, then alpha):
For full information, see the Action Plan Details section of this report.
Increase the number of measures for certain outcomes
*Established in Cycle: 2008-2009*

It has been determined that the program needs at least six measures per learning outcome. There were 82 outcome/measure combinations.

**M 19: GEOG 4830 (Senior Seminar) A**

*Source of Evidence: Written assignment(s), usually scored by a rubric*

This measure is based on student performance on speaker evaluation essays in Geography 4830 (Senior Seminar). Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

**Achievement Target:**

The mean score for this measure should equal or exceed 3.5.

**Findings (2009-2010) - Achievement Target: Met**

There were eight Geography majors in the course, and the mean score for those majors was 3.9.

**Action Plan Details for This Cycle (by Established cycle, then alpha)**

**Improve scores on Outcome 10 in GEOG 4764**

In order to improve scores on Outcome 10 (Critical Thinking -- Information Evaluation) in Geography 4764 (Urban Geography), the instructor will provide students with solid examples of appropriate evaluations of claims, arguments, evidence, and hypotheses.

**Established in Cycle:** 2008-2009

**Implementation Status:** Planned

**Priority:** High

**Relationships (Measure | Outcome/Objective):**

*Measure: GEOG 4764 (Urban Geography) A | Outcome/Objective: Critical Thinking -- Information Evaluation*

**Completion Date:** 08/01/2009
It has been determined that the program needs at least six measures per learning outcome. There were 82 outcome/measure combinations for the 2008-2009 assessment, thereby yielding a mean value of six measures per outcome. To reach the minimum number of six measures per outcome, the following is needed: at least five additional measures for Outcome 4 (Communication - Visual) and Outcome 5 (Quantitative Skills - Arithmetic Operations); at least three additional measures for Outcome 6 (Quantitative Skills - Problem Solving), at least two additional measures for Outcome 8 (Critical Thinking - Question Formulation (2)), Outcome 9 (Critical Thinking - Evidence Collection), and Outcome 11 (Technology); and one additional measure for Outcome 3 (Communication - Oral), Outcome 12 (Collaboration), and Outcome 13 (Contemporary Issues - Diverse Disciplines). Therefore, a high-priority area is increasing the number of measures for outcomes linked to quantitative skills, visual communication, and critical thinking.

Established in Cycle: 2008-2009
Implementation Status: Planned
Priority: High

Relationships (Measure | Outcome/Objective):
- **Measure**: GEOG 4518 (Digital Cartography) A  |  **Outcome/Objective**: Communication -- Oral | Communication -- Written | Foundational-Knowledge Acquisition
- **Measure**: GEOG 4518 (Digital Cartography) B  |  **Outcome/Objective**: Foundational-Knowledge Acquisition | Technology
- **Measure**: GEOG 4518 (Digital Cartography) C  |  **Outcome/Objective**: Collaboration | Communication -- Visual | Critical Thinking -- Evidence Collection | Critical Thinking -- Question Formulation (1) | Critical Thinking -- Question Formulation (2) | Foundational-Knowledge Acquisition | Technology
- **Measure**: GEOG 4520 (Quantitative Spatial Analysis) A  |  **Outcome/Objective**: Critical Thinking -- Information Evaluation | Foundational-Knowledge Acquisition | Quantitative Skills -- Arithmetic Operations | Quantitative Skills -- Problem Solving
- **Measure**: GEOG 4520 (Quantitative Spatial Analysis) B  |  **Outcome/Objective**: Communication -- Written | Critical Thinking -- Information Evaluation | Foundational-Knowledge Acquisition | Quantitative Skills -- Problem Solving
- **Measure**: GEOG 4520 (Quantitative Spatial Analysis) C  |  **Outcome/Objective**: Technology
- **Measure**: GEOG 4644 (Environmental Conservation) A  |  **Outcome/Objective**: Critical Thinking -- Evidence Collection | Critical Thinking -- Information Evaluation
- **Measure**: GEOG 4644 (Environmental Conservation) B  |  **Outcome/Objective**: Contemporary Issues -- "Global" | Contemporary Issues -- Diverse Disciplines | Critical Thinking -- Evidence Collection | Critical Thinking -- Information Evaluation | Critical Thinking -- Question Formulation (1) | Foundational-Knowledge Acquisition | Technology
- **Measure**: GEOG 4644 (Environmental Conservation) C  |  **Outcome/Objective**: Collaboration | Contemporary Issues -- "Global" | Critical Thinking -- Information Evaluation | Critical Thinking -- Question Formulation (1) | Foundational-Knowledge Acquisition
Measure: GEOG 4764 (Urban Geography) A | Outcome/Objective: Communication - Written | Critical Thinking -- Information Evaluation | Foundational-Knowledge Acquisition

Measure: GEOG 4764 (Urban Geography) B | Outcome/Objective: Communication - Written | Critical Thinking -- Information Evaluation | Critical Thinking -- Question Formulation (1) | Foundational-Knowledge Acquisition

Measure: GEOG 4764 (Urban Geography) C | Outcome/Objective: Collaboration | Communication -- Oral | Contemporary Issues -- "Global" | Foundational-Knowledge Acquisition


Measure: GEOG 4778 (Political Geography) B | Outcome/Objective: Contemporary Issues -- "Global" | Critical Thinking -- Information Evaluation | Critical Thinking -- Question Formulation (1) | Foundational-Knowledge Acquisition

Measure: GEOG 4778 (Political Geography) C | Outcome/Objective: Collaboration | Contemporary Issues -- "Global" | Contemporary Issues -- Diverse Disciplines | Critical Thinking -- Question Formulation (1) | Critical Thinking -- Question Formulation (2) | Foundational-Knowledge Acquisition

Measure: GEOG 4784 (Climatic Change) A | Outcome/Objective: Communication -- Written | Critical Thinking -- Information Evaluation | Foundational-Knowledge Acquisition | Quantitative Skills -- Problem Solving

Measure: GEOG 4784 (Climatic Change) B | Outcome/Objective: Communication -- Written

Measure: GEOG 4784 (Climatic Change) C | Outcome/Objective: Communication -- Oral

Measure: GEOG 4830 (Senior Seminar) A | Outcome/Objective: Communication -- Written | Critical Thinking -- Evidence Collection | Critical Thinking -- Information Evaluation | Critical Thinking -- Question Formulation (1) | Critical Thinking -- Question Formulation (2) | Foundational-Knowledge Acquisition

Measure: GEOG 4830 (Senior Seminar) B | Outcome/Objective: Communication -- Written | Contemporary Issues -- Diverse Disciplines | Critical Thinking -- Question Formulation (1) | Critical Thinking -- Question Formulation (2) | Foundational-Knowledge Acquisition

Measure: GEOG 4830 (Senior Seminar) C | Outcome/Objective: Collaboration | Communication -- Oral | Contemporary Issues -- "Global" | Contemporary Issues -- Diverse Disciplines

Completion Date: 01/01/2010

Detailed Assessment Report
2009-2010 Geography MA

Mission/Purpose
The geography program of the Department of Geosciences presents an integrative perspective on the relations among social, political, economic, and physical phenomena occurring across space. The program is committed to teaching the concepts and research methods of the discipline in order to prepare geography majors for professional careers or advanced study or both. Students acquire geographic knowledge and thinking skills in order to understand the complex nature of the human and environmental patterns found in the world around them. Therefore, the program is committed to excellence in both the theoretical and applied arenas. Through scholarship, teaching, and service, the geography program of the Department of Geosciences is dedicated to improving our community, nation, and world.

Goals

G 1: Overall Goals

Overall goals reflect university emphasis on retention and graduation in a timely manner (two years for full-time students). Geosciences also wishes to increase the quality of graduate students, as measured through GPA and application scores (GRE) although we recognize that "quality" is measurable in a number of ways.

Student Learning Outcomes, with Any Associations and Related Measures, Achievement Targets, Findings, and Action Plans

O 1: Critical Thinking -- Evidence Collection

Students collect appropriate evidence.

Related Measures:

M 1: Comprehensive exam, thesis/practicum, and seminars

Source of Evidence: Comprehensive/end-of-program subject matter exam
Data used to assess learning-outcomes achievement of graduated M.A. students were obtained from critiques of those students’ comprehensive examinations (i.e. written exam and oral exam), theses/practicums, and performance in graduate-only seminars. Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

O 2: Foundational Knowledge Acquisition

Students demonstrate knowledge of key geographical concepts, theories, methods, and facts.

Related Measures:
M 1: Comprehensive exam, thesis/practicum, and seminars

*Source of Evidence:* Comprehensive/end-of-program subject matter exam
Data used to assess learning-outcomes achievement of graduated M.A. students were obtained from critiques of those students` comprehensive examinations (i.e. written exam and oral exam), theses/practicums, and performance in graduate-only seminars. Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

O 3: Critical Thinking -- Information Evaluation
Students evaluate claims, arguments, evidence, and hypotheses appropriately.

*Related Measures:*

M 1: Comprehensive exam, thesis/practicum, and seminars

*Source of Evidence:* Comprehensive/end-of-program subject matter exam
Data used to assess learning-outcomes achievement of graduated M.A. students were obtained from critiques of those students` comprehensive examinations (i.e. written exam and oral exam), theses/practicums, and performance in graduate-only seminars. Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

O 4: Communication -- Written
Students communicate effectively using appropriate writing conventions and formats.

*Related Measures:*

M 1: Comprehensive exam, thesis/practicum, and seminars

*Source of Evidence:* Comprehensive/end-of-program subject matter exam
Data used to assess learning-outcomes achievement of graduated M.A. students were obtained from critiques of those students` comprehensive examinations (i.e. written exam and oral exam), theses/practicums, and performance in graduate-only seminars. Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

O 5: Technology
Students use computers and other technology appropriate to geography effectively.
**Related Measures:**

**M 1: Comprehensive exam, thesis/practicum, and seminars**

**Source of Evidence:** Comprehensive/end-of-program subject matter exam
Data used to assess learning-outcomes achievement of graduated M.A. students were obtained from critiques of those students’ comprehensive examinations (i.e. written exam and oral exam), theses/practicums, and performance in graduate-only seminars. Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

**O 6: Communication -- Oral**

Students communicate effectively using appropriate oral or signed conventions and formats.

**Related Measures:**

**M 1: Comprehensive exam, thesis/practicum, and seminars**

**Source of Evidence:** Comprehensive/end-of-program subject matter exam
Data used to assess learning-outcomes achievement of graduated M.A. students were obtained from critiques of those students’ comprehensive examinations (i.e. written exam and oral exam), theses/practicums, and performance in graduate-only seminars. Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

**O 7: Collaboration**

Students participate effectively in collaborative activities.

**Related Measures:**

**M 1: Comprehensive exam, thesis/practicum, and seminars**

**Source of Evidence:** Comprehensive/end-of-program subject matter exam
Data used to assess learning-outcomes achievement of graduated M.A. students were obtained from critiques of those students’ comprehensive examinations (i.e. written exam and oral exam), theses/practicums, and performance in graduate-only seminars. Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

**O 8: Communication -- Visual**
Students effectively develop effective visual-communication skills (e.g., graphics construction), especially cartographic mapping.

**Related Measures:**

**M 1: Comprehensive exam, thesis/practicum, and seminars**

*Source of Evidence:* Comprehensive/end-of-program subject matter exam

Data used to assess learning-outcomes achievement of graduated M.A. students were obtained from critiques of those students` comprehensive examinations (i.e. written exam and oral exam), theses/practicums, and performance in graduate-only seminars. Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

**O 9: Contemporary Issues -- Diverse Disciplines**

Students effectively analyze contemporary issues within the context of diverse disciplinary perspectives.

**Related Measures:**

**M 1: Comprehensive exam, thesis/practicum, and seminars**

*Source of Evidence:* Comprehensive/end-of-program subject matter exam

Data used to assess learning-outcomes achievement of graduated M.A. students were obtained from critiques of those students` comprehensive examinations (i.e. written exam and oral exam), theses/practicums, and performance in graduate-only seminars. Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

**O 10: Quantitative Skills -- Arithmetic Operations**

Students perform arithmetic operations effectively.

**Related Measures:**

**M 1: Comprehensive exam, thesis/practicum, and seminars**

*Source of Evidence:* Comprehensive/end-of-program subject matter exam

Data used to assess learning-outcomes achievement of graduated M.A. students were obtained from critiques of those students` comprehensive examinations (i.e. written exam and oral exam), theses/practicums, and performance in graduate-only seminars. Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).
O 11: Contemporary Issues -- "Global"

Students effectively analyze contemporary multicultural, global, and international questions.

**Related Measures:**

**M 1: Comprehensive exam, thesis/practicum, and seminars**

*Source of Evidence:* Comprehensive/end-of-program subject matter exam
Data used to assess learning-outcomes achievement of graduated M.A. students were obtained from critiques of those students’ comprehensive examinations (i.e. written exam and oral exam), theses/practicums, and performance in graduate-only seminars. Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

O 12: Quantitative Skills -- Problem Solving

Students apply quantitative methods to geographical problems effectively.

**Related Measures:**

**M 1: Comprehensive exam, thesis/practicum, and seminars**

*Source of Evidence:* Comprehensive/end-of-program subject matter exam
Data used to assess learning-outcomes achievement of graduated M.A. students were obtained from critiques of those students’ comprehensive examinations (i.e. written exam and oral exam), theses/practicums, and performance in graduate-only seminars. Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

O 13: Critical Thinking -- Question Formulation (1)

Students formulate appropriate questions for geographical research.

**Related Measures:**

**M 1: Comprehensive exam, thesis/practicum, and seminars**

*Source of Evidence:* Comprehensive/end-of-program subject matter exam
Data used to assess learning-outcomes achievement of graduated M.A. students were obtained from critiques of those students’ comprehensive examinations (i.e. written exam and oral exam), theses/practicums, and performance in graduate-only
seminars. Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

**O 14: Critical Thinking -- Question Formulation (2)**

Students use the results of analyses to appropriately construct new arguments and formulate new geographical questions.

**Related Measures:**

**M 1: Comprehensive exam, thesis/practicum, and seminars**

*Source of Evidence:* Comprehensive/end-of-program subject matter exam

Data used to assess learning-outcomes achievement of graduated M.A. students were obtained from critiques of those students’ comprehensive examinations (i.e. written exam and oral exam), theses/practicums, and performance in graduate-only seminars. Possible scores for each student/outcome combination are 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree).

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**Mission/Purpose**

The Department of Geosciences’ (Geology Program participation in the Critical Thinking Initiative is focused upon the two core courses - GEOL 1121 and GEOL 1122 (Introduction to Geosciences I and II). Our mission is to provide our students the opportunity to go beyond the memorization of geological facts in order to critically evaluate the major concepts related to Earth Science. The implementation of a "critical thinking" component to the core curriculum should help students to think more broadly and to better appreciate how Geology impacts the world they live in.

**Goals**

**G 1: Broadening the scope of thinking**

One goal of geosciences in the Core is help students to think more broadly

**G 2: Understand impacts of Geology in our world**

Student will better appreciate how Geology impacts the world they live in.

**Outcomes/Objectives, with Any Associations and Related Measures, Achievement Targets, Findings, and Action Plans**
O 1: Critical Thinking

Students will demonstrate that they can use knowledge not explicitly stated in a question to answer the question at hand. The knowledge is designed to come from an earlier taught concept in either of the two introductory courses (GEOL 1121 and GEOL 1122). In other words the students were asked to "piece concepts together" somewhat or think critically.

Associations:

Standards:
Institutional Effectiveness
1 Outcomes of educational programs, including student learning outcomes (3.3.1.1)

General Education or Core Curriculum:
4 Critical Thinking

Strategic Plans:
President, Georgia State University
1.2 Undergraduate Experience

Related Measures:

M 1: Test Questions

Source of Evidence: Academic direct measure of learning - other
Every semester faculty members teaching GEOL 1121 and/or GEOL 1122 devise specific test questions (either multiple choice or short essay) that require students to analyze course material in a broader manner than that which was explicitly taught covered during the lecture. The student responses to these specific "Critical Thinking" questions are then monitored by the faculty member when the tests are graded.

Achievement Target:

Students will answer at least 70% of questions correctly.

Findings (2009-2010) - Achievement Target: Not Met

The students scored an average grade of 79% on the 14 critical thinking questions and an average of 73% on the test as a whole. Therefore, the student performance on these critical thinking questions was certainly satisfactory

Detailed Assessment Report
2009-2010 Geology BS
Mission/Purpose

The Department of Geosciences at Georgia State University is committed to excellence in instruction and research in the Earth Sciences. We recognize that to achieve and maintain excellence we must set forth goals in the form of Learning Outcomes and put into place a way of effectively assessing and improving results.

We expect all our graduates to develop a thorough knowledge base in geology which will place them in a good position for moving on to graduate school or to employment in geology. We expect each graduate to have a strong understanding of the constitution of the earth; earth processes, both internal and external; and earth history.

Goals

G 1: Geological Knowledge

Like all sciences, Geology includes a body of knowledge built up over hundreds of years. Whereas some knowledge is site-specific and may not be of immediate importance, much of the knowledge is general, applying to all parts of the earth. Upon graduation, students will have a general understanding of the earth, both in terms of its current constitution, the processes that drive terrestrial events and processes, and its history. Students will understand how the earth is differentiated internally and will know the general make-up of the core, mantle, and crust. They will understand the processes that produced the differentiation and that continue to modify the earth’s interior. Students will understand how the earth has evolved and continues to evolve due to plate tectonics. Students will have a general knowledge of the distribution and characteristics of lithospheric plates and plate margins. They will understand the role of plate tectonics in formation and evolution of both oceanic crust and continental crust, and the role of plate tectonics in mountain building. Students will understand the origin and evolution of the three rock types, igneous, sedimentary, and metamorphic, and how they can be used to decipher earth history. Students will have a general understanding of the origin and distribution of geologic resources, including metallic and nonmetallic ore deposits, and energy resources. They will understand the role of water on earth, including the hydrologic cycle. They will understand the surficial processes of weathering and erosion and how landscapes develop and evolve. Students will have a general knowledge of how life on earth has evolved and how fossils can be used to help decipher earth history. Students will be proficient in the use of basic geologic tools such as the hand lens, Brunton compass, and the petrographic microscope.

Student Learning Outcomes, with Any Associations and Related Measures, Achievement Targets, Findings, and Action Plans

O 1: Constitution of the Earth
Each graduate will know what the earth is made of and how the various earth materials are distributed within the earth and on its surface.

**Documents:**
- LOESS results chart
- LOESS results data

**Related Measures:**

**M 1: "LOESS" Exit Survey**

*Source of Evidence:* Faculty pre-test / post-test of knowledge mastery

The Learning Outcomes Exit Survey for Seniors (LOESS) was given to six graduating seniors. The test consisted of 90 questions, 10 questions from each of nine geology courses. The courses are Geol 1121 (Introductory Geosciences I), Geol 1122 (Introductory Geosciences II), Geol 3002 (Introduction to Earth Materials), Geol 4006 (Sedimentary Environments and Stratigraphy), Geol 4013 (Structural Geology), Geol 4015 (Crystallography and Optical Mineralogy), Geol 4016 (Igneous and Metamorphic Petrology), Geol 4017 (Environmental Geology), and Geol 4007 (Hydrogeology). Geol 1121, 1122, 3002, 4006, 4013, 4015, and 4016 are required for the BS degree; Geol 4017 and 4007 are not required but are taken by almost every graduating student.

**Documents:**
- LOESS results chart
- LOESS results data

**Achievement Target:**

**Documents:**
- LOESS results chart
- LOESS results data
**Findings (2009-2010) - Achievement Target: Not Met**

The average score was 58%.

**Documents:**
- LOESS results chart
- LOESS results data

**O 2: Earth Processes**

Each graduate will understand the processes driving changes inside the earth and on the earth's surface.

**Documents:**
- LOESS results chart
- LOESS results data

**Related Measures:**

**M 1: "LOESS" Exit Survey**

**Source of Evidence:** Faculty pre-test / post-test of knowledge mastery

The Learning Outcomes Exit Survey for Seniors (LOESS) was given to six graduating seniors. The test consisted of 90 questions, 10 questions from each of nine geology courses. The courses are Geol 1121 (Introductory Geosciences I), Geol 1122 (Introductory Geosciences II), Geol 3002 (Introduction to Earth Materials), Geol 4006 (Sedimentary Environments and Stratigraphy), Geol 4013 (Structural Geology), Geol 4015 (Crystallography and Optical Mineralogy), Geol 4016 (Igneous and Metamorphic Petrology), Geol 4017 (Environmental Geology), and Geol 4007 (Hydrogeology). Geol 1121, 1122, 3002, 4006, 4013, 4015, and 4016 are required for the BS degree; Geol 4017 and 4007 are not required but are taken by almost every graduating student.
Achievement Target:
The overall performance on the LOESS exit survey by the student group will be at least 80%.

Documents:
- LOESS results chart
- LOESS results data

Findings (2009-2010) - Achievement Target: Not Met
The average score was 54%.

Documents:
- LOESS results chart
- LOESS results data

O 3: Earth History
Each graduate will have an understanding of the historical development of the earth.

Documents:
- LOESS results chart
- LOESS results data

Associations:

Standards:
Institutional Effectiveness
1 Outcomes of educational programs, including student learning outcomes (3.3.1.1)

General Education or Core Curriculum:
4 Critical Thinking

Related Measures:

M 1: "LOESS" Exit Survey

Source of Evidence: Faculty pre-test / post-test of knowledge mastery
The Learning Outcomes Exit Survey for Seniors (LOESS) was given to six graduating seniors. The test consisted of 90 questions, 10 questions from each of nine geology courses. The courses are Geol 1121 (Introductory Geosciences I), Geol
1122 (Introductory Geosciences II), Geol 3002 (Introduction to Earth Materials), Geol 4006 (Sedimentary Environments and Stratigraphy), Geol 4013 (Structural Geology), Geol 4015 (Crystallography and Optical Mineralogy), Geol 4016 (Igneous and Metamorphic Petrology), Geol 4017 (Environmental Geology), and Geol 4007 (Hydrogeology). Geol 1121, 1122, 3002, 4006, 4013, 4015, and 4016 are required for the BS degree; Geol 4017 and 4007 are not required but are taken by almost every graduating student.

**Documents:**
- LOESS results chart
- LOESS results data

**Achievement Target:**

The overall performance on the LOESS exit survey by the student group will be at least 80%.

**Documents:**
- LOESS results chart
- LOESS results data

**Findings (2009-2010) - Achievement Target: Met**

The average score was 81%.

**Documents:**
- LOESS results chart
- LOESS results data

**Analysis Answers**

**ACADEMIC QUESTION 1:**

What changes in the assessment process has your degree program made since last year's assessment report? Why were these changes made? What changes and improvements in the assessment process will you make in the coming academic year?
Since last year we have added the LOESS procedure, the exit survey, to our assessment. We made the change to give us a tool by which we could gauge and track the geology knowledge level reached by each student who was poised to graduate. For the coming year we will improve the survey because we think many of the questions on the survey failed to test properly the achievement or knowledge we expected. In particular, we think that many of the questions were too detailed, thereby testing minor or obscure points rather than broad concepts. We also think that the coverage of our 3 objectives on LOESS was too uneven for a good sampling. For next year we anticipate modifying LOESS so that earth history gets greater coverage.

**Document:**
- LOESS results data

**ACADEMIC QUESTION 2:**

What changes and improvements to your educational program will be made based on this year's assessment data? (In other words, what is the impact on your educational degree program of the data obtained from assessment findings?) If changes to curriculum or courses are made for other reasons, please explain.

At this point we plan no major changes to the program. Until our main assessment tool, the LOESS survey, is brought up to par, we don't want to "fix" something that might not be broken. We do anticipate, however, having each instructor consciously include adequate coverage of topics and concepts that we will be surveying on the LOESS survey in the future.

**Document:**
- LOESS results data

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**Detailed Assessment Report**

2009-2010 Geology MS

**Mission/Purpose**

The primary mission and goal is to produce a well-educated student at the MS degree level in Geology. That mission includes: delivering courses at the MS level relevant to what a MS student in Geology needs to know; and providing stimulating research opportunities at the MS level.

**Goals**

**G 1: MS degree in Geology**
Maintain and increase the number of students in the program.

**G 2: MS degree in Geology (graduation rate)**

Students should be completing the program on a timely basis.

**G 3: Quality of Thesis research**

Thesis research (for students enrolled in the thesis option) should be of high quality (well written, sound data, and sound interpretation, discussion and conclusions).

**G 4: MS degree in Geology (non-thesis project)**

Non-thesis projects should be well conceived (good research idea) and executed satisfactorily.

**Outcomes/Objectives, with Any Associations and Related Measures, Achievement Targets, Findings, and Action Plans**

**O 1: MS Degree in Geology (enrollment)**

A measurable outcome is to maintain and/or increase number of students graduating with MS degree in Geology.

**Related Measures:**

**M 1: MS Degree in Geology (enrollment)**

*Source of Evidence: Administrative measure - other*

For FA08-FA09, we enrolled three new students in the MS degree program. We need to increase the number of enrolled students.

**O 2: MS Degree Geology (Graduation rate)**

Timely graduation of MS degree students.

**Related Measures:**

**M 2: MS Degree in Geology (Graduation)**
Source of Evidence: Administrative measure - other
In FA08-SP09, we graduated four students with MS degree in Geology (Three thesis, one non-thesis).

O 3: MS Degree in Geology (quality of thesis)

Quality of thesis project is assessed on a 1-5 scale (5 = excellent, 4= very good, etc) by the thesis director, graduate director or department chair. Basis of evaluation includes: depth and coverage of topic, quality of data, quality of interpretations, discussion and conclusions).

Related Measures:

M 3: MS Degree in Geology (quality of thesis)

Source of Evidence: Senior thesis or culminating major project
Two students wrote MS degree theses in this period and were graded on 1-5 scale. Student 1: 5. Student 2: 3-4.

O 4: MS Degree in Geology (non thesis projects)

Non-thesis reports are assessed by the faculty directing the project on the basis of: depth of coverage of topic, quality of data collected, quality of interpretation, discussion and conclusions.

Related Measures:

M 4: MS degree in Geology (non thesis project)

Source of Evidence: Project, either individual or group
Non-thesis project is assessed in terms of quality of the work (topic, data collected, interpretation and discussion) by either the faculty member directing this non-thesis project, the graduate director, or department chair.
Appendix D2: Current course syllabi for all approved Critical Thinking through Writing courses

Syllabi for Geography 4764, Geography 4784, Geography/Geology 4830, and Geology 4006 appear on the following 21 pages.
INTRODUCTION TO URBAN GEOGRAPHY

Instructor: Dr. Katherine B. Hankins
Office: 349B Sparks Hall
Phone: (404) 413-5775
Office Hours: M 3-4 p.m., W 11 a.m.-12 p.m., or by appointment
Website: uLearn
E-mail: khankins@gsu.edu

This course examines the history and contemporary processes of urbanization, primarily in the North American context. In particular, we are concerned with the geography of these processes, resulting in differentiation of space and the creation of distinct places. This course covers a range of topics relevant to cities, including historical development, governance, social patterns and issues of social justice, economic roles, planning, contemporary problems, and the linkages among all of these. We will examine the geography of urbanization at several scales, ranging from the development of the North American urban system to the experiences of neighborhoods within cities.

The course goals include: to provide a historical context of North American urbanization and the contemporary patterns of urban growth and suburbanization; to inform your knowledge of the economic and social roles of cities; to encourage a geographic approach to understanding urban processes; and to help you to observe the landscape analytically.

CTW DESIGNATION
This course will be a pilot class that fulfills a University requirement for a Critical Thinking through Writing class for the geography major. The University defines critical thinking as "a wide range of cognitive skills and intellectual dispositions needed to effectively identify, analyze, and evaluate arguments and truth claims; to discover and overcome personal prejudices; to formulate and present convincing reasons in support of conclusions; and to make reasonable, intelligent decisions about what to believe and what to do." (Bassham, G., Irwin, W. Nordone, H., & Wallace, J., 2005. Critical Thinking: A Student's Introduction. New York: McGraw-Hill, page 1.). For geography, critical thinking involves the ability to recognize and evaluate truth claims, synthesize different approaches to knowledge/scientific findings, and articulate coherent and logical arguments. For this class, the reflection papers (described below) will be the primary exercise through with critical thinking is evaluated.

CLASS MEETINGS: MONDAYS AND WEDNESDAYS 1:00 p.m. – 2:45 p.m. Rm. 316 Kell

REQUIRED READINGS
Three books, which are available at the University bookstore, are required for this course. There will also be several readings available on uLearn. From time to time I may hand out or post additional reading materials.


This course does not have a formal textbook. Your readings in the course will inform and complement the lectures, but connecting the reading with the lectures will require particular attention and participation on your part.

**TENTATIVE COURSE EVALUATION**

<table>
<thead>
<tr>
<th>Evaluation Category</th>
<th>Points</th>
<th>Important Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>REFLECTION PAPERS (10 X 20 points)</td>
<td>200</td>
<td>weekly: (Sept 15 and Nov 10 required)</td>
</tr>
<tr>
<td>SUMMARIES</td>
<td>200</td>
<td>Sept 29 and Nov 17</td>
</tr>
<tr>
<td>MIDTERM EXAM</td>
<td>150</td>
<td>Oct 18</td>
</tr>
<tr>
<td>GROUP PROJECT PROPOSAL</td>
<td>25</td>
<td>Sept 13</td>
</tr>
<tr>
<td>GROUP PROJECT PROGRESS REPORT</td>
<td>25</td>
<td>Oct 25</td>
</tr>
<tr>
<td>GROUP PROJECT FINAL SUBMISSION</td>
<td>150</td>
<td>Nov 29 or Dec 1</td>
</tr>
<tr>
<td>FINAL EXAM</td>
<td>150</td>
<td>due by Dec 8th at 1 p.m.</td>
</tr>
<tr>
<td>PARTICIPATION</td>
<td>100</td>
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<tr>
<td>TOTAL</td>
<td>1000</td>
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</tbody>
</table>

Grades will be assigned based on the following:**

- 930 – 1000: A
- 900 – 929: A-
- 870 – 899: B+
- 830 – 869: B
- 800 – 830: B-
- 770 – 799: C+
- 730 – 769: C
- 700 – 730: C-
- 600 – 699: D
- Below 600: F

**Although most requirements for the graduate and undergraduate portions of the course are identical, the expectations and therefore evaluation of student work is not. Graduate students will be assessed based on expectations of graduate work, and undergraduates will be evaluated based on expectations of an upper-level undergraduate course.

**WRITING**

"How can I know what I think until I see what I say?" (E.M. Forester)

Writing is an integral part of the education process. It is the most important tool that you have available for presentation of your critical thinking skills. For the purpose of this course, the writing process will reveal the ways in which you are connecting authors’ arguments and points about facets of urban geography. There will be four main areas in which you will focus on writing: reading summaries, reflection papers, exams, and the final group project.

**SUMMARIES AND REFLECTIONS**

You are expected to keep a weekly journal of your readings, which consists of two parts: 1) a summary of each articles/chapters you’ve read and 2) your reflections or critical commentary on the week’s readings (both should be typed). You should be prepared to discuss your summaries and reflections in class each week.
1) SUMMARIES
Your summaries should include at least one paragraph per article/chapter and should highlight the authors’ main arguments/points. Each article/chapter summary should be at least 150 words. Your summaries will be collected twice during the semester, on September 29th (turn in weeks 1 - 6) and on November 17th (turn in weeks 7 - 12). It is advisable that you keep up with your summaries weekly even though they will be collected twice during the semester.

2) REFLECTIONS
In not more than one page, you should reflect on the readings by exploring the connections of the authors’ arguments. Your reflection papers may be guided by the questions posed each week in the syllabus. For example, you may consider whether the authors are essentially agreeing or disagreeing. Your reflection will be collected on Wednesday of each week (unless otherwise noted), although you may skip three weeks without penalty. (NOTE: Although you may skip three reflections, you are expected to summarize all articles/chapters and submit them when summaries are due). The purpose of reflection papers is to encourage you to read carefully, and consider critically, the literature being explored and to articulate your thoughts on paper. You will receive detailed feedback on your reflection papers. Using this feedback, you will have the opportunity to rewrite two of your reflection papers during the semester.

Reflection papers should do two things. First, they should demonstrate that you understand what the authors are arguing. This may require that you include a sentence or two summarizing the authors’ main points. Secondly, your reflection should indicate that you have thought about how the authors’ arguments/points are connected or in disagreement.

Two of your reflection papers are required to fulfill the CTW assessment portion of this class. You will receive a rubric and a critical thinking evaluation with the reflection papers that you are required to submit on September 15th and November 10th.

MIDTERM EXAM
You will have the option of an in-class exam, take-home exam, or field-study exercise for your midterm, which will take place/be due on October 18th.

TERM PROJECT
Given that this course is about urbanization and the experiences of different urban places, students will have an opportunity to analyze an urban theme in more detail, using Atlanta as a case study to illustrate that theme. You will need to submit a proposal for your project on September 13th and a progress report on October 25th. Final projects will be presented/turned in on November 29th or December 1st. More details about the final project will be handed out separately.

UNDERGRADUATES: Undergraduate students will be broken into self-selected groups to examine in detail an urban issue. Groups will present their research to the class in addition to submitting a paper.
GRADUATES: Graduate students will conduct the final project individually. Grads will present their research to the class in addition to submitting a paper.

FINAL EXAM
The final exam will be a take-home, essay exam, which will be due on December 8th by 1 p.m., although early submission is encouraged.
PARTICIPATION IN CLASS
As indicated above, your active participation in the class represents a significant percentage of your final grade. Participation includes actively engaging in class discussion, attending class regularly, and making a demonstrated effort to master the course material. The class-discussion format assumes that the relationship between all participants is collegial. Major differences in background and theoretical inclination that may become evident - as they often do in discussion-based classes - are to be faced openly and debated, but without any element of interpersonal rancor, or with comments that might close off discussion.

### TENTATIVE SCHEDULE OF TOPICS AND READINGS*

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Readings</th>
</tr>
</thead>
<tbody>
<tr>
<td>August 23 (M)</td>
<td>Introduction</td>
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<tr>
<td>August 25 (W)</td>
<td>Defining “Urban” and the Field of Urban Geography</td>
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<tr>
<td></td>
<td>Readings:</td>
<td></td>
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<tr>
<td></td>
<td>Mumford, L. “What is a City?” The City Reader, pp. 85-89</td>
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<tr>
<td></td>
<td>Jackson, K. Crabgrass Frontier:</td>
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<tr>
<td></td>
<td>o Introduction, pp. 3-11</td>
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<tr>
<td></td>
<td>o Chapter 1, “Suburbs as Slums” pp. 12-19</td>
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What are the defining features of (American) cities (and suburbs)?

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<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Readings</th>
</tr>
</thead>
<tbody>
<tr>
<td>August 30 – Sept 1</td>
<td>The Historical Development of U.S. Cities</td>
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<td></td>
<td>Readings:</td>
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<tr>
<td></td>
<td>Jackson, K. Crabgrass Frontier:</td>
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<tr>
<td></td>
<td>o Chapter 2, “The Transportation Revolution and the Erosion of the Walking City” pp. 20-44;</td>
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<td></td>
<td>o Chapter 5, “The Main Line: Elite Suburbs and Commuter Railroads” pp. 87-102</td>
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<td>o Chapter 6, “The Time of the Trolley” pp. 103-115</td>
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</table>

What are social, political, and economic forces that contributed to the development of cities in the United States?

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<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Readings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sept 6 (M)</td>
<td>NO CLASS (Labor Day)</td>
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<tr>
<td>Sept 8 (W)</td>
<td>Chicago week</td>
<td>Video: Chicago: City of the Century</td>
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<tr>
<td></td>
<td>Readings: portions of The Jungle by Upton Sinclair (uLearn)</td>
<td></td>
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</tbody>
</table>

Why did Chicago develop, and what major problems did it face?
Sept 13-15  Economic Processes and Problems

*Project proposal due Monday*

***Reflection paper is required (due Wednesday)***

*Readings:*

- Engels, F. “The Great Towns” *The City Reader*, pp. 50-58
- Wilson, W.J. “From Institutional to Jobless Ghetto” *The City Reader*, pp. 110-119

*According to the authors, what are the source(s) of and solution(s) to urban economic problems?*

Sept 20 - 22  Present-day U.S. Cities: Contemporary Urban Form

*Readings:*

- Jackson, K. *Crabgrass Frontier* (not required for reflection paper):
  - Chapter 9, “The New Age of Automobility” pp. 157-171
  - Chapter 10, “Suburban Development Between the Wars” pp. 172-189
  - Chapter 13, “The Baby Boom and the Age of the Subdivision” pp. 231-245
  - Chapter 14, “The Drive-in Culture of Contemporary America” pp. 246-271
- Fishman, R. “Beyond Suburbia: The Rise of the Technoburb” *The City Reader*, pp. 69-77
- Webber, M. “The Post-City Age” *The City Reader*, pp. 473-477

*Is the city dead?*

Sept 27 – 29  Gentrification

*Weeks 1-6 Summaries due*

*Readings:*

What are the reasons for gentrification in the 21st century?

October 4 – 6  Urban Governance: From Managerialism to Neoliberalism
Readings:
- Hackworth, J. 2007. The Neoliberal City (uLearn)
  - “Ch 1: The Place, Time, and Process of Neoliberal Urbanism”, pp. 1-15
  - “Ch 4: The Public-Private Partnership”, pp. 61-76
- Optional: Jackson, K. Crabgrass Frontier: Chapter 8, “Suburbs into Neighborhoods: The Rise and Fall of Municipal Annexation” pp. 138-156

How has the role of urban government changed?

October 11 - 13  New York week
Video: Robert Moses and New York
Readings:
- Jackson, K. Crabgrass Frontier
  - Chapter 3, “Home, Sweet Home: The House and the Yard” pp. 45-72
  - Chapter 7, “Affordable Homes for the Common Man” pp. 116-137

What is the role of government in spatializing urban poverty?

October 18 (M)  In-class midterm/Take-home midterm/field study due
October 20 (W) Architecture and Urban Planning (begin)

October 25 (M)  Architecture and Urban Planning (finish)
Term project progress report due
Reflections due today (instead of Wednesday)
Readings:
- Olmsted, F. “Public Parks and the Enlargement of Towns” The City Reader, pp. 307-313
- Howard, E. “Author’s Introduction” and “The Town-Country Magnet” The City Reader, pp. 314-321
- LeCorbusier, “A Contemporary City” The City Reader, pp. 322-330
• Wright, F.L. “Broadacre City: A New Community Plan” The City Reader, pp. 331-336

**What are ideals and goals of early urban planning and design?**

**October 27 (W) Guest Lecture: Jonathan Lewis, Urban Planner for the City of Atlanta**

**November 1 - 3 Urban Design and Social Life**

**Readings:**

- Whyte, W. “The Design of Spaces” The City Reader, pp. 448-455
- Duany, A. and E. Plater-Zyberk, “The Neighborhood, the District, and the Corridor” The City Reader, pp. 192-196
- Hankins, K. and E. Powers, “The Disappearance of the State from Urban Livability” Antipode 41(5). (uLearn)
- Duneier, M. Sidewalk. Introduction and Part I, pp. 3-111 (not required to be included in reflection paper)
- **Optional:** Jackson, K. Crabgrass Frontier: Chapter 4, “Romantic Suburbs” pp. 73-86

**How are contemporary spaces organized and experienced?**

**November 8 - 10 Urban Issues and Problems**

**Film: Sidewalk**

**Readings:**

***Reflection paper is required***

- Putnam, R. “Bowling Alone: America’s Declining Social Capital” The City Reader, pp. 120-128
- Jacobs, J. “The Uses of Sidewalks: Safety” The City Reader, pp. 98-102
- Davis, M. “Fortress L.A.” The City Reader, pp. 178-183
- Duneier: pp 188-216 and pp 293-330 (not required to be included in reflection paper)

**What is nature of public life in the city?**

**November 15 - 17 The Urban Present, Urban Futures**

**Weeks 7-12 Summaries due**

**Readings:**

- Hankins, K. and R. Cochran, “Racialized Practices and the (Re)making of a Place of Whiteness in Atlanta, Georgia,” under consideration for the Journal of Social and Cultural Geography. (uLearn)
- Fishman, “The American Metropolis at Century’s End: Past and Present Influences” in Housing Policy Debate (uLearn)

**What now and what next?**
November 22 (M)  Atlanta walking tour
November 24 (W)  NO CLASS (Thanksgiving holiday)

Nov 29 – Dec 1  Group presentations
Dec 6 (M)  Course wrap-up
Dec 8 (W)  Final exam, due by 1 p.m.

* The course syllabus is a general plan for the course; deviations announced to the class by the instructor may be necessary.

ACADEMIC HONESTY
All work submitted for this course must be completed in accordance with the Georgia State University’s policies on academic honesty and integrity. For a description of GSU’s policies, please consult the GSU section on Academic Regulations in the Undergraduate Catalog. If you are ever uncertain about these guidelines, please consult with the instructor. Any work you submit must be your own and should be submitted for this course only. If you are found in violation of the University's academic honesty policies, the severest punishment will be pursued.

The nitty-gritty required on all syllabi:

1. According to the Georgia State University undergraduate catalog, class attendance is expected; failure to attend classes regularly may result in poor course performance. The university requires instructors to verify attendance early in the term. Failure to attend classes may result in you not appearing on the Verification Roll and being dropped from the class. Please see section 1334 of the catalog at http://www.gsu.edu/es/catalogs_courses.html, and click on the appropriate catalog link to read about attendance policy (posted as a .pdf file).

2. All students should be familiar with the university’s course withdrawal procedures. These can be found in section 1332 of the undergraduate catalog.

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Geography 4784: Climatic Change
Fall 2010

INSTRUCTOR
Dr. Jeremy E. Diem
Phone: 404-413-5770
E-mail: jdiem@gsu.edu

OFFICE
Room 351B Sparks Hall
Office Hours: Friday, 9 A.M. to 11 A.M.

LECTURE
Tuesdays and Thursdays
4:00 P.M. to 5:15 P.M.
316 Kell Hall

COURSE DESCRIPTION
In this course, students will examine the extremely popular topic of climatic change. The course provides a comprehensive guide to the nature of climatic change. The main emphasis will be on human impacts on climate. Since this a somewhat controversial topic, critical thinking will be a vital activity for students.

TEXTBOOK

MATERIALS WEB SITE
http://gossamer.gsu.edu/data/G4784_6784
“student369” is the User name and Password
Students should download the textbook (IPCC_2007.pdf) from the above Web site.

LEARNING GOALS
At the end of this course, you should be able to:

• demonstrate knowledge of key geographical concepts, theories, methods, and facts;
• communicate thoughts and ideas effectively using scholarly writing;
• demonstrate effectively the ability to apply foundational knowledge when answering questions;
• demonstrate ability to think critically (i.e. accurately interpret and evaluate information, justify key results and procedures, acknowledge and assess assumptions; draw warranted and non-fallacious conclusions, thoughtfully analyze and evaluate multiple points of view, recognize the need for additional knowledge to answer a question);
• identify the relationships among geography and other disciplines;
<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Chapter</th>
<th>Assignment Due</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aug. 24</td>
<td>Course Overview</td>
<td></td>
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<tr>
<td>Aug. 26</td>
<td>Controls of Climatic Change I</td>
<td></td>
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<tr>
<td>Aug. 31</td>
<td>Controls of Climatic Change II</td>
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<tr>
<td>Sep. 2</td>
<td>Controls of Climatic Change III</td>
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<tr>
<td>Sep. 7</td>
<td>Earth's Past Climates I</td>
<td>6</td>
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<tr>
<td>Sep. 9</td>
<td>Earth's Past Climates II</td>
<td>6</td>
<td>Paragraph #1</td>
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<tr>
<td>Sep. 14</td>
<td>Earth's Past Climates III</td>
<td>6</td>
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</tr>
<tr>
<td>Sep. 16</td>
<td>Changes in Atmospheric Constituents and Radiative Forcing I</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Sep. 21</td>
<td>Changes in Atmospheric Constituents and Radiative Forcing II</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Sep. 23</td>
<td>Changes in Atmospheric Constituents and Radiative Forcing III</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Sep. 28</td>
<td>Observations: Atmospheric Surface and Climate Change I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Sep. 30</td>
<td>Observations: Atmospheric Surface and Climate Change II</td>
<td>3</td>
<td>Paragraph #2</td>
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<tr>
<td>Oct. 5</td>
<td>Observations: Atmospheric Surface and Climate Change III</td>
<td>3</td>
<td></td>
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<tr>
<td>Oct. 7</td>
<td>Observations: Atmospheric Surface and Climate Change IV</td>
<td>3</td>
<td></td>
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<tr>
<td>Oct. 12</td>
<td>Observations: Changes in Snow, Ice and Frozen Ground I</td>
<td>4</td>
<td>First take-home examination</td>
</tr>
<tr>
<td>Oct. 14</td>
<td>Observations: Changes in Snow, Ice and Frozen Ground II</td>
<td>4</td>
<td></td>
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<tr>
<td>Oct. 19</td>
<td>Observations: Changes in Snow, Ice and Frozen Ground III</td>
<td>4</td>
<td></td>
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<tr>
<td>Oct. 21</td>
<td>Observations: Ocean Climate Change and Sea Level</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Oct. 26</td>
<td>Observations: Ocean Climate Change and Sea Level</td>
<td>5</td>
<td>Paragraph #3</td>
</tr>
<tr>
<td>Oct. 28</td>
<td><em>The Great Global Warming Swindle</em></td>
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<tr>
<td>Nov. 2</td>
<td>Discussion of Climate Change</td>
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<tr>
<td>Nov. 4</td>
<td>Global Climate Projections I</td>
<td>10</td>
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<tr>
<td>Nov. 9</td>
<td>Climate Chang Lab Exercise</td>
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<tr>
<td>Nov. 11</td>
<td>Climate Chang Lab Exercise</td>
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<tr>
<td>Nov. 16</td>
<td>Introduction to EdGCM and Developing Simulations</td>
<td></td>
<td>Lab assessment</td>
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<tr>
<td>Nov. 18</td>
<td>Climate Modeling – Running the Simulations</td>
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<tr>
<td>Nov. 23</td>
<td>No class - Thanksgiving Break</td>
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<tr>
<td>Nov. 25</td>
<td>No class - Thanksgiving Break</td>
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<tr>
<td>Nov. 30</td>
<td>Climate Modeling – Analysis of Simulation Results</td>
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<tr>
<td>Dec. 2</td>
<td>Climate Modeling – eJournal write-up</td>
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<tr>
<td>Dec. 9</td>
<td>Group Presentations</td>
<td></td>
<td>Second take-home examination</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>Simulation write-up</td>
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</tbody>
</table>
**SUMMARIES OF ASSIGNMENTS**

Since this is a writing-centered course, students will be required to complete multiple writing assignments. Summaries of each assignment are as follows:

**Paragraphs**

The content of a paragraph is portion of material from a single lecture. Each paragraph should focus on a specific topic; therefore, each paragraph needs a concise and explicit topic sentence. Each student is responsible for three paragraphs throughout the semester. The purpose of the paragraphs is to give students practice writing and researching a topic, and to subsequently provide them with continual feedback on their writing throughout the semester.

**Take-home examinations**

These exams are designed to assess student performance in knowledge acquisition and application. Student responses to questions are expected to be concise (e.g., one paragraph); the responses will be evaluated based on content, format, and style.

**Assessment of lab exercise**

Students will write an assessment of a climate-change lab exercise currently used in Geography 1112.

**Research project**

This project is given to improve students’ research and writing skills. Students will work in groups to produce research papers. Each project will involve climate simulations using the EdGCM (Educational Global Climate Model) developed by the National Aeronautical and Space Administration (NASA).

**GRADING**

Student performance in the course will be evaluated using written assignments. The weighting of the above measures for undergraduate students and graduate students is as follows:

- Lecture paragraphs ................... 35%
- First examination .................... 20%
- Lab assessment ....................... 10%
- Research project ...................... 15%
- Second examination ................. 20%

**COURSE GRADES**

- A+ = 98% - 100%
- A = 93% - 97%
- A- = 90% - 92%
- B+ = 87% - 89%
- B = 83% - 86%
- B- = 80% - 82%
- C+ = 77% - 79%
- C = 73% - 76%
- C- = 70% - 72%
- D = 60% - 69%
- F = < 60%
Although specific policies and requirements will vary from class to class and from instructor to instructor, the following information applies in general to all courses in the Dept. of Geosciences.

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This course syllabus provides a general plan for the course; deviations may be necessary.
GOALS AND OBJECTIVES
This course is designed to be a capstone experience for the geosciences major. As such, it should be a forum for students to organize conceptually the knowledge they have gained through different courses in their major and to explore other dimensions of the discipline(s). Through developing a research project, listening to guest lectures, and through class discussions, the course should provide an overview of geography and geology, their main intellectual contours and the kinds of insights that work in the geosciences (not always done by geoscientists) has produced. Furthermore, it should prepare students to think about professional and academic options beyond graduation.

Objectives include: 1) to expose students to the depth and breadth of the discipline(s); 2) to conduct an original research project in students’ area of interest; 3) to create a portfolio that demonstrates the skills developed from the major; and 4) to gain exposure to contemporary ideas and debates to which students can apply their academic training.

CLASS MEETINGS: Thursdays, 4 p.m. to 7:20 p.m., 316 Kell Hall

CTW DESIGNATION
This course fulfills a University requirement for a Critical Thinking through Writing class for the geography major and for the geology major. The University defines critical thinking as "a wide range of cognitive skills and intellectual dispositions needed to effectively identify, analyze, and evaluate arguments and truth claims; to discover and overcome personal prejudices; to formulate and present convincing reasons in support of conclusions; and to make reasonable, intelligent decisions about what to believe and what to do." (Bassham, G., Irwin, W. Nordone, H., & Wallace, J., 2005. Critical Thinking: A Student's Introduction. New York: McGraw-Hill, page 1.). For the geosciences, critical thinking involves the ability to recognize and evaluate truth claims, synthesize different approaches to knowledge/scientific findings, and articulate coherent and logical arguments. The CTW assignment involves the drafting and redrafting of the term paper, described below.
EVALUATION
Research ethics essay: 10%
Four speaker evaluations (5% each): 20%
Term Paper: proposal: 5%
   Draft 1: 15%
   Draft 2: 20%
   Presentation: 10%
Final portfolio: 10%
Attendance and participation: 10%

RESEARCH ETHICS ESSAY
In 3-5 pages, students should articulate what it means to think about and conduct research in an ethical manner. Due February 18th. More detailed instructions will be handed out separately (10%)

SPEAKER EVALUATIONS
Students will attend a variety of guest lectures throughout the semester. Students are expected to evaluate the speakers and to think through the points speakers make, the issues raised, and lingering questions that students may have. Four of these should be handed in during the semester.

TERM PAPER
Your term paper should be approximately 15 pages (double-spaced, 12 pt Times New Roman font, 1” margins) on a topic that is relevant to your interests in your major. The format is flexible: your paper might be a critical literature review of a body of research, a secondary empirical analysis of a chosen topic, or even your own primary research. The important common requirement is a demonstrated ability to assemble and peruse relevant literature, to synthesize it clearly, to critically evaluate its usefulness, to identify tensions or questions that arise, and to write a carefully edited and coherent paper. A one-page proposal of your term paper is due February 4th, a first draft (10 pages) is due March 18th and your final paper (15 pages) is due April 22nd. You are also required to present your research in a 15-minute talk (with PowerPoint slides) on April 22nd.

PORTFOLIO
The portfolio consists of the following: 1) your resume/CV; 2) the final term paper; 3) a CD with your PowerPoint presentation; 4) writing samples from other courses you’ve taken; 5) a list of skills you’ve developed through your coursework or work experience; 6) other products, such as maps or websites, that you’ve developed through your academic/professional career. Due no later than Thursday, April 29th.

PARTICIPATION
As indicated above, your active participation in class represents a significant percentage of your final grade. All students are expected to contribute to class discussions. You are expected to participate in the discussion by coming to class prepared. If you miss more than two classes, you will be penalized at least one letter grade.
### Important dates

**Schedule**

<table>
<thead>
<tr>
<th>Week</th>
<th><strong>Introduction to Senior Seminar</strong></th>
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</table>
| **January 14th** | Go over outline of the semester  
Develop script for Major in a Minute for Geosciences |
| **Homework** | Identify research topic for your term paper |

<table>
<thead>
<tr>
<th>Week</th>
<th><strong>Conducting research in the Geosciences</strong></th>
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</table>
| **January 21st** | 4 p.m.: Guest speaker: Dr. Crawford Elliott  
5 p.m.: Geosciences Club meeting  
In-class discussion: How do you identify a research topic? |
| **Due Today** | Identify research topic for discussion in class. |
| **Homework** | CITI Training http://www.citiprogram.org/  
Develop paper proposal |

<table>
<thead>
<tr>
<th>Week</th>
<th><strong>Developing research questions</strong></th>
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</table>
| **January 28th** | 4 p.m.: SPECIAL SPEAKER: Dr. Jim Bross, Professor of Law, Georgia State University, 4 p.m., 718 General Classroom Building  
5 p.m.: Guest speaker: Dr. Jordan Clayton  
In-class discussion: How do you identify a research question from a research topic? |
| **Homework** | CITI Training http://www.citiprogram.org/  
Develop paper proposal |

<table>
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<tr>
<th>Week</th>
<th><strong>Research ethics: Understanding ethical dilemmas in research</strong></th>
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</table>
| **February 4th** | 4 p.m.: Guest speaker: Dr. Parama Roy  
In-class discussion: What are different kinds of research? What are ethical issues associated with different research approaches? |
| **Due Today** | Paper proposal due |
| **Homework** | CITI Training http://www.citiprogram.org/  
Think about research ethics |

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<tr>
<th>Week</th>
<th><strong>The politics of knowledge</strong></th>
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| **February 11th** | 4 p.m.: SPECIAL SPEAKER: Neill Herring, lobbyist, the Georgia Chapter of the Sierra Club  
5 p.m.: Guest speaker: Dr. Jeremy Crampton  
In-class discussion: What do you do with knowledge? Is some knowledge “good”? Is some knowledge “bad”? |
| **Due Today** | CITI Training due |
| **Homework** | Ethics essay |

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<tr>
<th>Week</th>
<th><strong>Doing field research</strong></th>
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</table>
| **February 18th** | 4 p.m.: Guest speaker: Dr. Larry Kiage  
5 p.m.: Guest speaker: Dr. Dan Deocampo  
In-class discussion: How do you link research questions with appropriate methods? |
<p>| <strong>Due Today</strong> | Ethics essay due |
| <strong>Homework</strong> | Work on your paper: what methods will you use? |</p>
<table>
<thead>
<tr>
<th>Week 7</th>
<th>Writing research</th>
</tr>
</thead>
</table>
| February 25th | 4 p.m.: Guest speaker: Dr. Tim LaTour  
5 p.m.: Guest speaker: Dr. Hassan Babaie  
In-class discussion: How do you communicate research ideas and findings? What are appropriate writing styles for presenting your research? |
| **Homework** | Work on your paper |

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<tr>
<th>Week 8</th>
<th>Professional development, part I</th>
</tr>
</thead>
</table>
| March 4th | 4 p.m.: Guest speaker: Dr. Dajun Dai  
5 p.m.: Guest speaker: Dr. John Allensworth  
In-class discussion: How do you make the transition from academia to a job? |
| **Homework** | Work on your paper |

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<thead>
<tr>
<th>Week 9</th>
<th>NO CLASS (SPRING BREAK)</th>
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<tbody>
<tr>
<td>March 11th</td>
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<tr>
<th>Week 10</th>
<th>Professional development, part II</th>
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</table>
| March 18th | 4 p.m.: SPECIAL SPEAKER: Frank Stephens, Gwinnett County  
In-class discussion: how to identify the job/career you want |
| **Due Today** | Draft 1 of term paper (10 pages) |

<table>
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<tr>
<th>Week 11</th>
<th>Resume/CVs and Presenting your skills</th>
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</thead>
</table>
| March 25th | 4 p.m.: Guest speaker: Dr. Seth Rose  
In-class discussion: How do you represent what you know? What are your skills? |
| **Homework** | Develop resume/CV; Develop list of organizations, companies that are appealing |

<table>
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<tr>
<th>Week 12</th>
<th>Next steps: a job or a career?</th>
</tr>
</thead>
</table>
| April 1st | 4 p.m.: Guest speaker: Representative from Career Services  
5 p.m.: Guest speaker: Dr. Leslie Edwards  
In-class discussion: how do you get the job/career you want? |
| **Due today** | Resume/CV due |

<table>
<thead>
<tr>
<th>Week 13</th>
<th>Presenting research</th>
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</table>
| April 8th | 4 p.m.: Guest speaker: Dr. Eirik Krogstad  
5 p.m.: Guest speaker: Dr. Ken Terrell  
In-class discussion: How do you present research to your academic peers and to the broader public? |
| **Homework** | Develop presentation |

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<tr>
<th>Week 14</th>
<th>Applications Week</th>
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<tbody>
<tr>
<td>April 15th</td>
<td>Work on paper, presentation, and remaining components of the portfolio</td>
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</tbody>
</table>
Week 15  Student Presentations
April 22nd  15-minute student presentations
Due Today  Draft 2 of term paper (15 pages)

Week 16  Career Night
April 29th  4 p.m.: SPECIAL SPEAKER: Dr. David Feldman, University of California, Irvine
           5:30 p.m.  Mix and mingle with alumni and local area businesses and organizations
Due Today  Final portfolio due (no later than) today.

*This syllabus represents a plan for the course. Deviations announced to the class from the instructors may be necessary.

Policies you should know:

Policy on Academic Honesty: In this class we will follow the University system policy on academic honesty that is published in On Campus: The Undergraduate Co-Curricular Affairs Handbook and is available to all members of the university community. The policy represents a core value of the university and all members of the university community are responsible for abiding by its tenets. Lack of knowledge of this policy is not an acceptable defense to any charge of academic dishonesty. All members of the academic community - students, faculty, and staff - are expected to report violations of these standards of academic conduct to the appropriate authorities. The minimal penalty for cheating in this class is the grade of F.

Computer Access: Each student must have access to an on-line computer and is responsible for reading all messages sent to his/her university email address, and any other assignments that require the use of a computer. Class changes and/or updates may be conveyed via email, in which case the student is considered to have been informed. The student is required to check this university email box regularly. If you do not want to check your student e-mail box, you should see to it that your student e-mail is forwarded to an account that you do read regularly.

Attendance & Time Commitment: Weekly attendance is very important (see “Attendance and Participation”). Missed classes cannot be 'made up'. The university requires instructors to verify attendance early in the term. Failure to attend classes may result in you not appearing on the Verification Roll and being dropped from the class. Please see section 1334 of the catalog at http://www.gsu.edu/es/catalogs_courses.html, and click on the appropriate catalog link to read about attendance policy (posted as a .pdf file).

Withdrawal Policy: The last day to withdraw from the class and possibly receive a "W" is March 1, 2010. Unless hardship status is granted by the Office of the Assistant Dean of Students, any withdrawal after March 2, 2010 will result in a "WF". The new campus policy regarding withdrawals can be found at http://www.gsu.edu/es/20399.html

Accommodations for students with disabilities: Georgia State University complies with Section 504 of the Rehabilitation Act and the Americans with Disabilities Act. Students with disabilities who seek academic accommodations must first take appropriate documentation to the Office of Disability Services locate in Suite 230 of the New Student Center.
SYLLABUS

Spring, 2008 -- Geology 4006

SEDIMENTARY ENVIRONMENTS & STRATIGRAPHY

Lectures: Mon & Wed 11:00-12:15  Laboratories: Mon 1:00-3:45

Instructor: Dr. Daniel Deocampo  
Office Hours: Tues & Wed 2-3 PM

Contact: 404-413-5750; geodmd@langate.gsu.edu

Catalog Description: Prerequisite: Geol 3002. Three lecture and three laboratory hours a week, plus field trips. Properties of Sediments; origin, classification, and description of sedimentary rocks; principles of stratigraphy, analysis of sedimentary facies and environments of deposition.

CTW Designation: This course fulfills a University requirement for a Critical Thinking through Writing class for the geology major. The University defines critical thinking as "a wide range of cognitive skills and intellectual dispositions needed to effectively identify, analyze, and evaluate arguments and truth claims; to discover and overcome personal prejudices; to formulate and present convincing reasons in support of conclusions; and to make reasonable, intelligent decisions about what to believe and what to do." (Bassham, G., Irwin, W. Nordone, H., & Wallace, J., 2005. Critical Thinking: A Student's Introduction. New York: McGraw-Hill, page 1.). For geology, critical thinking involves the ability to recognize and evaluate truth claims, synthesize different approaches to knowledge/scientific findings, and articulate coherent and logical arguments.


Purpose: The supposed purpose of this course is to teach you about sedimentary environments, sediments, and sedimentary rocks. But really, this is one of those courses that is supposed to teach you to “think like a geologist.” That means that you should come out of it thinking, writing, and speaking clearly about geological materials and processes in four dimensions. We will focus on sediments, the environments they form in, and the rocks they make, but the lessons we learn are applicable to all other areas of geosciences.

Learning Objectives: This course is designed to provide geology majors and other interested students with an understanding of the composition, classification, deposition, genesis and correlation of sedimentary rocks. Students will become proficient at description of clastic and carbonate units in outcrop, hand specimen and thin section. Field relations, lectures and discussions will be used to identify common environments of deposition. Examples from local formations will be used to explore stratigraphic nomenclature, facies relationships and correlation of sedimentary sequences. A common theme for the course will be the tie between field relations, macroscopic and microscopic descriptions, and depositional models.
What I Think You Already Know: During the first week of classes, you will take a short test to assess your current knowledge of sedimentology and stratigraphy (this won’t affect your grade). Below is a pretty good summary of what I think (hope?) you already know from previous studies. If you have no clue about one of these topics, please come see me.

- the 3 main types of plate margins, and within this, the three types of convergent margins. You should be able to draw a reasonable cross-section through these margin types and have a pretty good idea of the rock types that form in them.
- how to tell the difference between intrusive and extrusive igneous rocks and know what those terms mean.
- how to recognize metamorphic rocks in hand specimen and in thin-section – slate, phyllite, schist, gneiss, quartzite and marble. (these will be fragments in sedimentary rocks)
- the difference between a chemical and a clastic sedimentary rock.
- how to recognize 3 different sandstones (arkose, arenite and greywacke), shales, siltstones and conglomerates in hand specimen.
- differentiate between a limestone and a dolostone in hand specimen.
- how to identify quartz (massive and microcrystalline), feldspars (K/orthoclase and Ca/Na plagioclase) and micas in hand specimen.
- how to tell the difference between a rock and a mineral. (Sometimes there isn’t a difference; e.g., gypsum, halite, etc.).
- what is meant by strike and dip.
- given a reasonably simple geologic map, be able to outline a geologic history of the mapped region.

Topics covered will include:

Principles of sedimentology and physical properties of sedimentary rocks:
Sedimentary textures and primary sedimentary structures, mechanisms of grain transport, hydraulic equations that describe grain movement, flow regimes.

Classification and deposition of clastic sedimentary rocks:
Mineralogy and chemical stability of siliciclastic sedimentary rocks and classification systems for siliciclastic sediments (including sandstone classification methods by Dickinson, Folk, Gilbert and McBride), common environments of deposition for siliciclastic sediments and models for deposition in fluvial, alluvial, lacustrine, glacial, estuarine, lagoonal, beach, shallow marine and neritic environments.

Classification and deposition of carbonate and other non-siliciclastic sedimentary rocks:
Mineralogy and chemical stability of non-siliciclastic sedimentary rocks including carbonate, evaporite, biogenic silica, ironstone and carbonaceous deposits; Folk and Dunham’s carbonate classification systems; examples of carbonate depositional environments including shallow carbonate shelf systems, modern reef deposits and ancient reef systems.

Stratigraphic nomenclature and principles of stratigraphy: Principles of stratigraphic nomenclature, lithostratigraphy, stratigraphic units in Georgia, formation and emplacement of petroleum, diagenesis of sedimentary rocks, basin evolution.

Grades: Grades will be assigned on the following scale, with plus and minus grades given at the numeric boundaries: A=90-100%; B=80-89%; C=70-79%; D=60-69%; below 60%=F
There is no extra credit, and exam grades will not be curved. If you must miss a lab, quiz or exam, notify me before the exercise so that we can make alternate arrangements.
Missed exercises without prior arrangement will be given a grade of zero. All assignments must be turned in at the beginning of class. Academic misconduct will result in a grade of zero for that exercise, and will be reported to the Department of Geosciences or the Dean of Students.
Laboratory assignments and field trips will combine to make a significant proportion of your grade. If you miss one of these, I must approve your reason in advance, and may give a replacement assignment. There will be no make-up exercises for laboratory assignments. Your grade will be calculated as follows:

- Exam #1: 20%
- Exam #2: 20%
- Exam #3: 20%
- Stratigraphy project (Geology of Georgia): 15%
- Combined labs and other assignments: 20%

(Approximately 1 per week)
<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Reading **</th>
<th>Lab</th>
<th>Due dates</th>
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<tbody>
<tr>
<td>Jan 7</td>
<td>Geology of Georgia, Introduction to Sediment</td>
<td></td>
<td>1. Sediment types and shape analysis.</td>
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<tr>
<td>Jan 9</td>
<td>Weathering and Soils</td>
<td>Ch. 1</td>
<td></td>
<td>Lab 1 due</td>
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<td>Jan 14</td>
<td>Transport &amp; Deposition</td>
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<td>2. Grain Size Analysis</td>
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<td>Jan 16</td>
<td>Sedimentary Textures</td>
<td>Ch. 2</td>
<td></td>
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<td>Jan 21</td>
<td>MLK Holiday</td>
<td>Ch. 3</td>
<td>-- none --</td>
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<tr>
<td>Jan 23</td>
<td>Sed. Textures &amp; Sed. Structures</td>
<td></td>
<td></td>
<td>Lab 2 due</td>
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<tr>
<td>Jan 28</td>
<td>Sedimentary Structures</td>
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<td>3. Sedimentary Structures</td>
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<td>Jan 30</td>
<td>Siliciclastic Sedimentary Rocks</td>
<td>Ch. 1-4</td>
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<td>Feb 4</td>
<td>Siliciclastic Rocks</td>
<td>Ch. 5</td>
<td>4. Sandstones &amp; Coarse Sed. Rocks</td>
<td>Lab 3 due; GOG: Choose GA stratigraphic unit</td>
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<tr>
<td>Feb 6</td>
<td>Carbonate Rocks</td>
<td>Ch. 5</td>
<td></td>
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<tr>
<td>Feb 11</td>
<td>Exam 1</td>
<td>Ch. 6</td>
<td>5. Mudstones</td>
<td>Lab 4 due</td>
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<tr>
<td>Feb 13</td>
<td>Carbonate Rocks</td>
<td>Ch. 6</td>
<td></td>
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<tr>
<td>Feb 18</td>
<td>Chemical/biochemical/ carbonaceous rocks</td>
<td>Ch. 7</td>
<td>6. Carbonate Rocks</td>
<td>Lab 5 due</td>
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<td>Feb 20</td>
<td>Continental Depositional Environments – Alluvial fan, Fluvial</td>
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<tr>
<td>Feb 27</td>
<td>Marginal marine – Deltas, Beach</td>
<td>Ch. 8</td>
<td></td>
<td>GOG: Annotated Ref. Due</td>
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<tr>
<td>Mar 3, 5</td>
<td>Spring Break</td>
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<tr>
<td>Mar 10</td>
<td>Estuarine, Lagoonal, Tidal Flat</td>
<td>Ch. 9</td>
<td>7. Insoluble Residue/acetate peel</td>
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<tr>
<td>Mar 12</td>
<td>Estuarine, Lagoonal, Tidal Flat</td>
<td>Ch. 10</td>
<td></td>
<td>GOG: Outline Due</td>
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<tr>
<td>Mar 17</td>
<td>Exam 2</td>
<td></td>
<td>8. Paleocurrent interpretation</td>
<td>Lab 7 due</td>
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<tr>
<td>Mar 19</td>
<td>Marine Shelf &amp; tidal</td>
<td>Ch. 10</td>
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<tr>
<td>(FIELD)</td>
<td>Friday – Sunday – Georgia Coast and Coastal plain <strong>Field Trip</strong></td>
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<tr>
<td>Mar 24</td>
<td>Carbonate environments</td>
<td>Ch. 11</td>
<td>9. Depositional Environments</td>
<td>Lab 8 due</td>
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<tr>
<td>Mar 26</td>
<td>Carbonate environments</td>
<td>Ch. 11</td>
<td></td>
<td>GOG: Figures due</td>
</tr>
<tr>
<td>Mar 31</td>
<td>Lithostratigraphy</td>
<td>Ch. 12</td>
<td>10. Facies Exercise</td>
<td>Lab 9 due</td>
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<tr>
<td>Apr 2</td>
<td>Lithostratigraphy</td>
<td>Ch. 12</td>
<td></td>
<td></td>
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<tr>
<td>(FIELD)</td>
<td>Saturday – NW GA Field Trip</td>
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<td>11. Core/Well log project</td>
<td>Lab 10 due</td>
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<tr>
<td>Apr 7</td>
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<td>Ch. 9-12</td>
<td></td>
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<tr>
<td>Apr 9</td>
<td>Seismic, Sequence Stratigraphy</td>
<td>Ch. 13</td>
<td>GOG: First Draft due</td>
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<tr>
<td>Apr 14</td>
<td>Sequence &amp; Magnetic Strat.</td>
<td>Ch. 13</td>
<td>12. Sequence Stratigraphy</td>
<td>Lab 11 due</td>
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<tr>
<td>Apr 16</td>
<td>Biostratigraphy</td>
<td>Ch. 14</td>
<td></td>
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<tr>
<td>Apr 21</td>
<td>Biostrat. &amp; Chronostratigraphy</td>
<td>Ch. 14 &amp; 15</td>
<td>13. Biostratigraphy</td>
<td>Lab 12 due</td>
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<tr>
<td>Apr 23</td>
<td>Geological Time</td>
<td>Ch. 15</td>
<td></td>
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<tr>
<td>Apr 28</td>
<td>Geol. Time &amp; Basin Analysis</td>
<td>Ch. 15 &amp; 16</td>
<td>Presentations</td>
<td>Lab 13 due</td>
</tr>
<tr>
<td>Apr 30</td>
<td>Basin Analysis</td>
<td>Ch. 16</td>
<td></td>
<td>GOG: Revised paper due</td>
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<tr>
<td>FINAL</td>
<td>Exam 3</td>
<td></td>
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</tr>
</tbody>
</table>

** Text *Principles of Sedimentology and Stratigraphy, 4th edition, Sam Boggs, Jr.*
Appendix D3: Degree requirements for each program

B.A. in Geography

Areas A-E: Core Curriculum Recommendations

Students majoring in geography are expected to complete Geog 1101 (in Areas E or F), Geog 1112 and 1113 (in Areas D or F), Geog 2206, and Math 1070 (in Area D or F) with a grade of C or higher.

Area F: Courses Appropriate to the Major Field (18)

1. Required Courses (3-17)
   - Geog 1101 Introduction to Human Geography (3) (if not taken in Area E)
   - Geog 1112 Introduction to Weather and Climate (4) (if not taken in Area D)
   - Geog 1113 Introduction to Landforms (4) (if not taken in Area D)
   - Geog 2206 Introductory Mapping and Geographic Information Science (4)
   - Math 1070 Elementary Statistics (3) (if not taken in Area D)

2. Select additional courses from the following to complete the 18 hours in Area F.

Any geography course at the 1000/2000 level not taken in Area E. AAS 2010, Anth 2030, Anth 2020, Econ 2105, Econ 2106, Geol 1121, Geol 1122, Geol 2001, Hist (any course not taken in Area E), Lang 1001 (if student has no previous experience with language), Lang 1002, Phil 1010, PolS 1101, PolS 2401, Psyc 1101, Soci 1101, Soci 1160, WSt 2010.

Area G: Major Courses (36-39)

A grade of C or higher is required in all major courses.

1. Required Courses to fulfill CTW requirement (8).
   Choose two of the following:
   - Geog 4764 Urban Geography (4)
   - Geog 4784 Climatic Change (4)
   - Geog 4830 Senior Seminar (4)

2. Major Requirements (19)
   - Geog 4518 Digital Cartography (4)
   - Geog 4520 Quantitative Spatial Analysis (4)
   - Geog 4644 Environmental Conservation (4)
   - Geog 4764 Urban Geography (4) if not taken for CTW
   - Geog 4778 Political Geography (3)
   - Geog 4784 Climatic Change (4) if not taken for CTW
   - Geog 4830 Senior Seminar (4) if not taken for CTW

3. Geography majors may select concentrations in General Geography, Human Geography, Physical Geography, Geographic Information Science, or Pre-Education.
General Geography Concentration

Students must fulfill the major requirements and take three additional geography courses at the 3000 level or higher.

Human Geography Concentration

Students must fulfill the major requirements and select three courses from the following:

- Geog 4408 Geography of the Middle East and North Africa (4)
- Geog 4760 Cultural Geography (3)
- Geog 4762 Economic Geography (4)
- Geog 4768 Metropolitan Atlanta (3)
- Geog 4772 Geography of Urban and Regional Development (3)
- Geog 4774 Contemporary Urban Theory and Issues (3)
- Geog 4780 Advanced Systematic Geography (3) (if topic is applicable)

Physical Geography Concentration

Students must fulfill the major requirements and select three courses from the following:

- Geog 4640 Geomorphology (4)
- Geog 4642 Advanced Weather and Climate (4)
- Geog 4646 Water Resources Management (4)
- Geog 4648 Biogeography (4)
- Geog 4650 Applied Hydrology (4)
- Geog 4780 Advanced Systematic Geography (3) (if topic is applicable)

Geographic Information Science Concentration

Students must fulfill the major requirements and select three courses from the following:

- Geog 4530 Introduction to Remote Sensing (4)
- Geog 4532 Geographic Information Systems (4)
- Geog 4533 Introduction to GIS Applications (4)
- Geog 4534 Advanced Geographic Information Systems (4)
- Geog 4780 Advanced Systematic Geography (3) (if topic is applicable)

Pre-Education Concentration

The Social Studies Education Concentration in Geography is designed for students who want to be secondary school teachers. This degree provides the initial teaching preparation for the Master of Arts in Teaching (M.A.T.) Program in Social Studies Education in the College of Education at Georgia State University, or similar Master's degrees at other universities. Students pursuing this concentration must complete all major requirements and choose two or more allied fields from
other departments, taking a minimum of nine hours of 3000-4000 level courses in each allied field. Students with a concentration in Geography may choose the following allied fields:

- Anthropology, Psychology, or Sociology (select one)
- Economics
- History
- Political Science
- Education (Required: EXC 4020; along with two of the following: IT 3210, EDCI 3200, EDUC 3010, EDUC 4982, EDSS 3400, and EDLA 3200)

Geography as an allied field consists of any three geography courses at the 3000 level or higher.

Area H: Minor and Additional Courses

Students majoring in geography are not required to take a minor.

Minor in Geography

Students choosing to complete a minor in geography should complete the following requirements (1 and 2). (15-20). A grade of C or higher is required in all courses counting toward the minor. Students taking more than 15 hours in geography courses may count the additional hours toward their electives or may consider completing a double major.

1. Select one course
   - Geog 1101 Introduction to Human Geography (3)
   - Geog 1112 Introduction to Weather and Climate (4)
   - Geog 1113 Introduction to Landforms (4)
2. Select at least 12 hours of geography courses at the 3000 level or higher.

B.S. in Geology

Areas A-E: Core Curriculum Recommendations

1. Required course:
   - Math 1113 Precalculus (3) (or higher-level mathematics course)
2. Area D:
   - Recommended courses:
     - Geol 1121K Introductory Geosciences I (4)
     - Geol 1122K Introductory Geosciences II (4)
   - Required course:
     - Math 1070 Elementary Statistics (3) or
     - Math 2211 Calculus of One Variable I (4) (or higher-level mathematics course)
Credit hours not needed in Area D will count in Area F or in the second 60 hours beyond the core curriculum.

**Area F: Courses Appropriate to the Major Field (18)**

1. Required Courses*:
   - Math 1220 Survey of Calculus (3) (if Math 1070 taken for Area D), or
   - Math 2212 Calculus of One Variable II (4) (if Math 2211 taken for Area D)
   - Chem 1211K Principles of Chemistry I (4)
   - Chem 1212K Principles of Chemistry II (4)
   - Geol 1121K Introductory Geosciences I (4) (if not taken in Area D)
   - Geol 1122K Introductory Geosciences II (4) (if not taken in Area D)

2. Select one two-course sequence from the following four sets, plus additional hours of any natural science or mathematics as needed, to complete 18 hours in Area F.
   - Phys 1111K Introductory Physics I (4)
   - Phys 1112K Introductory Physics II (4) or
   - Phys 2211K Principles of Physics I (4)
   - Phys 2212K Principles of Physics II (4) or
   - Biol 1103K Introductory Biology I (4)
   - Biol 1104K Introductory Biology II (4) or
   - Biol 2107K Principles of Biology I (4)
   - Biol 2108K Principles of Biology II (4)

*Credit hours not needed in Area F will count in the second 60 hours beyond the core curriculum.

**Area G: Major Courses (39)**

A grade of C or higher is required in all major courses.

1. Required Courses to fulfill CTW requirement (8)
   - Geol 4006 Sedimentary Environments and Stratigraphy (4)
   - Geol 4830 Senior Seminar (4)

2. Geology majors must select concentrations in General Geology, Environmental Geology, or Earth Science.
   - **General Geology Concentration (23)**
     - Geol 3002 Introduction to Earth Materials (4)
     - Geol 4013 Structural Geology (4)
     - Geol 4015 Crystallography and Optical Mineralogy (4)
     - Geol 4016 Igneous and Metamorphic Petrology (4)
     - Geol 4095 Seminar in Geological Sciences (1)*
     - Geol 4120 Basic Field Geology (3)
     - Geol 4121 Advanced Field Geology (3)
   - **Environmental Geology Concentration (31)**
     - Courses listed for General Geology concentration (23)
**Earth Science Concentration (31)**
Courses listed for General Geology concentration (23)
5.
- Geol 4530 Introduction to Remote Sensing (4)
- Geog 4532 Geographic Information Systems (4)

3. Geology Electives: Select additional courses for a total of 39 semester hours. (0-8)
   - Geol 4002 Oceanography (3)
   - Geol 4003 Aqueous Geochemistry (4)
   - Geol 4005 Geology of Georgia (3)
   - Geol 4007 Hydrogeology (4)**
   - Geol 4011 Principles of Paleontology (4)
   - Geol 4017 Environmental Geology (4)**
   - Geol 4042 Analytical Methods (2)
   - Geol 4095 Seminar in Geological Sciences (1)*
   - Geol 4097 Topics in Geological Sciences (1-3)
   - Geol 4098 Independent Research in Geological Sciences (3)
   - Geol 4530 Introduction to Remote Sensing (4)
   - Geol 4640 Geomorphology (4)
   - Geol 4644 Environmental Conservation (4)***
   - Geol 4870 Honors Thesis: Research (3)
   - Geol 4880 Honors Thesis: Writing (3)

*May be taken multiple times, but a maximum of two hours may be applied to the degree.

**Does not count if taken to satisfy Area G1.

***Allowed for concentration in Environmental Geology only.

**Area H: Minor and Additional Courses**

Geology majors are not required to complete a minor.

**Minor in Geology**

Students who wish to minor in geology must take 15-18 hours in courses in geology, including at least nine semester hours at the 3000 level or above. Students taking more than 15 hours in courses in geology may count the additional hours toward their electives or may consider completing a double major. A grade of C or higher is required in all courses counting toward the minor.

**Degree Requirements Geography**
Master of Arts in Geography

Thesis option (36 hours)

Early in their coursework, students must select advisers to direct their programs of study and to appoint their general examination and thesis committees. A timeline is provided in the Guide to Graduate Studies.

1. Geog 8001, Methods of Geographic Research, to be taken the first time offered after the student's admission to the program.
2. Cartography training equivalent to Geog 6518. This course may count toward the departmental minimum credit hour requirements.
3. Geog 6520, Quantitative Spatial Analysis (This requirement may be waived if student has equivalent training).
4. Nine semester hours of coursework at the 8000 level.
5. Remaining hours in student's area of specialization chosen from graduate level courses.
6. Six semester hours of Geog 8999, Thesis Research, (thesis option only) or three semester hours of Geog 8990, Research Practicum, (non-thesis option only).
7. Proficiency in a foreign language or in an approved research skill. Courses taken to fulfill this requirement may not count towards the departmental minimum credit hour requirements.
8. A general written and oral examination must be passed on or near the completion of coursework requirements.

Non-Thesis Option (36 hours)

Students taking the non-thesis option must take three additional semester hours of graduate level coursework in lieu of Geog 8999 and complete a non-thesis research project (Geog 8990 Practicum). Students may attempt to fulfill the practicum requirement twice, but only three semester hours of Geog 8990 can be counted toward their degree requirements.

Professional Certificate in Geographic Information Science

Geographic Information Science (GIS) is a rapidly growing discipline, with applications in numerous fields, including government planning, natural resources management, environmental studies, real estate analysis, marketing, transportation planning and management, crime analysis, epidemiology, and urban growth management. A strong demand exists for proficient users of geospatial technology. The graduate-level Professional Certificate Program in GIS is designed to facilitate those students working toward graduate degrees in a variety of disciplines, as well as those who use GIS in the workplace and would like to obtain systematic training in the technology without having to complete a graduate degree. The Certificate Program consists of five courses with a total of 16-18 credit hours, including elective courses from a variety of departments/programs. Please contact the Department of Geosciences for more information.

GIS Certificate Requirements (16-18)
1. Admission to the program: B.A. or B.S. in a related field. A statement of intent, GRE scores, and transcripts must be provided to the Graduate School as part of the application. Students lacking appropriate background may be required to take prerequisite courses:

2. Required Courses (12)
The student must take the following courses:
   - Geog 6518 Digital Cartography (4)
   - Geog 2206* Introductory Mapping and Geographic Information Science (4)
   - Geog 6532 Introduction to Geographic Information Systems (4)
   - * Geog 2206 is the prerequisite for GEOG 6518. This prerequisite may be waived if the student has taken a similar course before or can demonstrate equivalent experience.
   - Select one:
     - Geog 6530 Introduction to Remote Sensing (4)
     - Geog 6534 Advanced Geographic Information Systems (4)

3. Elective Courses (4)
The student must take one of the following courses:
   - Geog 6533 Introduction to GIS Applications (4)
   - Geog 6648 Biogeography (4)
   - Geog 6762 Economic Geography (4)
   - Geog 6764 Urban Geography (4)
   - Geog 6766 Urban Transportation (4)
   - Anth 6200 Urban Anthropology (4)
   - Anth 6440 Epidemiology and Anthropology (4)
   - Anth 6550 Field School in Anthropology (4)
   - Anth 6590 Archaeological Methods (4)
   - With the approval of the department Director of Graduate Studies, one of the following courses from other departments/programs at Georgia State University may be substituted for the elective course:
     - Biol 6053K Field Ecology (4)
     - Geog 6530 Introduction to Remote Sensing (4) (if not taken in section 2)
     - Geog 6640 Geomorphology (4)
     - Geog 6650 Applied Hydrology
     - Geol 6007 Hydrogeology (4)
     - Hist 8600 Introduction to Historic Preservation (3)
     - MK 8200 Marketing Research (3)
     - PAUS 8021 Urban Policy Planning (3)
     - PolS 8115 Urban Political Behavior (3)
     - Psyc 6520 Environmental Psychology (3)
     - RE 8060 Applied Real Estate Market Analysis (3)
     - Soci 8226 Urban Sociology (3)

4. Practical Training (1-3)
   - Geog 6832 Geography Internship (3) or
   - Geog 6834 Applied Research in GIS (1-3) or
   - Geog 8001 Methods of Geographic Research (3)
   - (All may be taken for credit.)

5. Examination
   The student must pass an examination of GIS knowledge and applications. The certificate will be issued to students who complete the above requirements, including graduate students enrolled in the non-degree programs.
Degree Requirements Geology

Master of Science, thesis option (36 hours)

1. Geology courses (19-23 hours)
   - Geol 6000 Advanced Topics in Physical and Historical Geology (4)
   - Geol 6002 Oceanography (3)
   - Geol 6003 Aqueous Geochemistry (4)
   - Geol 6005 Geology of Georgia (3)
   - Geol 6006 Sedimentary Environments and Stratigraphy (4)
   - Geol 6007 Hydrogeology (4)
   - Geol 6008 Rock Fracture and Fluid Flow (4)
   - Geol 6011 Principles of Paleontology (4)
   - Geol 6012 Advanced Quantitative Hydrogeology (3)
   - Geol 6013 Structural Geology (4)
   - Geol 6042 Analytical Methods (2)
   - Geol 6097 Topics in Geological Sciences (1-3)
   - Geol 6120 Basic Field Geology (3)
   - Geol 6121 Advanced Field Geology (3)
   - Geol 6141 Life in the Cenozoic (4)
   - Geol 6640 Geomorphology (4)
   - Geol 6650 Applied Hydrology (4)
   - Geol 8001 Soils, Clays, and Weathering (4)
   - Geol 8003 Radiogenic Isotope Geology (3)
   - Geol 8010 Chemical Petrology (3)
   - Geol 8014 Deformation and Tectonics (4)
   - Geol 8097 Directed Study in Geology (1-15)
   - Geol 8500 Introduction to Geophysics (4)

2. Seminar (1-2 hours) Geol 6095 Seminar in Geological Sciences

3. Extra departmental courses (3-6 hours): An approved list of courses is available from the Geology Department.

4. Foreign language: Proficiency in a foreign language or in an approved research skill in computer programming. This requirement can be fulfilled by taking an approved course or by taking an examination.

5. Thesis Research (Geol 8999) (9 hours).


Master of Science, Non-Thesis Option (36 hours)

1. Geology Courses (22-26)
   - Geol 6000 Advanced Topics in Physical and Historical Geology (4)
   - Geol 6002 Oceanography (3)
   - Geol 6003 Aqueous Geochemistry (4)
   - Geol 6005 Geology of Georgia (3)
   - Geol 6006 Sedimentary Environments and Stratigraphy (4)
   - Geol 6007 Hydrogeology (4)
   - Geol 6008 Rock Fracture and Fluid Flow (4)
o Geol 6011 Principles of Paleontology (4)
o Geol 6012 Advanced Quantitative Hydrogeology (3)
o Geol 6013 Structural Geology (4)
o Geol 6042 Analytical Methods (2)
o Geol 6097 Topics in Geological Sciences (1-3)
o Geol 6120 Basic Field Geology (3)
o Geol 6121 Advanced Field Geology (3)
o Geol 6141 Life in the Cenozoic (4)
o Geol 6500 Introduction to Geophysics (4)
o Geol 6640 Geomorphology (4)
o Geol 6650 Applied Hydrology (4)
o Geol 8001 Soils, Clays, and Weathering (4)
o Geol 8003 Radiogenic Isotope Geology (3)
o Geol 8010 Chemical Petrology (3)
o Geol 8014 Deformation and Tectonics (4)
o Geol 8097 Directed Study in Geology (1-15)
o Geol 8500 Introduction to Geophysics (4)

2. Seminar (1-2 hours) Geol 6095 Seminar in Geological Sciences
3. Extra departmental Courses (6-9 hours). An approved list of courses is available from the department
4. Directed Study (3 hours) Geol 8097 Directed Study in Geology
5. Comprehensive Examination: Pass a general written examination taken within the first year of study.
6. Foreign language: Proficiency in a foreign language or in an approved research skill in computer programming. This can be fulfilled by taking a course or taking an examination.
7. Submission and approval of research project paper.

Doctor of Philosophy

The Doctor of Philosophy (Ph.D.) degree in Chemistry with a concentration in Geology is offered in collaboration with the Department of Chemistry. At least 80 hours of graduate credit are required for the Ph.D. degree. In order to satisfy the minimum requirements for the degree, students must complete successfully:

1. Thirty hours of approved graduate core coursework.
2. Forty hours of research, at least 20 hours of which must be Dissertation Research.
3. Ten additional hours of graduate course electives.
4. Satisfaction of the foreign language (research skill) requirement.
5. A written and oral qualifying general examination.
7. A final oral examination directed primarily to the defense of the dissertation.

Specific requirements: In the list of requirements that follows, the minimum number of credit hours required in each category is indicated and the courses that can be taken to fulfill these requirements are listed in parentheses. Credit will be given only for those geology courses in which the student receives a grade of B or higher. Category C may be used as the minor area of specialization if approved by the examination committee. Substitutions may be made by the graduate director in Category C with written approval of the Department of Geosciences.
A. Core courses: Geology (11 hours). To be selected from Geol 6003, 8001, 8003, 8010, or other approved substitutes;
B. Minor Area electives: (13 hours). To be selected from Geology: Geol 6004, 6006, 6009; Analytical Chemistry: Chem 6850, 6860, 6800, 8900; Biophysical Chemistry: Chem 6000, 6010, 6190, 6110, 6580; Organic Chemistry: Chem 6400, 6410, 6450, 8900; or other approved substitutes;
C. Interdisciplinary elective: (6 hours). To be selected from Chemistry or Biology or approved substitutes;
D. Special Topics, Electives and Seminar: (10 hours). To be selected from Geol 6008, 6095, 6097, 6640, 6650; Biol 6439, 6458; Chem 6600, 6610, 6490; or other approved substitutes; and
E. Research: (40 hours). To be selected from Geol 8097 or Geol 9999 (a minimum of 20 hours are selected from Geol 9999).

Foreign language/research skill requirement: A reading proficiency in one foreign language is required. An equivalent research skill such as computer language, technical writing, advanced statistics, electronics, etc. may be substituted for the foreign language (departmental approval required). Students with M.S. degrees which had a foreign language requirement satisfy the foreign language requirement. Note: credit hours used to fulfill the language requirement do not count in the 80 hours.

Advanced Certificate in Hydrogeology

The goals of the Advanced Certificate in Hydrogeology program in the Department of Geosciences are to provide students with a comprehensive education in the theoretical and applied aspects of hydrogeology, to provide usable skills for professional employment with state and federal agencies and private industry, to serve as a resource for the protection and management of groundwater resources of the state and region, and to serve as a resource for the extension and expansion of current knowledge in hydrogeology. The program in hydrogeology addresses the areas of groundwater quality, groundwater availability, and management strategies.

Additional Admission Requirements

In addition to the general requirements of the College of Arts and Sciences, the Department of Geosciences has the following requirements for the Certificate Program in Hydrogeology:

1. Three letters of recommendation from individuals who can evaluate the applicant's potential to do graduate work in geology. Professionals working in the field of groundwater hydrology must submit at least one letter of recommendation from their employers, documenting the applicant's professional experience and performance.
2. A statement of interests and career goals.
3. A baccalaureate degree in geology. Non-geologists with degrees in engineering or physical sciences also will be considered, but they must complete coursework in physical and historical geology. In order to satisfy this requirement, these applicants may take Geol 1121 and Geol 1122 prior to applying. Ordinarily, grades of A will be expected in order to demonstrate mastery of these subjects.
4. All students must have completed courses equivalent to the following: Calculus: Math 2211 (4) and Math 2212 (4); Physics: Phys 1111K (4) or Phys 2211K (4); and Chemistry: Chem 1211K (4) and Chem 1212K (4).

Certificate Requirements

1. Students must complete with a grade of C or higher six semester courses in hydrogeology.
2. Students must complete the program with a minimum 3.0 grade-point average in order to receive a certificate.
Appendix D4: A list of courses offered by the department for the past three years with the frequency with which the courses were offered in the review period, the number of sections, the total number of students and the average number of students per section

### APPENDIX TABLE D-1
DEPARTMENTAL OFFERINGS BY FISCAL YEAR, COURSE LEVEL, NUMBER OF SECTIONS, NUMBER OF STUDENTS AND AVERAGE NUMBER OF STUDENTS

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<td>28.0</td>
</tr>
<tr>
<td>FY10</td>
<td>GRAD</td>
<td>GEOG 6530</td>
<td>GEOG 6530</td>
<td>0.2</td>
<td>4</td>
<td>19.0</td>
</tr>
<tr>
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<td>GRAD</td>
<td>GEOG 6640</td>
<td>GEOG 6640</td>
<td>0.2</td>
<td>5</td>
<td>25.0</td>
</tr>
<tr>
<td>FY10</td>
<td>GRAD</td>
<td>GEOG 6644</td>
<td>GEOG 6644</td>
<td>0.2</td>
<td>5</td>
<td>28.0</td>
</tr>
<tr>
<td>FY10</td>
<td>GRAD</td>
<td>GEOG 6999</td>
<td>GEOG 6999</td>
<td>1.0</td>
<td>1</td>
<td>1.0</td>
</tr>
<tr>
<td>FY10</td>
<td>GRAD</td>
<td>GEOG 7002</td>
<td>GEOG 7002</td>
<td>0.0</td>
<td>1</td>
<td>21.0</td>
</tr>
<tr>
<td>FY10</td>
<td>GRAD</td>
<td>GEOG 7022</td>
<td>GEOG 7022</td>
<td>0.1</td>
<td>4</td>
<td>35.1</td>
</tr>
<tr>
<td>FY10</td>
<td>GRAD</td>
<td>GEOG 8095</td>
<td>GEOG 8095</td>
<td>2.0</td>
<td>16</td>
<td>8.0</td>
</tr>
<tr>
<td>FY10</td>
<td>GRAD</td>
<td>GEOG 8097</td>
<td>GEOG 8097</td>
<td>8.0</td>
<td>10</td>
<td>1.3</td>
</tr>
<tr>
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<td>GRAD</td>
<td>GEOG 8999</td>
<td>GEOG 8999</td>
<td>9.0</td>
<td>21</td>
<td>2.3</td>
</tr>
<tr>
<td>FY10</td>
<td>GRAD</td>
<td>GEOG 9999</td>
<td>GEOG 9999</td>
<td>5.0</td>
<td>5</td>
<td>1.0</td>
</tr>
<tr>
<td>FY10</td>
<td>GRAD</td>
<td>NSCI 7002</td>
<td>NSCI 7002</td>
<td>0.4</td>
<td>13</td>
<td>30.0</td>
</tr>
</tbody>
</table>
Appendix D5: Summary results of surveys

Results of the surveys of students, alumni, and faculty are presented on the following 33 pages.
ACADEMIC PROGRAM REVIEW
DEPARTMENT OF GEOSCIENCES
UNDERGRADUATE STUDENT SURVEY FINDINGS REPORT
Spring 2010

N = 40 (Response rate = 46.0 percent)
University (37 Departments) N = 4136 (Response rate = 38.0 percent)

Table 1

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>Strongly agree</th>
<th>Don't know/NA</th>
<th>Dept. Mean*</th>
<th>Univ. Mean*</th>
<th>Rank**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty members in the department are interested in the academic development of undergraduate majors.</td>
<td>0.0</td>
<td>0.0</td>
<td>7.5</td>
<td>25.0</td>
<td>26.650</td>
<td>1.25</td>
<td>4.65</td>
<td>3.92</td>
<td>89</td>
</tr>
<tr>
<td>The undergraduate program of study is academically challenging.</td>
<td>1.25</td>
<td>0.0</td>
<td>7.5</td>
<td>22.5</td>
<td>27.675</td>
<td>0.0</td>
<td>4.52</td>
<td>4.12</td>
<td>87</td>
</tr>
<tr>
<td>Faculty in the department are appropriately prepared for their courses.</td>
<td>0.0</td>
<td>0.0</td>
<td>2.5</td>
<td>35.0</td>
<td>23.575</td>
<td>1.25</td>
<td>4.54</td>
<td>4.06</td>
<td>89</td>
</tr>
<tr>
<td>I feel the undergraduate program is preparing me for my professional career and/or further study.</td>
<td>0.0</td>
<td>2.5</td>
<td>10.0</td>
<td>22.5</td>
<td>25.625</td>
<td>0.0</td>
<td>4.42</td>
<td>3.87</td>
<td>92</td>
</tr>
<tr>
<td>There is open communication between faculty and undergraduate students about student concerns.</td>
<td>0.0</td>
<td>5.0</td>
<td>12.5</td>
<td>4.0</td>
<td>9.225</td>
<td>4.0</td>
<td>4.40</td>
<td>3.71</td>
<td>97</td>
</tr>
<tr>
<td>Class size is suitable for effective learning.</td>
<td>2.5</td>
<td>15.0</td>
<td>10.0</td>
<td>22.5</td>
<td>20.500</td>
<td>0.0</td>
<td>4.00</td>
<td>3.85</td>
<td>37</td>
</tr>
</tbody>
</table>

*Mean range: 1=strongly disagree to 5=strongly agree; “Don't know/not applicable (NA)” excluded from analysis.
**Percentile Ranking based on 38 Departments

Graph 1

Graph 2

Graph 3
Table 2

<table>
<thead>
<tr>
<th></th>
<th>Poor</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>Excellent</th>
<th>Don't know/NA</th>
<th>Dept.</th>
<th>Univ.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic advisement available in the department</td>
<td>0</td>
<td>.0</td>
<td>2</td>
<td>5.0</td>
<td>5</td>
<td>12.5</td>
<td>17</td>
<td>42.5</td>
<td>15</td>
</tr>
<tr>
<td>Career advisement available in the department</td>
<td>0</td>
<td>.0</td>
<td>3</td>
<td>7.5</td>
<td>9</td>
<td>22.5</td>
<td>12</td>
<td>30.0</td>
<td>10</td>
</tr>
<tr>
<td>Availability of faculty to students outside the classroom</td>
<td>0</td>
<td>.0</td>
<td>2</td>
<td>5.0</td>
<td>3</td>
<td>7.5</td>
<td>14</td>
<td>35.0</td>
<td>20</td>
</tr>
<tr>
<td>Effectiveness of teaching methods used by faculty</td>
<td>0</td>
<td>.0</td>
<td>0</td>
<td>.0</td>
<td>3</td>
<td>7.5</td>
<td>19</td>
<td>47.5</td>
<td>17</td>
</tr>
<tr>
<td>Procedures used to evaluate student performance</td>
<td>0</td>
<td>.0</td>
<td>1</td>
<td>2.6</td>
<td>5</td>
<td>12.8</td>
<td>18</td>
<td>46.2</td>
<td>15</td>
</tr>
<tr>
<td>Frequency of undergraduate major course offerings</td>
<td>7</td>
<td>17.5</td>
<td>8</td>
<td>20.0</td>
<td>12</td>
<td>30.0</td>
<td>8</td>
<td>20.0</td>
<td>5</td>
</tr>
<tr>
<td>Variety of undergraduate major course offerings</td>
<td>5</td>
<td>12.5</td>
<td>4</td>
<td>10.0</td>
<td>10</td>
<td>25.0</td>
<td>13</td>
<td>32.5</td>
<td>8</td>
</tr>
<tr>
<td>Clarity of degree requirements</td>
<td>0</td>
<td>.0</td>
<td>1</td>
<td>2.6</td>
<td>7</td>
<td>17.9</td>
<td>16</td>
<td>41.0</td>
<td>14</td>
</tr>
</tbody>
</table>

*Mean range: 1=poor to 5=excellent  "Don't know/not applicable (NA)" excluded from analysis.

**Percentile Ranking based on 38 Departments
Supplemental Questions Provided by the Department of Geosciences

Table 3
What is your major within the Department of Geosciences?

<table>
<thead>
<tr>
<th>Major</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geography</td>
<td>13</td>
<td>32.5</td>
</tr>
<tr>
<td>Geology</td>
<td>27</td>
<td>67.5</td>
</tr>
</tbody>
</table>
Table 4
Describe your desired employment status after you complete your education.

<table>
<thead>
<tr>
<th>Employment Status</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>In geosciences, in a natural resources industry</td>
<td>3</td>
<td>7.5</td>
</tr>
<tr>
<td>In geosciences, in an environmental industry</td>
<td>17</td>
<td>42.5</td>
</tr>
<tr>
<td>In geosciences, in local, state, or federal government</td>
<td>14</td>
<td>35.0</td>
</tr>
<tr>
<td>In geosciences, in academia</td>
<td>4</td>
<td>10.0</td>
</tr>
<tr>
<td>Not in geosciences</td>
<td>2</td>
<td>5.0</td>
</tr>
</tbody>
</table>

Graph 16

Cross Tabulations by Major

Table 5

<table>
<thead>
<tr>
<th>Statement</th>
<th>Geography</th>
<th>Geology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty members in the department were interested in the academic development of undergraduate majors.</td>
<td>4.46</td>
<td>4.65</td>
</tr>
<tr>
<td>The undergraduate program of study was academically challenging.</td>
<td>4.38</td>
<td>4.59</td>
</tr>
<tr>
<td>Faculty in the department were appropriately prepared for their courses.</td>
<td>4.69</td>
<td>4.46</td>
</tr>
<tr>
<td>I feel the undergraduate program prepared me for my professional career and/or further study.</td>
<td>4.38</td>
<td>4.44</td>
</tr>
<tr>
<td>There was open communication between faculty and undergraduate students about student concerns.</td>
<td>4.31</td>
<td>4.44</td>
</tr>
<tr>
<td>Class size was suitable for effective learning.</td>
<td>4.00</td>
<td>4.00</td>
</tr>
</tbody>
</table>

*Mean range: 1=strongly disagree to 5=strongly agree; “Don’t know/not applicable (NA)” excluded from analysis.
Table 6

<table>
<thead>
<tr>
<th></th>
<th>Geography</th>
<th>Geology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic advisement available in the department</td>
<td>3.92</td>
<td>4.26</td>
</tr>
<tr>
<td>Career advisement available in the department</td>
<td>3.82</td>
<td>3.87</td>
</tr>
<tr>
<td>Availability of faculty to students outside the classroom</td>
<td>4.25</td>
<td>4.37</td>
</tr>
<tr>
<td>Effectiveness of teaching methods used by faculty</td>
<td>4.46</td>
<td>4.31</td>
</tr>
<tr>
<td>Procedures used to evaluate student performance</td>
<td>4.23</td>
<td>4.19</td>
</tr>
<tr>
<td>Frequency of undergraduate major course offerings</td>
<td>2.77</td>
<td>2.96</td>
</tr>
<tr>
<td>Variety of undergraduate major course offerings</td>
<td>3.23</td>
<td>3.44</td>
</tr>
<tr>
<td>Clarity of degree requirements</td>
<td>3.92</td>
<td>4.24</td>
</tr>
</tbody>
</table>

*Mean range: 1=poor to 5=excellent; "Don't know/not applicable (NA)" excluded from analysis.

Table 7

Describe your desired employment status after you complete your education.

<table>
<thead>
<tr>
<th></th>
<th>Geography</th>
<th>Geology</th>
</tr>
</thead>
<tbody>
<tr>
<td>In geosciences, in a natural resources industry</td>
<td>0 .0</td>
<td>3 11.1</td>
</tr>
<tr>
<td>In geosciences, in an environmental industry</td>
<td>4 30.8</td>
<td>13 48.1</td>
</tr>
<tr>
<td>In geosciences, in local, state, or federal government.</td>
<td>7 53.8</td>
<td>7 25.9</td>
</tr>
<tr>
<td>In geosciences, in academia.</td>
<td>0 .0</td>
<td>4 14.8</td>
</tr>
<tr>
<td>Not in geosciences.</td>
<td>2 15.4</td>
<td>0 .0</td>
</tr>
</tbody>
</table>
N = 23 (Response rate = 46.9 percent)
University (37 Departments) N = 1873 (Response rate = 31.4 percent)

Table 1

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>Strongly agree</th>
<th>Don't know/NA</th>
<th>Dept. Mean*</th>
<th>Univ. Mean*</th>
<th>% Rank**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty members in the department were interested in the academic development of undergraduate majors.</td>
<td>1</td>
<td>4.3</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>8.7</td>
<td>9</td>
<td>39.1</td>
</tr>
<tr>
<td>The undergraduate program of study was academically challenging.</td>
<td>1</td>
<td>4.3</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>8.7</td>
<td>8</td>
<td>34.8</td>
</tr>
<tr>
<td>Faculty in the department were appropriately prepared for their courses.</td>
<td>1</td>
<td>4.3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>8</td>
<td>34.8</td>
</tr>
<tr>
<td>I feel the undergraduate program prepared me for my professional career and/or further study.</td>
<td>1</td>
<td>4.3</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>17.4</td>
<td>5</td>
<td>21.7</td>
</tr>
<tr>
<td>There was open communication between faculty and undergraduate students about student concerns.</td>
<td>1</td>
<td>4.3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>13.0</td>
</tr>
</tbody>
</table>

*Mean range: 1=strongly disagree to 5=strongly agree; “Don’t know/not applicable (NA)” excluded from analysis.

**Percentile Ranking based on 38 Departments
Table 2

<table>
<thead>
<tr>
<th>Category</th>
<th>Poor N</th>
<th>Poor %</th>
<th>2 N</th>
<th>2 %</th>
<th>3 N</th>
<th>3 %</th>
<th>4 N</th>
<th>4 %</th>
<th>Excellent N</th>
<th>Excellent %</th>
<th>Don’t know/NA N</th>
<th>Don’t know/NA %</th>
<th>Dept. Mean*</th>
<th>Univ. Mean*</th>
<th>Rank**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic advisement available in the department</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>6</td>
<td>27.3</td>
<td>7</td>
<td>31.8</td>
<td>9</td>
<td>40.9</td>
<td>0</td>
<td>0</td>
<td>4.14</td>
<td>3.56</td>
<td>89</td>
</tr>
<tr>
<td>Career advisement available in the department</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>13.0</td>
<td>10</td>
<td>43.5</td>
<td>6</td>
<td>26.1</td>
<td>3</td>
<td>13.0</td>
<td>1</td>
<td>4.3</td>
<td>3.41</td>
<td>2.98</td>
<td>74</td>
</tr>
<tr>
<td>Availability of faculty to students outside the classroom</td>
<td>1</td>
<td>4.3</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>4.3</td>
<td>9</td>
<td>39.1</td>
<td>12</td>
<td>52.2</td>
<td>0</td>
<td>0</td>
<td>4.35</td>
<td>3.85</td>
<td>89</td>
</tr>
<tr>
<td>Effectiveness of teaching methods used by faculty</td>
<td>1</td>
<td>4.3</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>4.3</td>
<td>9</td>
<td>39.1</td>
<td>12</td>
<td>52.2</td>
<td>0</td>
<td>0</td>
<td>4.35</td>
<td>3.95</td>
<td>81</td>
</tr>
<tr>
<td>Procedures used to evaluate student performance</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>4.3</td>
<td>4</td>
<td>17.4</td>
<td>12</td>
<td>52.2</td>
<td>6</td>
<td>26.1</td>
<td>0</td>
<td>0</td>
<td>4.00</td>
<td>3.76</td>
<td>69</td>
</tr>
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<td>Frequency of undergraduate major course offerings</td>
<td>3</td>
<td>13.0</td>
<td>1</td>
<td>4.3</td>
<td>9</td>
<td>39.1</td>
<td>7</td>
<td>30.4</td>
<td>3</td>
<td>13.0</td>
<td>0</td>
<td>0</td>
<td>3.26</td>
<td>3.51</td>
<td>34</td>
</tr>
<tr>
<td>Variety of undergraduate major course offerings</td>
<td>2</td>
<td>8.7</td>
<td>4</td>
<td>17.4</td>
<td>6</td>
<td>26.1</td>
<td>10</td>
<td>43.5</td>
<td>1</td>
<td>4.3</td>
<td>0</td>
<td>0</td>
<td>3.17</td>
<td>3.57</td>
<td>12</td>
</tr>
<tr>
<td>Clarity of degree requirements</td>
<td>1</td>
<td>4.3</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>4.3</td>
<td>11</td>
<td>47.8</td>
<td>10</td>
<td>43.5</td>
<td>0</td>
<td>0</td>
<td>4.26</td>
<td>4.05</td>
<td>70</td>
</tr>
</tbody>
</table>

*Mean range: 1=poor to 5=excellent; “Don’t know/not applicable (NA)” excluded from analysis.

**Percentile Ranking based on 38 Departments
Supplemental Questions Provided by the Department of Geosciences

Table 3

<table>
<thead>
<tr>
<th>Major</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geography</td>
<td>13</td>
<td>56.5</td>
</tr>
<tr>
<td>Geology</td>
<td>10</td>
<td>43.5</td>
</tr>
</tbody>
</table>
Table 4
Describe your employment status after completing your education.

<table>
<thead>
<tr>
<th>Employment Status</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>In geosciences, in a natural resources industry</td>
<td>0</td>
<td>.0</td>
</tr>
<tr>
<td>In geosciences, in an environmental industry</td>
<td>8</td>
<td>40.0</td>
</tr>
<tr>
<td>In geosciences, in local, state, or federal government</td>
<td>2</td>
<td>10.0</td>
</tr>
<tr>
<td>In geosciences, in academia</td>
<td>0</td>
<td>.0</td>
</tr>
<tr>
<td>Not in geosciences</td>
<td>2</td>
<td>10.0</td>
</tr>
<tr>
<td>Currently enrolled in a graduate program</td>
<td>5</td>
<td>25.0</td>
</tr>
<tr>
<td>Not currently employed</td>
<td>3</td>
<td>15.0</td>
</tr>
</tbody>
</table>

Table 5
In what term did you graduate?

<table>
<thead>
<tr>
<th>Term</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall 2009</td>
<td>1</td>
<td>4.5</td>
</tr>
<tr>
<td>Summer 2009</td>
<td>0</td>
<td>.0</td>
</tr>
<tr>
<td>Spring 2009</td>
<td>3</td>
<td>13.6</td>
</tr>
<tr>
<td>Fall 2008</td>
<td>2</td>
<td>9.1</td>
</tr>
<tr>
<td>Summer 2008</td>
<td>2</td>
<td>9.1</td>
</tr>
<tr>
<td>Spring 2008</td>
<td>2</td>
<td>9.1</td>
</tr>
<tr>
<td>Fall 2007</td>
<td>4</td>
<td>18.2</td>
</tr>
<tr>
<td>Summer 2007</td>
<td>1</td>
<td>4.5</td>
</tr>
<tr>
<td>Spring 2007</td>
<td>7</td>
<td>31.8</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>.0</td>
</tr>
</tbody>
</table>
Cross Tabulations by Major

Table 6

<table>
<thead>
<tr>
<th></th>
<th>Geography Mean</th>
<th>Geology Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty members in the department were interested in the academic development of undergraduate majors.</td>
<td>4.08</td>
<td>4.50</td>
</tr>
<tr>
<td>The undergraduate program of study was academically challenging.</td>
<td>3.92</td>
<td>4.80</td>
</tr>
<tr>
<td>Faculty in the department were appropriately prepared for their courses.</td>
<td>4.31</td>
<td>4.70</td>
</tr>
<tr>
<td>I feel the undergraduate program prepared me for my professional career and/or further study.</td>
<td>3.38</td>
<td>4.00</td>
</tr>
<tr>
<td>There was open communication between faculty and undergraduate students about student concerns.</td>
<td>4.00</td>
<td>4.40</td>
</tr>
<tr>
<td>Class size was suitable for effective learning.</td>
<td>4.62</td>
<td>4.80</td>
</tr>
</tbody>
</table>

*Mean range: 1=strongly disagree to 5=strongly agree; “Don’t know/not applicable (NA)” excluded from analysis.

Table 7

<table>
<thead>
<tr>
<th></th>
<th>Geography Mean</th>
<th>Geology Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic advisement available in the department</td>
<td>4.08</td>
<td>4.20</td>
</tr>
<tr>
<td>Career advisement available in the department</td>
<td>3.46</td>
<td>3.33</td>
</tr>
<tr>
<td>Availability of faculty to students outside the classroom</td>
<td>4.38</td>
<td>4.30</td>
</tr>
<tr>
<td>Effectiveness of teaching methods used by faculty</td>
<td>4.08</td>
<td>4.70</td>
</tr>
<tr>
<td>Procedures used to evaluate student performance</td>
<td>3.77</td>
<td>4.30</td>
</tr>
<tr>
<td>Frequency of undergraduate major course offerings</td>
<td>3.46</td>
<td>3.00</td>
</tr>
<tr>
<td>Variety of undergraduate major course offerings</td>
<td>3.23</td>
<td>3.10</td>
</tr>
<tr>
<td>Clarity of degree requirements</td>
<td>4.08</td>
<td>4.50</td>
</tr>
</tbody>
</table>

*Mean range: 1=poor to 5=excellent; “Don’t know/not applicable (NA)” excluded from analysis.
Table 8
Describe your employment status after completing your education.

<table>
<thead>
<tr>
<th>Employment Status</th>
<th>Geography</th>
<th></th>
<th>Geology</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>In geosciences, in a natural resources industry</td>
<td>0</td>
<td>.0</td>
<td>0</td>
<td>.0</td>
</tr>
<tr>
<td>In geosciences, in an environmental industry</td>
<td>3</td>
<td>27.3</td>
<td>5</td>
<td>55.6</td>
</tr>
<tr>
<td>In geosciences, in local, state, or federal government</td>
<td>0</td>
<td>.0</td>
<td>2</td>
<td>22.2</td>
</tr>
<tr>
<td>In geosciences, in academia</td>
<td>0</td>
<td>.0</td>
<td>0</td>
<td>.0</td>
</tr>
<tr>
<td>Not in geosciences</td>
<td>2</td>
<td>18.2</td>
<td>0</td>
<td>.0</td>
</tr>
<tr>
<td>Currently enrolled in a graduate program</td>
<td>3</td>
<td>27.3</td>
<td>2</td>
<td>22.2</td>
</tr>
<tr>
<td>Not currently employed</td>
<td>3</td>
<td>27.3</td>
<td>0</td>
<td>.0</td>
</tr>
</tbody>
</table>
ACADEMIC PROGRAM REVIEW
DEPARTMENT OF GEOSCIENCES
GRADUATE STUDENT SURVEY FINDINGS
April 2010

N = 18 (Response rate 43.9 percent)
University (44 Departments) N = 2666 (Response rate = 55.3 percent)

Table 1

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>Strongly agree</th>
<th>Don't know/NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>Faculty members in the department are interested in the academic development of graduate majors.</td>
<td>0</td>
<td>.0</td>
<td>2</td>
<td>11.1</td>
<td>0</td>
</tr>
<tr>
<td>The graduate program of study is academically challenging.</td>
<td>1</td>
<td>5.6</td>
<td>0</td>
<td>.0</td>
<td>5</td>
</tr>
<tr>
<td>Faculty in the department are appropriately prepared for their courses.</td>
<td>1</td>
<td>5.9</td>
<td>0</td>
<td>.0</td>
<td>4</td>
</tr>
<tr>
<td>I feel the graduate program is preparing me for my professional career and/or further study.</td>
<td>1</td>
<td>5.6</td>
<td>3</td>
<td>16.7</td>
<td>3</td>
</tr>
<tr>
<td>There is open communication between faculty and graduate students about student concerns.</td>
<td>0</td>
<td>.0</td>
<td>2</td>
<td>11.1</td>
<td>3</td>
</tr>
<tr>
<td>Class size is suitable for effective learning.</td>
<td>0</td>
<td>.0</td>
<td>1</td>
<td>5.6</td>
<td>4</td>
</tr>
</tbody>
</table>

*Mean range: 1=strongly disagree to 5=strongly agree; "Don’t know/Not applicable (NA)" excluded from analysis.
**Percentile Ranking based on 45 Departments

Graph 1       Graph 2       Graph 3

Faculty members in the department are interested in the academic development of graduate majors.
The graduate program of study is academically challenging.
Faculty in the department are appropriately prepared for their courses.
Table 2

<table>
<thead>
<tr>
<th></th>
<th>Poor</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>Excellent</th>
<th>Don't know/NA</th>
<th>Dept. Mean*</th>
<th>Univ. Mean*</th>
<th>Rank**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic advisement available in the department</td>
<td>2 11.1</td>
<td>2 11.1</td>
<td>3 61.1</td>
<td></td>
<td>3 16.7</td>
<td>0 0</td>
<td>3.83</td>
<td>3.69</td>
<td>59</td>
</tr>
<tr>
<td>Career advisement available in the department</td>
<td>1 5.6</td>
<td>2 11.1</td>
<td>6 33.3</td>
<td>4 22.2</td>
<td>2 11.1</td>
<td>3 16.7</td>
<td>3.27</td>
<td>3.31</td>
<td>39</td>
</tr>
<tr>
<td>Availability of faculty to students outside the classroom</td>
<td>0 0 0</td>
<td>0 5 4 22.2</td>
<td>6 33.3</td>
<td>7 38.9</td>
<td>1 5.6</td>
<td>4.18</td>
<td>4.02</td>
<td>63</td>
<td></td>
</tr>
<tr>
<td>Effectiveness of teaching methods used by faculty</td>
<td>0 0 1 5.6</td>
<td>3 16.7</td>
<td>10 55.6</td>
<td>4 22.2</td>
<td>0 0</td>
<td>3.94</td>
<td>3.97</td>
<td>46</td>
<td></td>
</tr>
<tr>
<td>Procedures used to evaluate student performance</td>
<td>0 0 0</td>
<td>0 5 4 22.2</td>
<td>6 33.3</td>
<td>7 38.9</td>
<td>2 11.1</td>
<td>0 0</td>
<td>3.83</td>
<td>3.93</td>
<td>33</td>
</tr>
<tr>
<td>Frequency of graduate course offerings</td>
<td>3 16.7</td>
<td>6 33.3</td>
<td>10 55.6</td>
<td>2 11.1</td>
<td>0 0</td>
<td>2.44</td>
<td>3.34</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Variety of graduate course offerings</td>
<td>3 16.7</td>
<td>3 16.7</td>
<td>10 55.6</td>
<td>2 11.1</td>
<td>0 0</td>
<td>2.61</td>
<td>3.51</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Clarity of degree requirements</td>
<td>3 16.7</td>
<td>1 5.6</td>
<td>1 5.6</td>
<td>11 61.1</td>
<td>2 11.1</td>
<td>0 0</td>
<td>3.44</td>
<td>3.97</td>
<td>7</td>
</tr>
</tbody>
</table>

*Mean range: 1=poor to 5=excellent; "Don't know/not applicable (NA)" excluded from analysis.
**Percentile Ranking based on 45 Departments
Supplemental Questions Provided by the Department of Geosciences

Table 3
What is your major within the Department of Geosciences?

<table>
<thead>
<tr>
<th>Major</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geography</td>
<td>10</td>
<td>55.6</td>
</tr>
<tr>
<td>Geology</td>
<td>7</td>
<td>38.9</td>
</tr>
<tr>
<td>Graduate Certificate in Geographic Information Science</td>
<td>1</td>
<td>5.6</td>
</tr>
</tbody>
</table>

Graph 13: Variety of graduate course offerings
Graph 14: Clarity of degree requirements
Graph 15: What is your major within the Department of Geosciences?
Table 4
*Describe your desired employment status after you complete your education.*

<table>
<thead>
<tr>
<th>Employment Status</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>In geosciences, in a natural resources industry</td>
<td>1</td>
<td>5.9</td>
</tr>
<tr>
<td>In geosciences, in an environmental industry</td>
<td>5</td>
<td>29.4</td>
</tr>
<tr>
<td>In geosciences, in local, state, or federal government</td>
<td>8</td>
<td>47.1</td>
</tr>
<tr>
<td>In geosciences, in academia</td>
<td>3</td>
<td>17.6</td>
</tr>
<tr>
<td>Not in geosciences</td>
<td>0</td>
<td>.0</td>
</tr>
</tbody>
</table>

Graph 16

Cross Tabulations by Major

Table 5

<table>
<thead>
<tr>
<th>Statement</th>
<th>Geography</th>
<th>Geology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty members in the department were interested in the academic development of graduate majors.</td>
<td>4.00</td>
<td>4.43</td>
</tr>
<tr>
<td>The graduate program of study was academically challenging.</td>
<td>3.50</td>
<td>4.14</td>
</tr>
<tr>
<td>Faculty in the department were appropriately prepared for their courses.</td>
<td>3.70</td>
<td>4.17</td>
</tr>
<tr>
<td>I feel the graduate program prepared me for my professional career and/or further study.</td>
<td>3.20</td>
<td>3.86</td>
</tr>
<tr>
<td>There was open communication between faculty and graduate students about student concerns.</td>
<td>3.80</td>
<td>4.14</td>
</tr>
<tr>
<td>Class size was suitable for effective learning.</td>
<td>4.20</td>
<td>4.14</td>
</tr>
</tbody>
</table>

*Mean range: 1=strongly disagree to 5=strongly agree; “Don’t know/not applicable (NA)” excluded from analysis.*
### Table 6

<table>
<thead>
<tr>
<th></th>
<th>Geography</th>
<th>Geology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic advisement</td>
<td>3.70</td>
<td>4.00</td>
</tr>
<tr>
<td>available in the</td>
<td></td>
<td></td>
</tr>
<tr>
<td>department</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Career advisement</td>
<td>3.11</td>
<td>3.50</td>
</tr>
<tr>
<td>available in the</td>
<td></td>
<td></td>
</tr>
<tr>
<td>department</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Availability of faculty</td>
<td>4.11</td>
<td>4.43</td>
</tr>
<tr>
<td>to students outside the</td>
<td></td>
<td></td>
</tr>
<tr>
<td>classroom</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Effectiveness of</td>
<td>3.80</td>
<td>4.14</td>
</tr>
<tr>
<td>teaching methods used by</td>
<td></td>
<td></td>
</tr>
<tr>
<td>faculty</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Procedures used</td>
<td>3.80</td>
<td>3.86</td>
</tr>
<tr>
<td>to evaluate student</td>
<td></td>
<td></td>
</tr>
<tr>
<td>performance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frequency of graduate</td>
<td>2.10</td>
<td>2.71</td>
</tr>
<tr>
<td>major course offerings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Variety of graduate</td>
<td>2.30</td>
<td>3.00</td>
</tr>
<tr>
<td>major course offerings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clarity of degree</td>
<td>3.40</td>
<td>3.43</td>
</tr>
<tr>
<td>requirements</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Mean range: 1=poor to 5=excellent; “Don’t know/not applicable (NA)” excluded from analysis.*

### Table 7

*Describe your desired employment status after you complete your education.*

<table>
<thead>
<tr>
<th></th>
<th>Geography</th>
<th>Geology</th>
</tr>
</thead>
<tbody>
<tr>
<td>N %</td>
<td>N %</td>
<td></td>
</tr>
<tr>
<td>In geosciences, in a</td>
<td>0 .0</td>
<td>1 14.3</td>
</tr>
<tr>
<td>natural resources industry</td>
<td></td>
<td></td>
</tr>
<tr>
<td>In geosciences, in</td>
<td>3 33.3</td>
<td>2 28.6</td>
</tr>
<tr>
<td>an environmental industry</td>
<td></td>
<td></td>
</tr>
<tr>
<td>In geosciences, in local,</td>
<td>5 55.6</td>
<td>2 28.6</td>
</tr>
<tr>
<td>state, or federal government.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>In geosciences, in</td>
<td>1 11.1</td>
<td>2 28.6</td>
</tr>
<tr>
<td>academia.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not in geosciences.</td>
<td>0 .0</td>
<td>0 .0</td>
</tr>
</tbody>
</table>
ACADEMIC PROGRAM REVIEW
DEPARTMENT OF GEOSCIENCES
GRADUATE ALUMNI SURVEY FINDINGS
May 2010

N = 15 (Response rate 50.0 percent)
University (43 Departments) N = 1511 (Response rate = 43.1 percent)

Table 1

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>Strongly agree</th>
<th>Don’t know/NA</th>
<th>Dept.</th>
<th>Univ.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>Faculty members in the department were interested in the academic development of graduate majors.</td>
<td>0</td>
<td>.0</td>
<td>1</td>
<td>6.7</td>
<td>20.0</td>
<td>5</td>
<td>33.3</td>
<td>6</td>
</tr>
<tr>
<td>The graduate program of study was academically challenging.</td>
<td>0</td>
<td>.0</td>
<td>1</td>
<td>6.7</td>
<td>1</td>
<td>6.7</td>
<td>10</td>
<td>66.7</td>
</tr>
<tr>
<td>Faculty in the department were appropriately prepared for their courses.</td>
<td>0</td>
<td>.0</td>
<td>2</td>
<td>13.3</td>
<td>0</td>
<td>.0</td>
<td>8</td>
<td>53.3</td>
</tr>
<tr>
<td>I feel the graduate program prepared me for my professional career and/or further study.</td>
<td>0</td>
<td>.0</td>
<td>3</td>
<td>20.0</td>
<td>5</td>
<td>33.3</td>
<td>2</td>
<td>13.3</td>
</tr>
<tr>
<td>There was open communication between faculty and graduate students about student concerns.</td>
<td>2</td>
<td>13.3</td>
<td>2</td>
<td>13.3</td>
<td>0</td>
<td>.0</td>
<td>4</td>
<td>26.7</td>
</tr>
<tr>
<td>Class size is suitable for effective learning.</td>
<td>0</td>
<td>.0</td>
<td>0</td>
<td>.0</td>
<td>1</td>
<td>6.7</td>
<td>5</td>
<td>33.3</td>
</tr>
</tbody>
</table>

*Mean range: 1=strongly disagree to 5=strongly agree; “Don’t know/Not applicable (NA)” excluded from analysis.
**Percentile Ranking based on 44 Departments

Graph 1  
Graph 2  
Graph 3
Table 2

<table>
<thead>
<tr>
<th>Category</th>
<th>Poor</th>
<th>Medium</th>
<th>Medium</th>
<th>Medium</th>
<th>Medium</th>
<th>Excellent</th>
<th>Don’t know/NA</th>
<th>Dept.</th>
<th>Univ.</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>7</td>
<td>0</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>%</td>
<td>13.3</td>
<td>6.7</td>
<td>20.0</td>
<td>13.3</td>
<td>6.7</td>
<td>46.7</td>
<td>0</td>
<td>3.73</td>
<td>3.74</td>
</tr>
<tr>
<td>Mean*</td>
<td>3.60</td>
<td>3.65</td>
<td>4.00</td>
<td>4.06</td>
<td>10.0</td>
<td>4.08</td>
<td>4.05</td>
<td>4.05</td>
<td>4.08</td>
</tr>
<tr>
<td>Rank**</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>41</td>
<td>49</td>
<td>57</td>
</tr>
</tbody>
</table>

*Mean range: 1=poor to 5=excellent; "Don’t know/not applicable (NA)" excluded from analysis.
**Percentile Ranking based on 44 Departments
Supplemental Questions Provided by the Department of Geosciences

Table 3

What was your major within the Department of Geosciences?

<table>
<thead>
<tr>
<th>Major</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geography</td>
<td>3</td>
<td>21.4</td>
</tr>
<tr>
<td>Geology</td>
<td>8</td>
<td>57.1</td>
</tr>
<tr>
<td>Graduate Certificate in Geographic Information Science</td>
<td>2</td>
<td>14.3</td>
</tr>
<tr>
<td>Geography and Graduate certificate in Geographic Information</td>
<td>1</td>
<td>7.1</td>
</tr>
</tbody>
</table>
Table 4
Describe your employment status after completing your education.

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>In geosciences, in a natural resources industry</td>
<td>3</td>
<td>21.4</td>
</tr>
<tr>
<td>In geosciences, in an environmental industry</td>
<td>1</td>
<td>7.1</td>
</tr>
<tr>
<td>In geosciences, in local, state, or federal government</td>
<td>4</td>
<td>28.6</td>
</tr>
<tr>
<td>In geosciences, in academia</td>
<td>1</td>
<td>7.1</td>
</tr>
<tr>
<td>Not in geosciences</td>
<td>3</td>
<td>21.4</td>
</tr>
<tr>
<td>Currently enrolled in a graduate program</td>
<td>2</td>
<td>14.3</td>
</tr>
<tr>
<td>Not currently employed</td>
<td>0</td>
<td>.0</td>
</tr>
</tbody>
</table>

Graph 16

Table 5
In what term did you graduate?

<table>
<thead>
<tr>
<th>Term</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall 2009</td>
<td>1</td>
<td>7.1</td>
</tr>
<tr>
<td>Summer 2009</td>
<td>2</td>
<td>14.3</td>
</tr>
<tr>
<td>Spring 2009</td>
<td>4</td>
<td>28.6</td>
</tr>
<tr>
<td>Fall 2008</td>
<td>0</td>
<td>.0</td>
</tr>
<tr>
<td>Summer 2008</td>
<td>1</td>
<td>7.1</td>
</tr>
<tr>
<td>Spring 2008</td>
<td>2</td>
<td>14.3</td>
</tr>
<tr>
<td>Fall 2007</td>
<td>2</td>
<td>14.3</td>
</tr>
<tr>
<td>Summer 2007</td>
<td>1</td>
<td>7.1</td>
</tr>
<tr>
<td>Spring 2007</td>
<td>1</td>
<td>7.1</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>.0</td>
</tr>
</tbody>
</table>

Graph 17
### Cross Tabulations by Major

#### Table 6

<table>
<thead>
<tr>
<th>Geography</th>
<th>Geology</th>
<th>Mean</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty members in the department were interested in the academic development of graduate majors.</td>
<td>4.50</td>
<td>4.00</td>
<td></td>
</tr>
<tr>
<td>The graduate program of study was academically challenging.</td>
<td>4.00</td>
<td>3.87</td>
<td></td>
</tr>
<tr>
<td>Faculty in the department were appropriately prepared for their courses.</td>
<td>4.50</td>
<td>3.75</td>
<td></td>
</tr>
<tr>
<td>I feel the graduate program prepared me for my professional career and/or further study.</td>
<td>3.67</td>
<td>3.38</td>
<td></td>
</tr>
<tr>
<td>There was open communication between faculty and graduate students about student concerns.</td>
<td>4.00</td>
<td>3.63</td>
<td></td>
</tr>
<tr>
<td>Class size was suitable for effective learning.</td>
<td>4.50</td>
<td>4.50</td>
<td></td>
</tr>
</tbody>
</table>

*Mean range: 1=strongly disagree to 5=strongly agree; “Don’t know/not applicable (NA)” excluded from analysis.*

#### Table 7

<table>
<thead>
<tr>
<th>Geography</th>
<th>Geology</th>
<th>Mean</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic advisement available in the department</td>
<td>3.75</td>
<td>3.75</td>
<td></td>
</tr>
<tr>
<td>Career advisement available in the department</td>
<td>4.00</td>
<td>3.13</td>
<td></td>
</tr>
<tr>
<td>Availability of faculty to students outside the classroom</td>
<td>3.75</td>
<td>3.63</td>
<td></td>
</tr>
<tr>
<td>Effectiveness of teaching methods used by faculty</td>
<td>4.00</td>
<td>3.75</td>
<td></td>
</tr>
<tr>
<td>Procedures used to evaluate student performance</td>
<td>4.25</td>
<td>3.88</td>
<td></td>
</tr>
<tr>
<td>Frequency of graduate major course offerings</td>
<td>2.50</td>
<td>2.88</td>
<td></td>
</tr>
<tr>
<td>Variety of graduate major course offerings</td>
<td>2.25</td>
<td>3.38</td>
<td></td>
</tr>
<tr>
<td>Clarity of degree requirements</td>
<td>2.75</td>
<td>3.87</td>
<td></td>
</tr>
</tbody>
</table>

*Mean range: 1=poor to 5=excellent; “Don’t know/not applicable (NA)” excluded from analysis.*
<table>
<thead>
<tr>
<th>Employment Status</th>
<th>Geography</th>
<th></th>
<th>Geology</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>In geosciences, in a natural resources industry</td>
<td>0</td>
<td>.0</td>
<td>3</td>
<td>42.9</td>
</tr>
<tr>
<td>In geosciences, in an environmental industry</td>
<td>1</td>
<td>25.0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>In geosciences, in local, state, or federal government.</td>
<td>1</td>
<td>25.0</td>
<td>2</td>
<td>28.6</td>
</tr>
<tr>
<td>In geosciences, in academia</td>
<td>1</td>
<td>25.0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Not in geosciences.</td>
<td>0</td>
<td>.0</td>
<td>1</td>
<td>14.3</td>
</tr>
<tr>
<td>Currently enrolled in a graduate program</td>
<td>1</td>
<td>25.0</td>
<td>1</td>
<td>14.3</td>
</tr>
<tr>
<td>Not currently employed</td>
<td>0</td>
<td>.0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
**Table 1**

| Poor | 2 | 3 | 4 | Excellent | Don't know/NA | Dept. % | Univ. % | %
|------|---|---|---|----------|--------------|--------|--------|---
| N   | N | N | N | N        | N            | N      | N      | N
| 0   | 0.0| 1 | 11.1| 1 | 11.1| 7 | 77.8| 0
| 0   | 0.0| 0 | 0.0| 0 | 0.0| 3.67| 4.26| 2

**Scholarship of the faculty in the department**

| Poor | 2 | 3 | 4 | Excellent | Don't know/NA | Dept. % | Univ. % | %
|------|---|---|---|----------|--------------|--------|--------|---
| N   | N | N | N | N        | N            | N      | N      | N
| 0   | 0.0| 1 | 11.1| 1 | 11.1| 4 | 44.4| 3
| 0   | 0.0| 0 | 0.0| 0 | 0.0| 3.44| 4.20| 4

**Frequency of required course offerings**

| Poor | 2 | 3 | 4 | Excellent | Don't know/NA | Dept. % | Univ. % | %
|------|---|---|---|----------|--------------|--------|--------|---
| N   | N | N | N | N        | N            | N      | N      | N
| 1   | 11.1| 1 | 11.1| 3 | 33.3| 4 | 44.4| 0
| 1   | 11.1| 0 | 0.0| 0 | 0.0| 3.11| 3.93| 2

**Variety of advanced course offerings**

| Poor | 2 | 3 | 4 | Excellent | Don't know/NA | Dept. % | Univ. % | %
|------|---|---|---|----------|--------------|--------|--------|---
| N   | N | N | N | N        | N            | N      | N      | N
| 0   | 0.0| 1 | 11.1| 4 | 44.4| 4 | 44.4| 0
| 0   | 0.0| 0 | 0.0| 0 | 0.0| 3.33| 3.73| 17

**Level of clerical staff support**

| Poor | 2 | 3 | 4 | Excellent | Don't know/NA | Dept. % | Univ. % | %
|------|---|---|---|----------|--------------|--------|--------|---
| N   | N | N | N | N        | N            | N      | N      | N
| 0   | 0.0| 1 | 11.1| 3 | 33.3| 4 | 44.4| 1
| 0   | 0.0| 0 | 0.0| 0 | 0.0| 3.56| 3.63| 49

**Clarity of departmental goals for the next two years**

| Poor | 2 | 3 | 4 | Excellent | Don't know/NA | Dept. % | Univ. % | %
|------|---|---|---|----------|--------------|--------|--------|---
| N   | N | N | N | N        | N            | N      | N      | N
| 0   | 0.0| 1 | 11.1| 4 | 44.4| 4 | 44.4| 0
| 0   | 0.0| 0 | 0.0| 0 | 0.0| 4.22| 4.11| 50

**Availability of computer/data base software relevant to your work**

| Poor | 2 | 3 | 4 | Excellent | Don't know/NA | Dept. % | Univ. % | %
|------|---|---|---|----------|--------------|--------|--------|---
| N   | N | N | N | N        | N            | N      | N      | N
| 0   | 0.0| 0 | 0.0| 1 | 11.1| 5 | 55.6| 3
| 0   | 0.0| 0 | 0.0| 0 | 0.0| 4.22| 4.11| 50

**Mean range: 1=poor to 5=excellent; "NA" (Don't know/not applicable) excluded from analysis.**

**Percentile Ranking based on 46 Departments**
**Graph 4**

- Level of clerical staff support

**Graph 5**

- Clarity of departmental goals for the next two years

**Graph 6**

- Availability of computer-based software relevant to your work

### Table 2

<table>
<thead>
<tr>
<th></th>
<th>Poor</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>Excellent</th>
<th>Don't know/NA</th>
<th>Dept. Mean*</th>
<th>Univ. Mean*</th>
<th>Rank**</th>
</tr>
</thead>
<tbody>
<tr>
<td>The department's program of study is academically challenging.</td>
<td>0</td>
<td>.0</td>
<td>1</td>
<td>11.1</td>
<td>1 11.1</td>
<td>5 55.6</td>
<td>2 22.2</td>
<td>0  .0</td>
<td>3.89</td>
</tr>
<tr>
<td>Faculty in the department work together toward program goals.</td>
<td>0</td>
<td>.0</td>
<td>1</td>
<td>11.1</td>
<td>3 33.3</td>
<td>2 22.2</td>
<td>3 33.3</td>
<td>0  .0</td>
<td>3.78</td>
</tr>
<tr>
<td>In our department, faculty feel comfortable expressing different views and opinions.</td>
<td>0</td>
<td>.0</td>
<td>0</td>
<td>.0</td>
<td>2 22.2</td>
<td>3 33.3</td>
<td>4 44.4</td>
<td>0  .0</td>
<td>4.22</td>
</tr>
<tr>
<td>I have adequate opportunities to influence decisions made in the department about our programs.</td>
<td>0</td>
<td>.0</td>
<td>1</td>
<td>11.1</td>
<td>1 11.1</td>
<td>3 33.3</td>
<td>4 44.4</td>
<td>0  .0</td>
<td>4.11</td>
</tr>
<tr>
<td>Guidelines regarding job performance are clear to faculty in the department.</td>
<td>0</td>
<td>.0</td>
<td>0</td>
<td>.0</td>
<td>3 33.3</td>
<td>2 22.2</td>
<td>4 44.4</td>
<td>0  .0</td>
<td>4.11</td>
</tr>
</tbody>
</table>

*Mean range: 1=strongly disagree to 5=strongly agree; "NA" (Don't know/not applicable) excluded from analysis.

**Percentile Ranking based on 46 Departments
Table 3
The following is a list of faculty tasks for which the department has various expectations. Please indicate the amount of emphasis you believe the department has placed on each task.

<table>
<thead>
<tr>
<th>Faculty Task</th>
<th>Significantly too little emphasis</th>
<th>Significantly too much emphasis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>Research tasks</td>
<td>0</td>
<td>.0</td>
</tr>
<tr>
<td>Service to Institute</td>
<td>0</td>
<td>.0</td>
</tr>
<tr>
<td>Publishing in certain journals</td>
<td>0</td>
<td>.0</td>
</tr>
<tr>
<td>Teaching</td>
<td>0</td>
<td>.0</td>
</tr>
</tbody>
</table>

*Mean range: 1=significantly too little emphasis to 5=significantly too much emphasis; “NA” (Don’t know/not applicable) excluded from analysis.

**Percentile Ranking based on 46 Departments

Graph 12: Research tasks
Graph 13: Service to Institute
Graph 14: Publishing in certain journals
Graph 15: Teaching
Table 4

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th></th>
<th>No</th>
<th></th>
<th>NA</th>
<th></th>
<th>Univ.</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Have you ever been the editor of any journals or served on any</td>
<td>4</td>
<td>4</td>
<td></td>
<td>4</td>
<td>1</td>
<td>11.1</td>
<td>47.1</td>
<td>52.9</td>
</tr>
<tr>
<td>editorial boards in your field?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have you been awarded any grants from Georgia State University</td>
<td>8</td>
<td>8</td>
<td>0</td>
<td>.0</td>
<td></td>
<td></td>
<td>61.1</td>
<td>38.9</td>
</tr>
<tr>
<td>to support research in your field?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have you been awarded any grants from a source other than</td>
<td>8</td>
<td>8</td>
<td>1</td>
<td>11.1</td>
<td>0</td>
<td>0</td>
<td>68.6</td>
<td>31.4</td>
</tr>
<tr>
<td>Georgia State University to support research in your field?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>During the last two years, have you refereed or served as a</td>
<td>8</td>
<td>8</td>
<td>0</td>
<td>.0</td>
<td></td>
<td></td>
<td>75.7</td>
<td>24.3</td>
</tr>
<tr>
<td>reviewer of one or more articles submitted to journal(s) in</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>your field?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Graph 16

Graph 17

Graph 18

Graph 19

During the last two years, have you refereed or served as a reviewer of one or more articles submitted to journal(s) in your field?
Table 5

<table>
<thead>
<tr>
<th>How many professional articles or chapters in books have you published in the last five years?</th>
<th>0</th>
<th>1-2</th>
<th>3-4</th>
<th>5-6</th>
<th>7 or more</th>
<th>NA</th>
<th>Dept. Mean*</th>
<th>Univ. Mean*</th>
<th>Rank**</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>0</td>
<td>.0</td>
<td>1</td>
<td>12.5</td>
<td>1</td>
<td>12.5</td>
<td>3</td>
<td>37.5</td>
<td>3</td>
<td>37.5</td>
</tr>
<tr>
<td>NA</td>
<td>.0</td>
<td>3</td>
<td>37.5</td>
<td>0</td>
<td>.0</td>
<td>0</td>
<td>.0</td>
<td>2</td>
<td>22.2</td>
</tr>
<tr>
<td>Dept. Mean*</td>
<td>2.65</td>
<td>Univ. Mean*</td>
<td>63</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>How many authored books or edited books have you published in the last five years?</th>
<th>5</th>
<th>55.6</th>
<th>0</th>
<th>.0</th>
<th>1</th>
<th>11.1</th>
<th>0</th>
<th>.0</th>
<th>3</th>
<th>33.3</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>11.1</td>
<td>5</td>
<td>55.6</td>
<td>1</td>
<td>11.1</td>
<td>3</td>
<td>33.3</td>
<td>.0</td>
<td>.0</td>
<td></td>
</tr>
<tr>
<td>Dept. Mean*</td>
<td>.42</td>
<td>Univ. Mean*</td>
<td>38</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>How many monographs, manuals, or reviews have you published in the last five years?</th>
<th>1</th>
<th>11.1</th>
<th>5</th>
<th>55.6</th>
<th>1</th>
<th>11.1</th>
<th>0</th>
<th>.0</th>
<th>3</th>
<th>33.3</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>11.1</td>
<td>5</td>
<td>55.6</td>
<td>1</td>
<td>11.1</td>
<td>4</td>
<td>44.4</td>
<td>2</td>
<td>22.2</td>
<td></td>
</tr>
<tr>
<td>Dept. Mean*</td>
<td>.82</td>
<td>Univ. Mean*</td>
<td>76</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>How many formal presentations have you given at professional meetings over the last five years?</th>
<th>0</th>
<th>.0</th>
<th>1</th>
<th>11.1</th>
<th>0</th>
<th>.0</th>
<th>4</th>
<th>44.4</th>
<th>0</th>
<th>.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>.0</td>
<td>1</td>
<td>11.1</td>
<td>4</td>
<td>44.4</td>
<td>2</td>
<td>22.2</td>
<td>0</td>
<td>.0</td>
<td></td>
</tr>
<tr>
<td>Dept. Mean*</td>
<td>3.22</td>
<td>Univ. Mean*</td>
<td>55</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>How many formal presentations have you given at other colleges or institutions over the last five years?</th>
<th>2</th>
<th>22.2</th>
<th>2</th>
<th>22.2</th>
<th>3</th>
<th>33.3</th>
<th>0</th>
<th>.0</th>
<th>2</th>
<th>22.2</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>22.2</td>
<td>2</td>
<td>22.2</td>
<td>3</td>
<td>33.3</td>
<td>2</td>
<td>22.2</td>
<td>0</td>
<td>.0</td>
<td></td>
</tr>
<tr>
<td>Dept. Mean*</td>
<td>1.78</td>
<td>Univ. Mean*</td>
<td>57</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Mean range: 0=0, 1=1-2, 2=3-4, 3=5-6, 4=7 or more; "NA" (Not applicable) excluded from analysis.

**Percentile Ranking based on 46 Departments"
The following procedures apply to FY 2008 – FY 2010.

Geography B.A. program

One faculty member is designated as the director of the Geography undergraduate program, although all faculty members are encouraged to take on an advisement roll in an informal basis. The director sends at least one e-mail per semester to Geography majors informing the students of important deadlines, course information, events, etc. With respect to the recruitment of majors, once a student expresses an interest in majoring Geography he/she is referred to the undergraduate director. In the advisement meeting the student is shown what courses are necessary for the major. The student is given a typical time two-to-three year timeline for completion of the major including a semester-by-semester breakdown of when each course is typically offered. The student is encouraged to get to know all of our faculty members and seek advisement from them concerning possible areas of undergraduate research, employment opportunities, and how to proceed with graduate school if that is their interest. During the semester prior to graduation, the student and undergraduate advisor submit a formal course audit to the College of Arts and Sciences.

Geography M.A. and certificate program

One faculty member is designated as the director of the Geography graduate program. The director meets with prospective students and responds to contacts for either the M.A. program of the GIS certificate program. Students are provided a 20-page guide to the graduate program, which is updated annually. The director advises students on issues including continuous enrollment, declaring a graduation semester, and obtaining health insurance. The director meets with advisors every year to ensure that students are meeting goals, have a well-defined thesis, etc. Finally, the graduate director is the de facto instructor Geography 8001 (Methods of Geographic Research), where students get introduced to a range of faculty, choose an advisor in their first semester, and develop thesis proposals.

Geology B.S. program

One faculty member is designated as the director of the Geology undergraduate program, although all faculty members are encouraged to take on an advisement roll in an informal basis. Once a student expresses an interest in majoring in Geology he/she is referred to the undergraduate director. This usually occurs either in an introductory course or by telephone in the case of transfer students. In the advisement meeting the student is shown what courses are necessary for the major including required courses, electives, and courses satisfying the various “concentrations” offered by the department. At this time the student is also made aware of all the outside departmental requirements including chemistry and math. The student is given a typical time two-to-three year timeline for completion of the major including a semester-by-semester breakdown of when each course is typically offered. The student is encouraged to get to know all of our faculty members and seek advisement from them concerning possible areas of undergraduate research, employment opportunities and how to proceed with graduate school if that is their interest. All of this information is found in an undergraduate advisory packet prepared by the Undergraduate Advisor and given to the student. Upon concluding this meeting, the student is told that the door of the undergraduate advisor is always open for them if they have
questions about their program. During the semester prior to graduation, the student and undergraduate advisor submit a formal audit of courses that the student has taken and will take for completion of the major. This is submitted to the College of Arts and Sciences advisory office.

Geology graduate programs

One faculty member is designated as the director of the Geology graduate program. Newly admitted M.S. students are advised through e-mail or in person before they register for the new semester. Existing M.S. students also are advised every semester before they register. Thesis-option students are given assistance in selecting their graduate committee members, writing their thesis proposals, and formatting theses. Non-thesis students are given comprehensive exams. All M.S. students are audited to check if they have taken the required courses. Ph.D. students are advised before they take any courses, and a dissertation committee is determined in the first year. Qualifying exams and dissertation defenses are set up in the second and third years, respectively.
### TABLE E-1a
**MEAN STANDARDIZED GRADUATE ADMISSION TEST SCORES**
**FY 2008 - FY 2010**
**GEOSCIENCES**

<table>
<thead>
<tr>
<th>ACADEMIC PROGRAM</th>
<th>APPLIED</th>
<th>ACCEPTED</th>
<th>ENROLLED</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>GRE</td>
<td>GRE</td>
<td>GRE</td>
</tr>
<tr>
<td>FY 08 CERG GIS</td>
<td>500</td>
<td>614</td>
<td>500</td>
</tr>
<tr>
<td>FY 09 CERG GIS</td>
<td>505</td>
<td>634</td>
<td>534</td>
</tr>
<tr>
<td>FY 10 CERG GIS</td>
<td>491</td>
<td>557</td>
<td>518</td>
</tr>
<tr>
<td>FY 08 CERG HGY</td>
<td>560</td>
<td>610</td>
<td>560</td>
</tr>
<tr>
<td>FY 09 CERG HGY</td>
<td>505</td>
<td>633</td>
<td>501</td>
</tr>
<tr>
<td>FY 09 MA GPY</td>
<td>451</td>
<td>553</td>
<td>533</td>
</tr>
<tr>
<td>FY 10 MA GPY</td>
<td>523</td>
<td>668</td>
<td>542</td>
</tr>
<tr>
<td>FY 08 MS GLY</td>
<td>505</td>
<td>627</td>
<td>533</td>
</tr>
<tr>
<td>FY 09 MS GLY</td>
<td>424</td>
<td>552</td>
<td>435</td>
</tr>
<tr>
<td>FY 10 MS GLY</td>
<td>490</td>
<td>580</td>
<td>490</td>
</tr>
</tbody>
</table>

### TABLE E-1b
**SELECTION RATIO OF APPLICANT/ACCEPTED GRADUATE STUDENTS**
**FY 2008 - FY 2010**
**GEOSCIENCES**

<table>
<thead>
<tr>
<th>ACADEMIC PROGRAM</th>
<th># OF APPLICANTS</th>
<th># OF ACCEPTED</th>
<th># OF ENROLLED</th>
<th>ACCEPT RATIO</th>
<th>ENROLLED RATIO</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY 08 CERG GIS</td>
<td>6</td>
<td>6</td>
<td>2</td>
<td>100.0%</td>
<td>33.3%</td>
</tr>
<tr>
<td>FY 09 CERG GIS</td>
<td>14</td>
<td>8</td>
<td>5</td>
<td>57.1%</td>
<td>62.5%</td>
</tr>
<tr>
<td>FY 10 CERG GIS</td>
<td>17</td>
<td>10</td>
<td>3</td>
<td>58.8%</td>
<td>30.0%</td>
</tr>
<tr>
<td>FY 08 CERG HGY</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>100.0%</td>
<td>50.0%</td>
</tr>
<tr>
<td>FY 09 CERG HGY</td>
<td>16</td>
<td>14</td>
<td>8</td>
<td>57.1%</td>
<td>57.1%</td>
</tr>
<tr>
<td>FY 09 MA GPY</td>
<td>12</td>
<td>10</td>
<td>4</td>
<td>83.3%</td>
<td>40.0%</td>
</tr>
<tr>
<td>FY 10 MA GPY</td>
<td>14</td>
<td>11</td>
<td>5</td>
<td>78.6%</td>
<td>45.5%</td>
</tr>
<tr>
<td>FY 09 MS GLY</td>
<td>9</td>
<td>6</td>
<td>4</td>
<td>66.7%</td>
<td>66.7%</td>
</tr>
<tr>
<td>FY 10 MS GLY</td>
<td>12</td>
<td>8</td>
<td>6</td>
<td>66.7%</td>
<td>75.0%</td>
</tr>
<tr>
<td>FY 10 MS GLY</td>
<td>11</td>
<td>7</td>
<td>6</td>
<td>63.6%</td>
<td>85.7%</td>
</tr>
<tr>
<td>Student</td>
<td>Year</td>
<td>Conference/Meeting</td>
<td>Location</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------</td>
<td>------</td>
<td>--------------------------------------------------------------------------</td>
<td>------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Davarpanah, A.</td>
<td>2007</td>
<td>American Geophysical Union Fall Meeting</td>
<td>San Francisco, CA USA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lavoie, B.</td>
<td>2007</td>
<td>Geological Society of America Annual Meeting</td>
<td>Denver, CO USA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Miller, D.</td>
<td>2007</td>
<td>Annual Meeting of the Southeastern Division of the Association of American Geographers</td>
<td>Charlotte, NC USA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pollack, G.</td>
<td>2007</td>
<td>Geological Society of America Annual Meeting</td>
<td>Denver, CO USA</td>
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<tr>
<td>Ritter, K.</td>
<td>2007</td>
<td>Geological Society of America Annual Meeting</td>
<td>Denver, CO USA</td>
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<td></td>
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<tr>
<td>Wilson, L.</td>
<td>2007</td>
<td>Annual Meeting of the Southeastern Division of the Association of American Geographers</td>
<td>Charlotte, NC USA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baloochistani, F.</td>
<td>2008</td>
<td>Kinsvater Symposium</td>
<td>Atlanta, GA USA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cartwright, R.</td>
<td>2008</td>
<td>Greater Atlanta Geomorphology and Hydrology Research Conference</td>
<td>Atlanta, GA USA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eby, K.</td>
<td>2008</td>
<td>Greater Atlanta Geomorphology &amp; Hydrology Research Conference</td>
<td>Atlanta, GA USA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Miller, D.</td>
<td>2008</td>
<td>Annual Meeting of the Association of American Geographers</td>
<td>Boston, MA USA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Osborn, S.</td>
<td>2008</td>
<td>Geological Society of America Annual Meeting</td>
<td>Houston, TX USA</td>
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<td></td>
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<tr>
<td>Warren, M.</td>
<td>2008</td>
<td>Geological Society of America, Southeastern Section Meeting</td>
<td>Charlotte, NC USA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wilson, L.</td>
<td>2008</td>
<td>Annual Meeting of the Association of American Geographers</td>
<td>Boston, MA USA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cartwright, R.</td>
<td>2009</td>
<td>American Geophysical Union Fall Meeting</td>
<td>San Francisco, CA USA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cochran, R.</td>
<td>2009</td>
<td>Annual Meeting of the Association of American Geographers</td>
<td>Las Vegas, NV USA</td>
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<td></td>
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<tr>
<td>Comarova, Z.</td>
<td>2009</td>
<td>Annual Meeting of the Southeastern Division of the Association of American Geographers</td>
<td>Knoxville, TN USA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ivanowski, J.</td>
<td>2009</td>
<td>Greater Atlanta Geomorphology and Hydrology Research Conference</td>
<td>Atlanta, GA USA</td>
<td></td>
<td></td>
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<tr>
<td>Van Trees, C.</td>
<td>2009</td>
<td>Geological Society of America, Southeastern Section Meeting</td>
<td>Tampa, FL USA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Whittington, R.</td>
<td>2009</td>
<td>Geological Society of America Annual Meeting</td>
<td>Portland, OR USA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wilson, L.</td>
<td>2009</td>
<td>Annual Meeting of the Association of American Geographers</td>
<td>Las Vegas, NV USA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wilson, M.</td>
<td>2009</td>
<td>Annual Meeting of the Association of American Geographers</td>
<td>Las Vegas, NV USA</td>
<td></td>
<td></td>
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<tr>
<td>Bienenfeld, L.</td>
<td>2010</td>
<td>Annual Meeting of the Association of American Geographers</td>
<td>Washington, DC USA</td>
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<td></td>
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<tr>
<td>Naumann, T.</td>
<td>2010</td>
<td>SEA-CSSJ-CMS Triannual Meeting on Clays</td>
<td>Seville, Spain</td>
<td></td>
<td></td>
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<tr>
<td>Naumann, T.</td>
<td>2010</td>
<td>Goldschmidt Conference</td>
<td>Knoxville, TN USA</td>
<td></td>
<td></td>
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<tr>
<td>Zaunbrecher, L.</td>
<td>2010</td>
<td>Goldschmidt Conference</td>
<td>Knoxville, TN USA</td>
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</table>
Appendix E3: Known job placement and acceptance to graduate programs during FY 2008 – FY 2010

<table>
<thead>
<tr>
<th>Student</th>
<th>Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baloochistani, G.</td>
<td>State of Georgia Environmental Protection Division</td>
</tr>
<tr>
<td>Bamba, A.</td>
<td>Assistant Professor of History, Gettysburg College</td>
</tr>
<tr>
<td>Barrett, R.</td>
<td>Systems Manager, City of Marietta</td>
</tr>
<tr>
<td>Bienenfeld, L.</td>
<td>GIS Analyst, Geostats</td>
</tr>
<tr>
<td>Billings, R.</td>
<td>U.S. E.P.A. Region 4</td>
</tr>
<tr>
<td>Blanton, J.</td>
<td>Epidemiologist, CDC</td>
</tr>
<tr>
<td>Brewer, J.</td>
<td>environmental consulting firm</td>
</tr>
<tr>
<td>Burger, E.</td>
<td>GIS Analyst at Sawnee EMC</td>
</tr>
<tr>
<td>Collins, C.</td>
<td>environmental consulting firm</td>
</tr>
<tr>
<td>Comarova, Z.</td>
<td>Tetra Tech</td>
</tr>
<tr>
<td>Costello, O.</td>
<td>mining company specializing in road aggregate</td>
</tr>
<tr>
<td>Dean, J.</td>
<td>Gwinnett County Water Resources</td>
</tr>
<tr>
<td>Eby, K.</td>
<td>Founder, Project Water</td>
</tr>
<tr>
<td>Evans, C.</td>
<td>Golder &amp; Associates (environmental consulting firm)</td>
</tr>
<tr>
<td>Felkel, R.</td>
<td>GIS Analyst GoodCents</td>
</tr>
<tr>
<td>Hays, J.</td>
<td>U.S. Census Bureau</td>
</tr>
<tr>
<td>Ivanowski, J.</td>
<td>ATEC Associates, Inc. (hydrological consulting firm)</td>
</tr>
<tr>
<td>Johnson, J.</td>
<td>GIS Analyst, City of Atlanta</td>
</tr>
<tr>
<td>Kharel, U.</td>
<td>City of Atlanta Department of Watershed Management</td>
</tr>
<tr>
<td>Lee, S.</td>
<td>The Conservation Fund</td>
</tr>
<tr>
<td>Martin, R.</td>
<td>Tetra Tech</td>
</tr>
<tr>
<td>Neurath, R.</td>
<td>Agency for Toxic Substances and Disease Registry (ATSDR)</td>
</tr>
<tr>
<td>Palmer, D.</td>
<td>ORISE Fellow, CDC</td>
</tr>
<tr>
<td>Polinsky, R.</td>
<td>Environmental Protection Agency</td>
</tr>
<tr>
<td>Prizito, T.</td>
<td>National Park Service</td>
</tr>
<tr>
<td>Van Trees, C.</td>
<td>Bank of America</td>
</tr>
<tr>
<td>Waller, M.</td>
<td>Instructor, Kennesaw State University</td>
</tr>
<tr>
<td>Whittington, R.</td>
<td>Southwestern Energy</td>
</tr>
<tr>
<td>Wilson, L.</td>
<td>Clean Diesel Coalition</td>
</tr>
<tr>
<td>Wilson-McCloyd, M.</td>
<td>Transportation Planner, Reynolds, Smith &amp; Hills Inc</td>
</tr>
<tr>
<td>Woghiren, E.</td>
<td>GIS Analyst, Centers for Disease Control</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Student</th>
<th>University</th>
</tr>
</thead>
<tbody>
<tr>
<td>Andrews, E.</td>
<td>Western Washington University</td>
</tr>
<tr>
<td>Berry, P.</td>
<td>Georgia State University</td>
</tr>
<tr>
<td>Cartwright, R.</td>
<td>University of Tennessee (Ph.D. program in Earth &amp; Planetary Science)</td>
</tr>
<tr>
<td>Cochran, R.</td>
<td>University of Illinois (Ph.D. program in Geography)</td>
</tr>
<tr>
<td>Cunningham, J.</td>
<td>Colorado State University</td>
</tr>
<tr>
<td>Davarpanah, A.</td>
<td>Georgia State University (Ph.D. program in Chemistry with Geology specialization)</td>
</tr>
<tr>
<td>Davis, M.</td>
<td>Georgia Institute of Technology</td>
</tr>
<tr>
<td>Dyer, B.</td>
<td>Florida State University</td>
</tr>
<tr>
<td>Edwards, G.</td>
<td>University of Delaware (Ph.D. program in Urban Planning)</td>
</tr>
<tr>
<td>Graham, R.</td>
<td>University of Denver</td>
</tr>
<tr>
<td>Green, W.</td>
<td>University of Utah</td>
</tr>
<tr>
<td>Jaworski, D.</td>
<td>Georgia State University</td>
</tr>
<tr>
<td>Jordan, D.</td>
<td>Georgia State University</td>
</tr>
<tr>
<td>LaVoie, B.</td>
<td>University of Tennessee</td>
</tr>
<tr>
<td>Legget, B.</td>
<td>Georgia State University</td>
</tr>
<tr>
<td>Miller, D.</td>
<td>Clark University (Ph.D. program in Geography)</td>
</tr>
<tr>
<td>Raines, J.</td>
<td>Georgia State University</td>
</tr>
<tr>
<td>Reinshagen, M.</td>
<td>Colorado School of Mines</td>
</tr>
<tr>
<td>Sarajlic, S.</td>
<td>Georgia State University</td>
</tr>
<tr>
<td>Smith, E.</td>
<td>University of Colorado</td>
</tr>
<tr>
<td>Woodward, M.</td>
<td>Colorado School of Mines</td>
</tr>
</tbody>
</table>
Appendix F1: Definition of graduate faculty and criteria for selection of graduate faculty

The Department of Geosciences follows the procedures for graduate faculty status as outlined in the Georgia State University Faculty Handbook.

Definition of graduate faculty
The Graduate Faculty will do scholarly research and creative work, teach graduate students, and direct the research of graduate students. Graduate Faculty members are expected to demonstrate current knowledge of and involvement with their fields.

Criteria for selection of graduate faculty
The Graduate Faculty will have doctorates and be actively engaged in scholarly or creative activities.
Appendix F2: List of graduate faculty

Hassan A. Babaie
Jordan A. Clayton
Jeremy W. Crampton
Dajun Dai
Daniel M. Deocampo
Jeremy E. Diem
W. Crawford Elliott
Katherine B. Hankins
Lawrence M. Kiage
Eirik J. Krogstad
Seth E. Rose
Parama Roy
Appendix F3: Current curriculum vitae for full-time faculty members

Curriculum vitae can be found on the following 194 pages of the report.
JOHN MICHAEL ALLENSWORTH
3053 Pointe Court
Snellville, Georgia, USA  30039
Telephone: 770-985-2113
Office telephone: 404-413-5772
Fax: 404-413-5768
e-mail: Veraguas@aol.com

Date and Place of Birth: September 30, 1941, Paulding, Ohio, USA

Citizenship: United States of America

Family Status: Married with two adult children

Education

Kent State University, PhD in Geography, 1982
Kent State University, MA in Geography, 1971 (teaching assistantship)
St. Francis College (now the University of St. Francis), Ft. Wayne, Indiana
    Coursework in Spanish for teaching certification in the language,
    Received certification, 1967
University of Arizona, Certificate in Latin American Studies (Peace Corps),
    1964
Kent State University, BS in Secondary Education, 1964
Paulding High School, Paulding, Ohio, graduated in 1959

Other in-Service Certified Training and Skills Development

Received certification from various organizations (e.g. Department of
Commerce International Trade Division, American Society for Quality,
Eastern Michigan University Business Management Development Center,
The U.S. Consumer Products Safety Commission, Baldwin Wallace
University Business Management Center, and the U.S. Chamber of
Commerce) on Ford Quality Operating Systems, ISO 9000 and QS 9000,
Covey Leadership, product safety and testing, industrial statistics and
Statistical process control (SPC), Total Quality Management (TQM),
measuring customer satisfaction, Supplier Quality Assurance (SQA),
exporting to the Big Emerging Markets, teambuilding and group problem
solving, developing mission and vision statements, gainsharing and profit
sharing plans, Tom Peters leadership, W. Edwards Deming Management,
design of experiments, organizational development (OD), Quality Function
Deployment (QFD) and Roosevelt Thomas diversity management.
Employment

1998-Present: Senior Lecturer (since 2008), Department of Geosciences, Georgia State University, Atlanta, Georgia. (Department of Anthropology and Geography through 2005). Visiting Instructor (1998-2002, Lecturer (2002-2007). Courses taught include Human Geography and the Geography of Landforms; Third World Urbanization, Geography of East Asia, the Geography of the Middle East and North Africa, and Senior Seminar; physical geography laboratory coordinator (2003-2006). Served on the Chairperson Search Committee (2007); Geosciences Department Executive Committee (2007-2010) and member of the Asian Studies Center Executive Board (2008-2010).

1998-2009: Volunteer, the Carter Center, Atlanta, Georgia. I gave four to eight hours a week to the work of President and Mrs. Carter in their efforts to promote global peace and eradicate disease. My role varied according to need and often included doing background country research in the Resource Center. I also served as a facilitator for student interns, gave informational seminars about world places and events and, as a certified docent, I hosted guests and officials to the Center.

1998-2001: American Cancer Society National Home Office, Atlanta, Georgia. Manager, American Cancer Society National School Health Coordinator Leadership Institute. Served as the project Manager for the initial institute in Atlanta in 1999. Served as Manager and/or facilitator for the remaining Institutes of this three year initiative (Houston, Orlando, San Diego and Seattle).

1995-1998: Program Coordinator, Office of Human Resource Development, Kent State University. Responsibilities included directing or assisting with the University’s efforts in Total Quality Management (I regularly taught in-service courses on TQM), diversity management, student retention, departmental process reviews, affirmative action, and non-academic staff development. At the same time, I was a part-time instructor in the Department of Geography (teaching two classes per semester, including summer sessions) in World Geography, the Geography of Central America and Mexico, the Geography of South America, Geographic Field Studies, Careers in Environmental Sciences, and Ohio’s Rivers. I also was the facilitator for the Geography Department’s continuous improvement project.
1991-1995: Director of Corporate Quality, the Ohio Art Company, Bryan, Ohio. Ohio Art is a manufacturing company specializing in toys (the Etch-a-Sketch), metal lithography (Kodak film magazines, Coca Cola collectables) plastic injection molding and automotive parts (Ford and Volkswagen). Reported to the Vice President for Manufacturing. I had responsibility for quality assurance and product safety in all of our facilities (Bryan, Strydel, and partner factories in China and Thailand). Member, Toy Manufacturers of America Toy Safety Committee (1992-1995), Eastman Kodak Partners Quality Improvement Team.


1973-present: President, TransJade, Inc (1991-1996), John Allensworth’s Discovery Expeditions, Inc (dba JADE Expeditions) (since 1973, incorporated in Georgia in 1997). Under these names I conduct three other private business activities: consulting, organizing specialized tours and conferences, and managing art exhibits. These are successful and on-going activities that occur as time permits. The consulting activities are in quality management with clients including 3C Technologies (for whom I consulted for Arvin de Mexico, E&C Manufacturing, Owens-Corning, Underwriters Laboratories and Lenawee Stamping/Mazda USA), Oak Wood Associates, Promotional Trim Corporation, and the Nebraska Department of Education Comprehensive Health Education Teacher Training Project. With JADE Expeditions, I have developed and marketed, since 1973, one to five annual specialized cultural/educational tours for professional organizations and universities. Destinations have included Central and South America, the Caribbean, Western Europe, West Africa, Australia, China, India, Russia, Alaska, the American Southwest, and the Canadian Rockies. Art exhibits have included several featuring the
folk art of Haiti and Panama. I am also a member of the Board of Directors of the National Collage Society (society of artists) and assist with their national exhibits.

**1969-1989:** Faculty member, Department of Geography, Kent State University, Instructor (1969-1983), assistant professor with tenure (1983-1989). Leave of absence from 1987-89. Courses taught include economic geography, urban geography, political geography, physical geography, geography of the United States and Canada, world regional geography, geography of Central America and Mexico, geography of South America, geography of the USSR and travel and tourism. Recipient of the Outstanding Faculty Award (1980), Faculty Chairperson, Trumbull Campus (1984-1986), chairperson of the Faculty Advisory Council (1985-87), the NCA Accreditation Review Committee (two reviews in which I served as chairperson the second time) and member of the Faculty Senate.

**1970-1975:** Part-time instructor of geography, Pennsylvania State University, Shenango Valley Campus, Sharon, Pennsylvania.

**1968-1969:** Graduate teaching assistant, Department of Geography, Kent State University.


**1966-1968:** Teacher, Blue Creek High School (now Wayne Trace High School), Haviland, Ohio. Teacher of high school sociology, economics, world history and Spanish; junior high school geography and Ohio history. President of the Blue Creek Teachers Association, President of the Paulding County Teachers Association, chairperson of the social studies and Spanish language curriculum committees for the Paulding County Schools and basketball coach.

**1964-1966:** Peace Corps volunteer, Panama (Santiago de Veraguas). During this time I worked concurrently with the following Panamanian institutions: Ministerio de Salud Publica (public health) serving as a health educator in various rural communities, Colegio San Vicente teaching geography, English, social studies, and physical education and coaching track and field, Escuela Normal J.D. Arosamena (national teacher training school)
teaching English and geography and Servicio Nacional de Voluntarios (SNV) coordinating SNV volunteer activities in community development and “head-start” education projects in rural Panama.


Professional Memberships

National Council for Geographic Education

American School Health Association (Member, School Health Coordinators Section, 2003-present), Honored with ASHA’a “Excellence in Leadership for School Health Coordination” Award, Pittsburgh, October 2004

Conference of Latin Americanist Geographers (Board of Directors, 1976-1979); U.S. Representative to the Urban and Regional Geography Section, Pan American Institute of Geography and History (1977-1979; 1987-1990)

Honors and Awards

Institute award recipient from the Regional Association for Latin American Studies, University of Pittsburgh, 1970-1972.

Outstanding Faculty Service Award, Kent State University, 1980

Excellence in Leadership for School Health Coordination Award, American School Health Association, 2004

Volunteer Service Award (Five Year), The Carter Center, Atlanta, 2005

Inducted into Phi Beta Delta, the Honor Society for International Scholars, Georgia State University, 2006

Thesis and Dissertation


Authoried Publications


**Papers, Lectures and Seminars Presented**


“TQM, Toolbox for Decision Making,” Save the Children staff development seminar, Atlanta, 1998.

“The Hispanic Cultural Realm of the United States: Opportunities for Russians for Research, Business and Tourism,” Conference on
Russia and the Americas, The Americana Institute, Volgograd State University, Volgograd, Russia, 1997.

“TQM and Problem Solving Tools for Geriatric Services,” University of Arkansas at Little Rock School of Social Work Summer Seminar, Santa Fe, New Mexico, 1997.

“Art as a Stimulus for Economic Development in Haiti,” Art at the Powerhouse, Cleveland, Ohio, 1997, (with Veronique LeRiche and Carol Adams).


“Molas and the San Blas Cuna Culture of Panama,” National Collage Society, Hudson, Ohio, 1996.


“Total Quality Management Tools in Comprehensive School Health Programs,” Comprehensive Health Education Teacher Training seminar, Ashland, Nebraska, 1993


“Spatial Manifestations of Elite Commercial and Residential Development in Panama City, Panama; the Impact of International Banking and a New Panama Canal Treaty,” Conference of Latin Americanist Geographers, Ottawa, Canada, 1984.


“Latin American Study Tours at Kent State University,” National Council for Geographic Education annual meeting, Mexico City, 1979 (with B. Thomas).

“Rural to Urban Migration in Panama,” Colloquium, Department of Geography, Kent State University, 1977.

“Nicaragua Today,” Colloquium, Department of Geography and Latin American Studies Center, Michigan State University, 1975 (with F. Erickson).


“Panama: Rural to Urban Contrasts,” Colloquium, International Studies, Ball State University, Muncie, Indiana, 1972.

**Service Activities (both past and current)**

**Amigos de las Americas** (volunteer health projects in Latin America with its national headquarters in Houston). Projects in Mexico, Guatemala, Honduras, Nicaragua, Costa Rica, Panama, the Dominican Republic, Colombia, Ecuador, Peru, Bolivia, Paraguay and Brazil. Co-founder of the Kent, Ohio Chapter (1970), Spanish language instructor (1970-72), training director and cross cultural coordinator (1973-74), vice president (1975), Chair of the Kent Board of Directors (1976-77), National Trustee (1975-76), consultant and instructor (1978-1990); Atlanta Chapter in Development project (2007-present)

**American Cancer Society**, National Home Office, Atlanta, volunteer for various activities in support of Children and Youth initiatives (2000 to 2005).

**National Collage Society** (society of artists). Director of Development and member of the Board of Directors (1983-present).


**Paulding County Crippled Children’s Society**, Chairman, 1966-1968. Fund raising activities on behalf of the society

**International Business, Research and Travel Activities**

assessments audit, Queretaro, 1995), borderlands field study, Ciudad Juarez (2003).


Canada: Cross cultural living experience with Mennonite family in Manitoba (1968), urban planning internship in Toronto (summer 1973), director of geography field trip to the Canadian Rockies and Yukon Territory (1974); extensive quality management consulting and training activities (averaging about 20-25 trips per year from 1987 through 1991) for Anchor Cap and Closure, Paperboard Industries Ltd. Jones Box and Label, and Sonoco (Canada), Ltd.,
with work in paper mills and paperboard converting plants in British Columbia, Alberta, Ontario and Quebec.


**Africa and the Middle East:** Directed a study tour for Texas Woman’s University to *Cote d’Ivoire, Liberia, Ghana* and *Nigeria* in which I also helped coordinate the Conference on Health Problems in Nigeria at the University of Nigeria in Nsukka (1982); JADE Expeditions to *Turkey* (1993).

CURRICULUM VITA
(January 2010)

Personal Information:
• Name: Hassan A. Babaie Phone: (W) 404 413 5766
• Email: hbabaie@gsu.edu Web site: http://www.gsu.edu/~geohab

Education
• Northwestern University, Evanston, IL: PhD, Structural Geology; 1984
• Northwestern University, Evanston, IL: MS, Geology; 1982
• University of Shiraz, Shiraz, Iran: BS, Geology, 1973

Academic Appointments
• Georgia State University, Atlanta, GA., Associate Professor; 1992-present.
• Georgia State University, Atlanta, GA., Assistant Professor; 1985-1992
• Stephen F. Austin State Univ., Nacogdoches, TX, Assistant Prof. 1/85-5/85
• Northwestern University, Evanston, IL, Post-doctoral Research Assistant, 1984

Computing Skills:
• Programming languages: C/C++, Java, Visual Basic
• Design geological ontologies with UML and Altova’s SemanticWorks
• Develop ontologies with the Web Ontology Language (OWL), RDFS, and RDF
• Design dynamic, server-side web applications with ASP and JSP
• Design/Map UML model into XML Schema, relational database, and Java , with Rational Rose
• Design and implement databases; MS Access; Structured Query Language

Current Research Interest and Projects:
GeoInformatics – Develop ontologies and markup languages:
• Develop static and process ontologies for fault, structural geology, and subduction zones
  o Ontologies for San Andreas Fault Observatory at Depth (SAFOD) cores
  o Ontologies for the Nankai Trough, SW Japan
  o Ontologies for natural, experimental, and simulated rock deformation
• Develop geological markup language with W3C’s XML Schema for SAFOD cores
• Design/implement relational databases in structural geology & tectonics

Recent Projects:
• SAFOD Brittle Microstructure and Mechanics Knowledge Base (SAFOD BM2KB)
• Conceptualization of the processes in the Nankai Trough accretionary prism, Japan
• Building hydrogeology ontology by extending the SWEET upper-level ontologies
• Kinematic analysis of fractures systems in the Zagros mountains, southern Iran
• Designing a modular architecture for the structural geology ontology
• Geochemical analysis of the ophiolitic rocks in the Neyriz ophiolite, Iran
• Designing markup languages for structural geology
• Semibrittle flow in the Grenville Front, Coniston, Ontario, Canada
• Fractal fragmentation in the Saltville thrust zone, Knoxville, Tennessee
• Mylonites/cataclasites in the Brevard and Towaliga fault zones, Georgia
• Fluid flow and oil maturation in the Barbados accretionary prism
• Fold-related fracturing in exposed Asmari reservoir in SW Iran, Zagros Mountains, SW Iran
Objectives

Research
• Develop an internationally recognized and funded research program in geoinformatics by developing the following:
  o Knowledge base for brittle deformation in the San Andreas Fault zone in California
  o Object/process ontologies for brittle and ductile deformation in structural geology
  o Ontologies for tectonic processes along shear zones and subduction zones

• Increase the level/frequency of funding for my research projects by government and nongovernment agencies

Teaching
• Train a new, hybrid generation of geoinformaticists graduate students by offering new courses in Earth science informatics in the Department of Geosciences, GSU
  o I am offering the new course: “Geoinformatics” in the fall of 2010

• Advance digital mapping in the Summer Field Geology courses taught in Montana through the use of GIS

• Improve the quality of my teaching by introducing new knowledge in my course material

Professional Service
• Help the geoinformatics community through active and effective professional activities
  o I am the Chair of the Geological Society of America (GSA) Geoinformatics Division
  o I am the founder and Editor-in-Chief of the Earth Science Informatics journal

• Convene and chair technical sessions in the meetings of the American Geophysical Union (AGU) and Geological Society of America (GSA)

• Develop new graduate programs in geoinformatics in collaboration with the Computer Science Department and Bioinformatics program
Invited Participation in Recent Professional Activities:

2009 – Chaired the Business meeting of the Geoinformatics Division of the Geological Society of America, Portland, Oregon, October 09.
2009 – Developed the website for the Geoinformatics Division of the Geological Society of America.
2008 – Invited to be a member of the program committee for the workshop: "Developing the Next Generation of Earth and Space Science Informatics, Technologies and the People who Implement Them" to be held in Univ.of Maryland, Baltimore, MD, summer 09.
2008 – Invited to be a judge for the student presentations at the American Geophysical Union (AGU) Fall Meeting, San Francisco, December 08.
2007 - Preparing for SAFOD Phase 3: Locating the Target Earthquakes and Sample Analysis Results and Future Plans, Workshop, Mar 27, Monterey, CA,
2006 - Integrated Ocean Drilling Program (IODP), ‘Depth Scale’ and ‘Visual Core Description’ Meetings, Texas A&M University, College Station, TX, Sept 24-29
2006 - Integrated Ocean Drilling Program - International Continental Scientific Drilling Program (IODP-ICDP) Workshop on Fault Zone Drilling, Miyazaki, Japan ,May 23-26
2006 - GEON Workshop to Identify Ground-Based Digital Acquisition, San Diego Supercomputing Center, UCSD, April 6-8
2005 - GEON-sponsored workshop on Geo-Ontology, SDSC, UC San Diego, Mar 3-4, 2005

Recent Synergistic Professional Activities:

2010 - Chair, Geological Society of America, Geoinformatics Division
2008 - Second Vice-Chair, Geological Society of America, Geoinformatics Division
2007 - Member of the Program Committee for Conference on Information and Knowledge Management CIKM 2007
2006 - Proposed (as convener and advocate) the Topical Session: ‘Geoinformatics and Computational Earth Science …”, 2007 Mtg. of the Geological Society of America, Denver, CO
2004 - Actively participated in the workshop to develop the structural geology ontology, Moscow, Idaho. November 2004
Teaching Experience:
- Northwestern University, 1978-1981, Physical Geology
- Loyola University, fall 1983, Physical Geology
- Stephen F. Austin State University, winter 1985, Structural Geology, Physical Geology
- Georgia State University, 1985-present:
  - Physical Geology; Historical Geology; Rocks and Minerals
  - Structural Geology, Advanced Structural Geology, Geology of Fractured Rocks
  - Field Methods, Geotectonics, Summer Field Geology, Rock Fracture and Fluid Flow
  - Geologic Resources and the Environment, Tectonics and Deformation

Student Supervision:

PhD – Principal Advisor

MS - Principal Advisor
- 2005 - Ajay Tripathi “Developing a modular hydrogeology ontology extending the SWEET ontologies”. Completed Summer 2005
- 2003 - Dale (Skip) E. Trempe “Meso- and micro-scale structures in mylonitic rocks along the Chattahoochee fault trace in Cherokee County, Georgia: Records of movement history along a prominent southern Appalachian Terrane Boundary”. Completed: Fall 2003
- 2002 - Donna Khallouf “Tectonic significance of jasperoids at the base of the Armstead and Ermont thrust faults, SW Montana”, completed: Spring 2002
- 1999 - Heather Caudill "Fracture and lineament characteristics and well productivity in the Georgia Piedmont"; Completed: June 1999
- 1997 - Bruce Taylor "Karstification in fractured rocks, Pigeon Mountain, Georgia". Completed: Fall 1997

Grant Proposal Submitted by Graduate Students Under my Supervision:
- 2008
- Armita Davarpanah: Geological Society of America Grant “Geochemistry and petrology of Eocene Volcanic Rocks in Bijgerd-Kuh e Kharchin, southeast of Saveh, Orumiyeh-Dokhtar Zone, Iran”. $4000 (declined).

  - 2006
    - Shankar Pokharel:
      - Krell Institute, Department of Energy, Computational Science Graduate Fellowship: “Developing dynamic ontologies for the Nankai Trough, SW Japan”, $31,200/year for PhD dissertation, renewable up to four years (declined)
    - GITA Southeast Chapter Scholarship, $500 (awarded)

  - 2004
    - Katayoun Mobasher
      - Sigma-Xi Grants-in-Aid of Research (2004). “Kinematic and mechanical effects of basement faults on Zagros orogeny, Southwest Iran. $980
    - Dona Khallouf:
      - Mayo Educational Foundation Scholarship, Southeast Federation of Mineralogical Societies ~ $2000.00 “The Bitterroot Metamorphic Core Complex”
      - GSU Dissertation Grant – 2004, $1000.00 “Re-examination of the Mylonitic Shear Zone and the Sapphire Tectonic Block in the Bitterroot Mountain Range, Montana: Implications for the Bitterroot Metamorphic Core Complex Hypothesis”.

  - 2003
    - Katayoun Mobasher:
      - GSU Dissertation grant program “Geostatistical, fractal, and kinematic analyses of Zagros basement faults and younger fold-related fractures, applying GIS and remote sensing: Implications for hydrocarbon productivity and salt diapirism along the northeastern edge of the Arabian plate, $1000.
      - L’oreal USA for women in science fellowship Program (2003) “GIS, fractal and remote sensing analysis of basement structure and the influence of basement faulting on hydrocarbon productivity, folding, and salt diapirism in the Zagros Range, SW Iran, $20000, declined.
    - Dona Khallouf

  - 2002
    - Dona Khallouf
      - Geological Society of America Travel Grant $100.00 “The Occurrence and Origin of Jasperoids and Cataclasite along the Armstead and Ermont Fault Zones in Southwest Montana”
Thesis/Dissertation Committee Member

Supervision of Independent Studies:
Graduate
- Armita Davarpanah, “Interpretation of field data of volcanic rocks, Saveh, Iran”, Fall 2008.
- Cunningham, Brent, “Application of Geographic Markup language GML in geology”, Spring ’08
- Robert Simmons, “Accretionary tectonics in the Nankai Trough, Japan”, Spring ’08
- Cunningham, Brent “Surface lineaments and borehole fracture data in the Brevard Fault zone, NW Atlanta” Fall 2007.
- Tiffany Hollingsworth “ Volcanic eruptions”, Geol 4097, Fall 2004
- Baloochestani, Farshad “Fractal geometry of geological objects”, Fall 2003
- Hill, Whitney B “Analysis of salt domes and faults in Zagros Range, Iran, using GIS", Fall 2003

Undergraduate
- David Tarrell "Analysis of faults in Eastern Turkey", Geol 699, Fall 1999
- Megan, Leahy “Tectonic deformation in ophiolites: Geol. 499; Winter 1999
- Lauren Odum "Scaling of the Yellowstone hotspot faults, Montana" Geol 699, Win. 1998
- Lauren Odum "Serpentinization in the Neyriz ophiolite, Iran". Geol 699, Fall 1997
- Sherlyn Priest "Geochemical analysis of the Neyriz ophiolitic rocks", Geol 405; Sum. 1996
- Tracy Ferring "Kinematic Analysis of Mylonites, Coyote Mt, CA", Geol 499; Winter 1996
- Phillip Hebb "Mineralogical study of the Neyriz ophiolite
- David Smith "Microfabrics of the Beaver creek cataclasites, Bitterroot Range, Montana."

Committee Membership - Department of Geology
- Graduate Director (Fall 2007- Present)
- Undergraduate Coordinator (2005-Fall 2007)
- Field Camp Director (2001–Present)
- Graduate Director (1988-1990 and 1993-2001)
- Executive Committee (member, 1992-2007)
- Library Committee (Chair, 1985-2005)
- Search Committee (Member, 2005)
- Pre-tenure review Committee (Chair, 2004) for Dr. Beth Christensen
- Promotion and Tenure I (member, 1992-present)
- Technology Committee (member, 2002-Present)
- Space Committee (member, 1985-2005),
- Scheduling Committee (member 2000-2007)
- Seminar Committee (Chair, 1986-1987)
• Awards Committee (Chair, 1986-1993)
• Graduate Admissions (member 2001-present)
• Electronic Data Processing (member, 1986-1997)
• Triennial Evaluation of Provost/VP Acad. Affairs (coordinator, Mar ‘97)

Committee Membership - College of Arts and Sciences
• College of Arts & Sciences Graduate Council (Fall 2007-Present)
• College of Arts & Sciences Undergraduate Studies Council (member 2005-2007)
• Chair Evaluation Committee (Chair, April 2005)
• College Lecturer Review Committee - (member, 2005 - Present)
• Graduate Council (member, 1999-Fall 2000)
• Triennial Evaluation of the Chairman, Dept. of Geology, (Chair, 1997, member 2000)
• Curriculum Committee (member, 1992-1994)

Committee Membership - University
• Senate Faculty Affairs Committee (member, 2007)
• Georgia State University Senate (member, Spring 2006- Fall 2007)
• Senate IS&T Committee (member, Spring 2006-Spring 2007)
  o Tech Fee Subcommittee of the Senate IS&T Committee (member, Jan ’06-Fall 07)
• Senate Budget Committee (member, Fall Semester 2006-Fall 2007)
• Faculty and Staff, Perspective Team (member), worked on GSU’s Online Banner application Project, Fall 01-03
• Serial Committee, Pullen Library (Member, 1993)

Recent Review of Book, Paper, Proposal, and Software (past five years)

2009
• Reviewed 5 abstracts for the Earth and Space Science Informatics workshop, held at University of Maryland, Baltimore, August 3-5.
• Reviewed a proposal for the NSF, EAR – Instrumentation & Facilities, NSF 09-517.
• As the Editor-in-Chief of the Earth Science Informatics journal, I managed the review of many submitted papers.

2008
• 2008 - As the Editor-in-Chief of the Earth Science Informatics journal, I reviewed the abstracts of 33 submitted articles, assigned them to proper associate editors and reviewers, managed their resubmitted versions, and made final decisions for accepting/rejecting the papers.
• Nov ‘08: reviewed manuscript IS-D-08-123 for Information Systems journal
• Dec ‘08: reviewed manuscript G31A for GSA Today journal
• Sep ‘08: pre-reviewed Book: Geodynamics and Geoinformatics” for Springer Pub. Co.

2007
• Dec. ’07: reviewed manuscript SIMPAT-D-07-249 for Simulation Modelling Practice and Theory journal
• Sept ’07: reviewed manuscript CAGEO-D-07-00112 for Computers & Geosciences journal
• June ’07 reviewed four (4) papers for the Conference on Information and Knowledge Management (CIKM 2007), papers: 186, 250, 304, 476.
• May ’07: reviewed manuscript CAGEO-D-06-00374 for Computers & Geosciences journal.
• April ’07: reviewed 90 abstracts for Geoinformatics 2007 as a member of the Technical Committee of the meeting
2006
• February 2006: reviewed a manuscript for Geodinamica Acta
• March 2006: reviewed a manuscript for the Computers & Geosciences Journal
• April 2006: Reviewed the revised version of the Hazcity 3rd Edition Software
• June 2006: reviewed a manuscript for the International Journal of Remote Sensing
• August 2006: reviewed a manuscript for the Journal of Asian Earth Sciences
• September 2006: Reviewed two chapters, ‘Plate Tectonics’ and ‘Earthquakes’, of the Georgia Middle-school Earth-science textbook for the Georgia Earth Science program

2005
• Reviewed National Science Foundation proposal EAR Tectonics #0537391
• November 2005: Reviewed three chapters of the book: “Structural Geology, 4e” by George Davis et al., John Wiley & Sons, Inc
• December 2005: Reviewed a manuscript for the Computers & Geosciences Journal
• August 2005: Reviewed a manuscript for the Computers & Geosciences Journal
• June 2005: Reviewed a manuscript for the Computers & Geosciences Journal

2004
• Reviewed the NSF proposal: EAR Major Research Instrumentation #0421444
•Reviewed a proposal for the Austrian Science Fund (FWF): “Structural evolution of faults and fault rocks” by Walter Kurz
• December 2004: Reviewed a manuscript for the Computers & Geosciences Journal
• December 2004: Reviewed the manuscript “Schema to Ontology for Igneous Rocks”, by: Sinha et al., Geological Society of America, Special Paper: ‘Geoinformatics'
• May 2004: Reviewed a manuscript for Journal of Structural Geology
• September 2004: Reviewed a manuscript for Journal of Asian Earth Sciences

Grants and Contracts:
2008 - “Enhancing Research and Learning in Geoinformatics”. Babaie, Deocampo, Elliott, Krogstad, and Rose (GEOS), and Prasad, Sunderraman, Zhang, and Zhu (CS). 480k (declined).
2008 - “Developing a knowledge base for brittle and ductile deformation processes in shear zones”. H Babaie and Raj Sunderraman, NSF Instrumentation – Geoinformatics. $239k (returned because proposals are accepted for review on odd years; next submission date: July 2009).
2008 - “Designing process ontologies for natural, experimental, and simulated rock deformation” GSU Research Team Grant with Raj Sunderraman (CS Dept), Funded: $15,000.
2007 - “Acquisition of Improved Technology in the Geosciences”, GSU Technology Fee Proposal, Elliott, Babaie, Prasad, Funded.
2006 - “Microstructural analyses of gouge from the San Andreas Fault Observatory at Depth (SAFOD) borehole in relation to brittle fault mechanics: A collaborative study”. Funded, National Science Foundation, EARTHSCOPE SCIENCE, $171,230 (July 06-June 08). Extended to June 2009.
2006 - “Digital Field Mapping and Geospatial Laboratory Infrastructure in the Department of Geosciences”, Georgia State University, Technology Fee Grant, $93,529.40, Funded.
2006 - “Collaborative Geoinformatics Research: Development and Implementation of the cyberSTRUCTURE Information system (cSIS). NSF EAR-GEOINFORMATICS, (09/01/06-08/31/10), $272,934, declined.
2006 - “Developing dynamic ontologies for the Nankai Trough, SW Japan” Krell Institute, Department of Energy, Computational Science Graduate Fellowship: $31,200/year to support my PhD student’s dissertation (submitted by Shankar Pokharel), renewable up to four years (declined).
2005 - “Computer Based Geological Mapping Infrastructure for Geology Students”, GSU Technology Fee Proposal, $118,080.60 (declined)
2003 - “Developing Structural Geology and Tectonics Markup Languages with XML and J2EE”. $113,569, NSF. declined.
2002 - “Designing an XML-based Structural Geology Markup Language with UML” GSU Research Initiation Grant, Funded: $10,000
2000 - “Development of object-oriented structural geology digital library as a small version of the geosciences digital library”. NSF, Geoscience Education Division, $46,526, declined.
2000 - "Tectonogenesis of the Mashhad ophiolite: A rare occurrence of a remnant of a 300 Ma (Paleo-Tethys) ocean crust”. NSF, Petrology and Geochemistry, with A.M. Ghazi, $101,012, declined
1999 - "An international collaborative investigation of the Khoy ophiolite, N.W. Iran". National Science Foundation Grant #EAR-9903249; Petrology and Geochemistry Program, with A. M. Ghazi. Funded: $110,505 (July 1999-June 2001)
1998 - "Field structural investigation of active basement faults and emergent salt diapirs, Zagros fold belt, Iran". GSU Research Initiation Grant # 99-020, Funded: $5,000
1995 - "Investigation of faulting and fracturing in the seismogenic San Andreas fault, southern California", GSU Research Initiation Grant #96-001, Funded: $5,000
1992 - "Fluid flow and veining in shear zones". Georgia State University, $4,750
1991 - "Experimental deformation of porous rocks: A study of the effects of strain and strain rate on cataclastic flow". Georgia State University Funded: $3,000
1990 - "Microstructural and thermometric study of deformation at the Bitterroot fault zone, Montana". Georgia State Univ., Instructional and Other Grants, Funded: $3,000
1988 - "Structural analysis of shear zones in the Pine Mountain Window, Georgia and Alabama", Georgia State University, Research Grant # 89036, Funded: $2,576
1987 - "Field and microscopic analyses of mylonites southwest of Atlanta, Georgia" Petroleum Res. Fund, Am. Chem. Society, ACS-PRF # 19610-GB2, Funded: $18,000
1987 - "Investigation of ancient accretionary prism, Nevada". GSU Res. Grant # 88061, Funded: $2,917
1986 - "Structural analysis of the Murphy Belt, Georgia and southwestern North Carolina". Georgia State University, Research Grant # 87-096, Funded: $2,812
**Instructional and other funded grants**

1998 - "An interdisciplinary geochemistry program in the Department of Geology", with Burnley, Elliott, Fritz, Ghazi, LaTour, Rose, and Vanko; Research Program Enhancement, $30,000.

1997 - "Purchase of equipment for geochemical investigation", with T.E. LaTour, W.C. Elliott, W. Fritz, S. Rose, A.M. Ghazi, and D.A. Vanko, Quality Improvement Program Award, $9,000.

1996 - "Improvement of Laboratories in the Geology Department" with Seth Rose and Bill Fritz; GSU Quality Improvement Program Award, $6000.

1996 - "Geochemistry" GSU Chancellor's Initiative Fund, #97-019/001, with D. Vanko, S. Rose $30,000.

1993 - "An interdisciplinary geochemistry program in the Department of Geology", with Vanko, Fritz, Rose, and LaTour, Chancellor's Initiative Fund, $52,000

1993 - "Upgrading the Fluid Inclusion Research Laboratory with a microscope Heating and freezing stage" with Vanko, Georgia State QIP, $11,895.

1992 - "Purchase of polarizing microscopes for graduate students", with Fritz, LaTour, and Vanko, GSU Quality Improvement Program Award, $8,000.

1992 - "Acquisition of cathodoluminescence equipment", with Fritz, LaTour, and Vanko, Quality Improvement Program Award, $22,920.

1990 - "Purchase of Thin Sectioning Machines." GSU Quality Improvement Program Award, $12,995

1990 - "Purchase of High Temperature Automated Muffle Furnace" GSU QIP Award, $8,000

1987 - "Purchase of a drafting board digitizer for use in instruction in the Geology Department" Improvement of Instruction Grant, Georgia State Univ. $1,000

1986 - "Acquisition of a contouring system for use in instruction in the Department of Geology." Improvement of Instruction Grant, Georgia State Univ. $1,296

**Publications in refereed journals**

**In prep:**

Babaie, H., Hadizadeh, J., Di Toro, G., Mair, K., Kumar, A., SAFOD brittle microstructure and mechanics ontology and knowledge base (SAFOD BM2KB). For Computers & Geosciences journal.

**Published (student names underlined):**


Babaie, H., (accepted; under revision) "Ontological relations and spatial reasoning in Earth science ontologies". For: Societal Challenges and Geoinformatics. Publication of a Memoir Volume, Geological Society of America (GSA), Editors: Krishna Sinha, Linda Gundersen, Ian Jackson, David Arctur.


Abstracts


Babaie, H. A., Ghazi, A.; Babaei, A.; Duncan, R.; Mahony, J.; Hassanipak, A. New Ar-Ar age, isotopic, and geochemical data for basalts in the Neyriz ophiolite, Iran". EGS - AGU - EUG Joint Assembly, Abstracts from the meeting held in Nice, France, 6 - 11 April 2003, abstract #12899.


Hadizadeh, J. and Babaie, H. A., 1988; A microstructural study of cataclastic rocks in the Towaliga fault zone, Pine Mountain Belt, Georgia, Geol. Soc. America, Abs. w. Prog. 20, 7, A180.


Other Publication and Reports


Professional Field and Laboratory experience:

2005 - Cyberinfrastructure Summer Institute for Geoscientists, San Diego Supercomputer Center, July 18-22, 2005, San Diego, CA

‘98–’03 – Took many Computer Information System (CIS) and Computer Science (CSC) courses for computer programming, analysis and design, and database modeling and implementation

1993 - Took "Fracture Rock Mechanics" short course: Annual GSA Meeting, Nov. 23-27, Boston, MA


1989 - Took "Quantitative Interpretation of Joints and Faults" short course at the Annual GSA Meeting, Nov. 6-9, St. Louis, Missouri
1987 - Took the "Strain & Kinematic Analysis" short course, at the Ann. GSA Mtg., Tempe, AZ
1985 - Studied the global distribution of deformation, hydrocarbon maturation, and thermal history of accretionary prisms (post-doctoral research, Northwestern University, Evanston, IL)
1983 - Studied petrology of clastic rocks of Candelaria Formation in Nevada
1983 - Studied (field and laboratory) Stratigraphy and sedimentology of Osobb Fm in northern Nevada
1981 - Applied two-dimensional gravity modeling of Dixie Valley, NV
1980 - Studied (field) Barbados accretionary prism during Northwestern University Field Camp.
Jordan Arthur Clayton

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APPOINTMENTS

2007-present Assistant Professor, Georgia State University, Department of Geosciences


RESEARCH INTERESTS

Fluvial geomorphology and sediment transport, including: (1) variability in bed load transport, surface texture, subsurface materials, and stress distribution in streams, and the long-term morphological development of natural river landscapes, (2) effect of stochastic disturbances on the dynamics of geomorphic systems, (3) flow and sediment routing in terrestrial and extra-planetary drainage networks, (4) paleohydrology and geomorphic footprint of catastrophic flooding in the late Pleistocene, (5) urban stream restoration and the impact of land-use change on hydrologic systems and stream ecosystems.

EDUCATION and TRAINING

2005 Ph.D. Geography, University of Colorado, Boulder
Dissertation title: Sediment transport and channel form in gravel-bed river meanders. Faculty advisor: John Pitlick; Graduate committee: Nel Caine (Geography), Robert Anderson (Geology), James D. Smith (US Geological Survey), Douglas Kenney (Natural Resources Law Center). Comprehensive exam topics: Process geomorphology, Quaternary geology, and Western water resources management

2000 MS Geography, University of Wisconsin, Madison
Thesis title: The drainage of Glacial Lake Wisconsin: Reconstruction of a late Pleistocene catastrophic flooding episode. Faculty advisor: James Knox; Graduate committee: Vance Holliday (Geography), David Mickelson (Geology), Lee Clayton (Wisconsin Geol. and Natural Hist. Survey), John Attig (WGNHS)

1996 BA Geography, University of Wisconsin, Madison
Focus: Human-environmental interaction

1996 Certificate, Institute for Environmental Studies, Madison, Wisconsin
PUBLICATIONS

Peer-reviewed articles and book chapters: [brackets include journal 5 yr impact factor, as of 2008]


Smucygz, B.*, Clayton, J.A., and Comarova, Z.* *Comparison of changes in runoff and channel morphology as a consequence of urbanization for three Chattahoochee River subbasins, Georgia, USA*. Southeastern Geographer, v. 50(4).

Submitted or in final preparation: (* indicates student author)

Eby, K.N.* and Clayton, J.A. *The impact of local source sediments on bed texture in two uniform reaches of the Fall River in Rocky Mountain National Park, USA*. Submitted to Progress in Physical Geography.


Non peer-reviewed:


Conference proceedings: (* indicates student collaborator)


PRESENTATIONS

2010
[Invited] Clayton, J.A. “****” Invited oral presentation for GSU Law School Urban Fellows Program lecture series, Atlanta, GA.

2009

2009

2009
Clayton, J.A. “Sediment sorting-produced deviations from expected topography in gravel-bed river bends.” Oral presentation at Greater Atlanta Geomorphology and Hydrology Research Conference (GAGHRC), GSU Geosciences Dept., Atlanta, GA.

2009

2009

2009

2009

2009


2008 Clayton, J.A. “Exploring feedbacks between the topography, surface sediments, and bed load transport in rivers of the Southeastern U.S.” Oral presentation at Greater Atlanta Geomorphology and Hydrology Research Conference (GAGHRC), GSU Geosciences Dept., Atlanta, GA.

2008 Eby, K.N. and Clayton, J.A. “Spatial variation in bed texture and its relationship to channel morphology in the Fall River, Rocky Mountain National Park”. Oral presentation at GAGHRC, GSU Geosciences Dept., Atlanta, GA.

2008 Eby, K.N. and Clayton, J.A. “Spatial variations in bed texture and its relationship to channel morphology in the Fall River, Rocky Mountain National Park”. Poster presentation at R. McNair Research Symposium, GSU, Atlanta, GA.


2007 [Invited] Clayton, J.A. “Persistence of the bed texture of a gravel river during a large flood”. Invited oral presentation for colloquium series at GSU Geosciences Dept. Atlanta, GA.


2005 Clayton, J.A. “Spatial variations in bed load transport intensity in a gravel-bed stream bend”. Oral presentation at 60th Annual Meeting of the Rocky Mountain Hydrologic Research Center in Fort Collins, CO.


INSTRUCTION

Courses taught:
Assistant Professor, Department of Geosciences, Georgia State University:


2008, 2010  Geomorphology, upper-level undergraduate and graduate

2007-2010 (3x) Hydorlogy, upper-level undergraduate and graduate

2009  Water Resources Management, upper-level undergraduate and graduate

2009  Graduate seminar in fluvial geomorphology and gravel bed rivers, graduate

2008  Graduate seminar in urban rivers, stream ecology, and river restoration, graduate

2008-2010 (4x) Introduction to Landforms, introductory undergraduate

Lecturer, Geography Department, University of Colorado, Boulder:

2002, 2003  Western Water Resources and Management [Residence Life Academic Teaching Award, Excellence in Graduate Teaching Award], upper-level undergraduate

2003  Introduction to Hydrology, upper-level undergraduate

Teaching Assistant, Geography Department, University of Colorado, Boulder

2002, 2004  Environmental Systems II: Landscapes and Water, introductory undergraduate

2001  Environment and Culture, introductory undergraduate

Teaching Assistant, Geography Department, University of Wisconsin, Madison

2001  Statistics, upper-level undergraduate

1999-2000  Physical Systems of the Environment, introductory undergraduate

Pedagogical training:

2008  Teaching Geomorphology in the 21st Century workshop participant, Colorado State University, Fort Collins

Participant in competitive, week-long, NSF-funded project to provide full-time geomorphology faculty with discipline-specific pedagogical training. Topics covered include the design and implementation of field, lab, and classroom activities, and the development of innovative course design and content.

2007-present  Center for Teaching and Learning workshop participant, Georgia State University

4 workshops attended: Graduate Teaching Assistant coordination, New faculty, Teaching non-majors, The class from heaven

2007  Geography Faculty Development Alliance workshop participant, University of Colorado, Boulder

Week-long, NSF-funded project to provide junior geography faculty with training in academic professional development. Pedagogical topics included: lecturing skills, active learning, course planning, student assessment, discussion leadership, and evaluation methodologies.
2007  Academy for Learning, Georgia State University  
_Positive effect of active learning in GSU introductory science classes workshop_

2002-2003  Lead Graduate Teacher, Geography Department, University of Colorado, Boulder  
_Responsibility for organizing and implementing a series of department training workshops, providing resources and support for graduate student teachers, and conducting videotape consultations. Co-organized interdisciplinary workshop on pedagogical issues in natural science._

2001-2004  Graduate Teacher Program Certification, University of Colorado, Boulder  
_Participated in GTP and departmental workshops, completed videotape consultations and classroom evaluations, prepared teaching portfolio._

Additional details:
2008  Invited faculty lecturer for professional seminar: “Hydrology Fundamentals for Architects, Engineers and Contractors”, Atlanta, GA.

SERVICE
2008, 2009  Founder, organizer, and host of 2008 & 2009 Greater Atlanta Geomorphology and Hydrology Research Conferences  
_Developed regional annual 1-day research conference. Designed for advanced undergraduate and graduate students, faculty, and professionals with backgrounds in related fields to present research in a friendly, scientifically-stimulating setting and as a forum to enhance regional interdisciplinary collaboration. More than 60 participants have attended the meetings, originating from 7 major campuses, the USGS, and local professional organizations, and more than 30 attendees have presented their research. Details at: http://monarch.gsu.edu/jclayton/gaghrc/index.htm. See also http://finchannel.com/Main_News/B_Schools/22003_Georgia_State_to_host_regional_geomorphology,_hydrology_research_conference./

2010  Co-organizer and host, “Georgia’s Water Wars”. Colloquium Speaker Series, featuring invited speakers from academia, nonprofits, and government agencies to address legal, social, and physical aspects of Georgia’s ongoing water dispute with Alabama and Florida. 40+ audience members per talk. Interview and video broadcast of seminar by Georgia Public Broadcasting (2/8/10). Details at: http://www.gsu.edu/39882.html

2010-present  Vice President, member of Board of Directors, Project Water©. _Non-profit organization that assists with the sustainable development of clean water resources in impoverished regions of the globe (initially Peru and Kenya)_

2010  Faculty mentor, Center for Teaching and Learning (CTL), GSU. _Invited to participate in faculty mentoring program by CTL Director._


2009  Interviewed 4 times for Georgia State University public relations, published on front page of GSU website, regarding; (1) drought conditions in Atlanta, available at: [Link]

2008-present Professional organization committee membership, Southeast Division of Assoc. of American Geographers, Student Honors Committee Representative for Georgia

2007-present Departmental committee membership, Dept. of Geosciences, GSU: Chair, Physical Geography Intro. Lab Courses, Graduate Programs, Academic Honesty Appeals

2003-2004 Graduate Representative, Geography Department, University of Colorado, Boulder

2002 Co-coordinator, Geomorphology Reading Group, Geog. Dept, CU-Boulder.

**Thesis supervision:**
Faculty advisor, Graduate Research Theses (Masters) (* indicates graduated)

2007-present *Richard Cartwright, Department of Geosciences, GSU. Thesis topic: Sediment transport and development of fluvial features on Saturn's moon of Titan. Admitted to Geology Ph.D. program, Univ. of Tennessee
*Robyn Polinsky, Department of Geosciences, GSU. Thesis topic: Green roofs and Atlanta's urban hydrology. Employed with EPA, Atlanta office.
Ross Martin, Department of Geosciences, GSU. Thesis topic: Flow modeling and sediment transport in disturbed urban stream channels
Helen Mayoral, Department of Geosciences, GSU. Thesis topic: Water quality monitoring in low-order impaired urban watersheds
Zoia Camarova, Department of Geosciences, GSU. Thesis topic: Modeling urban hydrology in data-poor regions of the world using remote sensing and GIS
Andreas Shoredits, Department of Geosciences, GSU. Thesis topic: Undecided

Faculty supervisor, Ronald E. McNair Post-Baccalaureate Achievement Program Research Project
2008-2009 Kristopher Eby, Department of Anthropology, GSU (Undergraduate)

Thesis committee membership and research supervision:
- Honors Research Thesis (Undergraduate): Dept. of Env. Studies, CU-Boulder (1 student)
- Reader, Graduate Research Thesis (Ph.D.): Dept. of Geosciences, GSU (1 student)
- Directed study, Graduate Research (Masters): Dept. of Geosciences, GSU (4 students)

**Reviews:**
- NSF: Geomorphology and Land Use Dynamics (GLD) program (3 proposals), Geography and Spatial Sciences (BCS) program (1 proposal)
Surface (1), River Research and Applications (2), Southeastern Geographer (1), Water Resources Mgmt (1), Water Resources Research (2)

- Other reviews: Peer-review for chapter of edited volume on Fluvial Geomorphology (1), U.S. Geological Survey internal reviews (3), ‘Geosystems’ textbook (1)

**GRANTS, AWARDS, and HONORS**

2010 (nominated) Outstanding Teaching Award, Georgia State University, College of Arts and Sciences. Nominated by Chair of Geosciences Dept. (Not selected for award, but given letter of commendation from Dean of College.)


2008 Research Initiation Grant, Georgia State University, $9720

2008 Ronald E. McNair Post-Baccalaureate Achievement Program, Faculty Supervisor, Georgia State University, $1000

2005 Excellence in Graduate Teaching Award, University of Colorado Geography Department, $500

2005 Student Paper Award, Association of American Geographers Annual Meeting, Geomorphology Specialty Group, $200

2004 Gilbert F. White Doctoral Fellowship in Geography, University of Colorado Geography Department, $8000

2004 Outstanding Student Paper Award, American Geophysical Union Fall Meeting, Hydrology Section

2004 Residence Life Academic Teaching Award, University of Colorado, Boulder

2003 “The Best Should Teach” Teaching Award, Graduate Teacher Program, University of Colorado, Boulder

2002 Undergraduate Research Opportunities Grant, University of Colorado, $1600

1999 Glenn T. Trewartha Graduate Achievement Award, University of Wisconsin Geography Department, $200

1996 Graduation with Distinction, University of Wisconsin, Madison


*Jordan A. Clayton, Curriculum Vitae, page 10 of 11*
National Science Foundation, Division of Earth Sciences, Grant Proposal 03-37446, “Sediment transport in gravel-bed rivers”, J. Pitlick and J. Clayton. (“Not Able to Support from Limited Funds”).

PROFESSIONAL MEMBERSHIPS

American Geophysical Union (AGU), American Quaternary Association (AMQUA), Association of American Geographers (AAG), Geological Society of America (GSA), Greater Atlanta Geomorphology and Hydrology Research Group (GAGHRC), North Georgia Water Resources Association (NGWRA), Southeastern Division of AAG (SEDAAG)
Jeremy W. Crampton, Ph.D

Curriculum vitae

Department of Geosciences
Georgia State University
Atlanta, GA, 30303
Tel: (404) 413-5771
Fax: (404) 413–5768
Email: jcrampton@gsu.edu
Citizenship: British (US Permanent Resident)

Education
PhD  1994  The Pennsylvania State University: Geography
MS   1987  The Pennsylvania State University: Geography
BA Hons. 1983  University of Liverpool, UK: Geography

Professional Experience
2008—Present. Affiliate Faculty, Partnership for Urban Health/Institute of Public Health, Georgia State University.

2004—Present. Associate Professor of Geography, Department of Geosciences, Georgia State University.

2000–2004. Assistant Professor of Geography, Department of Anthropology & Geography, Georgia State University.

1994–2000. Assistant Professor of Geographic and Cartographic Sciences, Geography & Earth Science, George Mason University, Fairfax, Va. Also held faculty appointment in Cultural Studies.

1993–1994. Visiting Assistant Professor, Geography & Earth Science, George Mason University

1992–1993. Lecturer in Cartography, Department of Geography, Portsmouth University, UK (US equivalent = Assistant Professor).

Research Interests
The politics of space and spatial identity, history of cartography, critical approaches to GIS and cartography, biopolitics and race, Michel Foucault, geosurveillance.


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**Publications**

**Peer Reviewed Journal Articles**


**Review Papers**


Book Chapters


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   1. “Jovan Cvijic”

*Edited Special Issues of Journals*


*Books*

   This book is an investigation of how maps serve to produce knowledge about the world. I argue that maps are political and that if we can develop a critical politics of mapping we shall more fully realize the true richness of mapping as a way of knowing.

   This book is a major statement on the relationships between Foucault’s problematizing of space and disciplinary engagements with Foucault. Featuring some of the leading names in human geography, it also provides the first translations into English of key texts by Foucault.

   An edited collection of GIS columns from GeoWorld Magazine. Includes 12 of my columns.

   This book is aimed at the senior undergraduate and graduate student and is part of Blackwell’s new series of critical introductions to geography.
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**Editorial Positions**


http://www.aag.org/Publications/Annals/annalsweb2.html

**GeoWorld Columns (Quarterly Column on Critical GIS)**

“How can Critical GIS be Defined?” *GeoWorld*, Apr. 2003, p. 54
“Technology Returns to its Origins” *GeoWorld*, Jul. 2003, p. 56


**Peer Reviewed Abstracts and Presentations**

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**Non Peer Reviewed Articles, Essays, Editorials and Interviews**


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**Book Reviews**


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**Major Press Stories**


**Technical Reports**


Research Awards, Fellowships and Grants

External


Consultant: Oliver & Winkle, P.C. Jonesboro, Georgia. Retained as GIS expert consultant to provide findings of fact for firm of lawyers. Award: $585.

Consultant: National Institute of Health (NIH/NIDA), GIS Consultant. “Geography, Networks and Risk in Disease Transmission.” Dr. Richard Rothenburg (Emory University, Department of Medicine) PI. R01 DA19393-01A1. 7/01/05—6/30/10. Award to PI: $2.9 million. This five-year grant, for which I act as GIS consultant, was awarded in full by the NIH in Fall of 2005. It investigates the role of geographical social networks in the spread of infectious diseases.


External Grants In Submission

Grant: National Science Foundation (NSF), Co-PI. “NSF MRI-R2: Acquisition of High-Resolution Visualization for Exploratory Spatial Data Analysis.” Dr. Ying Zhu (GSU), PI. Submitted August 2009. Award Sought: $652,928. Crampton 1.0 month.

Other Selected External Grants (Not Funded)


Grant: Centers for Disease Control (CDC), Co-PI. “Prostate Cancer Boundary Analysis.” Submitted May 2003. Award Sought: $748,991. “Awarded but not funded” (CDC
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result).
"I was lead author in writing this grant. PI Dr. Michael Ericksen, Institute of Public Health, GSU."

**Grant**: Centers for Disease Control (CDC), **Co-PI**. “Prostate Cancer Geocoding.” Submitted May 2003. Award Sought: $747,702. “Awarded but not funded” (CDC result).
"I was second author in writing this grant. PI Dr. Michael Ericksen, Institute of Public Health, GSU."

**Grant**: National Science Foundation (NSF), **Faculty Mentor**. “REU Site: Advancing Earth Science Research with Collaborative Cyberinfrastructure.” Dr. Art Vandenberg (GSU), PI. Submitted August 2008. Award Sought: $463,680. Crampton 0.75 month.

**Grant**: National Science Foundation (NSF), **Co-PI**. “MRI: Development of High Resolution Visualization for Exploratory Spatial Data Analysis.” Dr. Mike Russell (GSU), PI. Submitted January 2009. Award Sought: $1.2m. Crampton 1.0 month.

**Internal**


**Grant**: *Technology Across the Curriculum*, GMU, 1998–1999. **Co-PI** with David Wong, Sheryl Beach. Total Award: $3,000, course release, Graduate Teaching Assistant.

**Course Release for Grant Preparation**: College of Arts & Sciences, GMU, **PI**. “2D or 3D? The Cognitive Effectiveness of a Distributed GIS Campus Map Visualization.” Spring 2000. Award: course release for Spring 2000.


Grant: Provost’s Area of Focus Initiative, GSU, “Partnership for Urban Health Research (PUHR).” As a Partner in this competitively awarded grant, I helped secure a tenure-track position in GIS and Urban Health. 2005. Award to Partnership: $2.34 million. See http://urbanhealth.gsu.edu/

Internal, Not Funded (Selected)

Grant: Faculty Mentored Grant, GSU, Mentee. 2002. Award Sought: $11,000.

Grant: Research Equipment Grant (REG), GSU, PI. “Geospatial Information Analysis and Visualization Laboratory.” 2006. Co-I: Dr. Michael Eriksen, Dr. David Sjoquist, Dr. John Lee, Michael Page. Award Sought: $29,765.90.


Grant: Faculty Mentored Grant, GSU, Mentor. “Listening to the Voices of Community,” Dr. Parama Roy (GSU), PI. Submitted January 2009. Award Sought: $11,000. Crampton: $1,000. Funded but declined by PI due to additional RIG award.

Professional Presentations


Discussant, Environmental Perception and Behavioral Geography and Cartography Specialty Groups Session on Wayfinding, AAG, Atlanta (Apr. 1993). Panelists: Reg Golledge (UC Santa Barbara), Dan Montello (UC Santa Barbara), Myke Gluck (Florida University).


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**Panelist**: EarthWorks, the New Online Refereed Journal of Geography. AAG Charlotte, Apr. 1996.

**Panelist**: The Geography Virtual Department Project. AAG Charlotte, Apr. 1996.

**Chair**: Cartography and the Internet session, NACIS Annual Conference, San Antonio, Oct. 1996.


**Paper**: “A Regional Geography Class In A Distributed Learning Environment”. Institute of British Geographers Annual Conference, University of Surrey, UK, Jan. 1998.


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**Chair:** “Visualization IV: Computational Issues of Visualization,” and “Visualization VI: Applications.” AAG Annual Conference, Pittsburgh, Pa. Apr. 2000.


**Panelist:** “Future Directions of Cartography.” NACIS Annual Conference, Columbus, Ohio, Oct. 2002.


**Invited schoolroom presentation:** Sequoyah Middle School “Proyecto Juventud” (Dana Tottenham Warren, Anthropology graduate student). February 4, 2003.
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**Paper:** “The ‘Double’ Invention of Thematic Mapping.” International Conference for the History of Cartography, Boston, MA/Portland, ME, June 2003 [accepted by peer review].


**Organizer (with Stuart Elden, Durham University):** Space, Place and Calculation.” AAG Annual Conference, Philadelphia, Mar. 2004.


**Invited Classroom Presentation:** Introductory Human Geography, GSU (Professor Dona Stewart). December 2004.


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Organiser: Mapping Stories (with Chris Perkins and Martin Dodge), RGS/IBG Annual Meeting, Manchester, UK. August 2009.


Invited Workshops, Symposia


Center for Spatially Integrated Social Science, Santa Barbara, CA. July 2006. GIS and Population Science Workshops. Held at Penn State and UCSB.

Redlands University, Redlands, CA. June 2008. Three-day workshop to develop GIS Courses (invited participant).

Heidelberg, Germany, June 2009. Knowledge and Power (invited participant).

Teaching

I have taught various Digital Cartography and GIS courses at three universities during my career, two in the United States and one in the UK, ranging from introductory courses to advanced seminars. I am also well
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*experienced in Human Geography as well as graduate seminars on history of cartography, and maps and politics. Since spring 2009 I have also taught political geography.*

**Courses Taught in Previous Five Years**

Fall 2004:
- GEOG2206 Introductory Mapping and GIScience
- GEOG4518/6518 Digital Cartography

Spring 2005:
- GEOG4533/6533 Introduction to GIS Applications
- GEOG8030 Graduate Seminar in Cartography

Fall 2005:
- GEOG2206 Introductory Mapping and GIScience
- GEOG4518/6518 Digital Cartography

Spring 2006:
- GEOG4533/6533 Introduction to GIS Applications

Fall 2006:
- GEOG2206 Introductory Mapping and GIScience
- GEOG4518/6518 Digital Cartography
- GEOG4830 Senior Seminar

Spring 2007:
- GEOG8001 Methods of Geographic Research (Graduate seminar)

Summer 2007:
- GEOG2206: Introductory Mapping and GIScience

Fall 2007:
- GEOG4518/6518 Digital Cartography
- GEOG8001: Methods of Geographic Research (Graduate seminar)

Spring 2008:
- GEOG4518/6518 Digital Cartography
- GEOG8030 The Geospatial Web and Maps 2.0 (Graduate seminar)

Fall 2008:
- GEOG2206 Introductory Mapping and GIScience
- GEOG8001: Methods of Geographic Research (Graduate seminar)

Spring 2009:
- GEOG4518/6518 Digital Cartography
- GEOG4778/6778 Political Geography (new preparation)

I also supervise numerous Internships, Directed Readings and Applied Research in GIS courses every semester.
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**Graduate Student Advising**

*Thesis Committee Chair:*

Paula Edwards—MS Geography  
David Holmes—MS Geography  
Zhanar Karimbayeva—MS Geography

**Graduated Advisees**

Moyo Ogunbajo, Thesis Committee (Graduated Summer 2001).  
Lynn Hale—MS, Anthropology. Committee and Thesis member (Graduated Spring 2004).  
Stacey Martin (nee Kihlstrom)—MS Geography. Committee and Thesis Chair (Graduated Spring 2005).  
Robbyn Usherwood—MS Geography. Committee and Thesis Chair (Graduated summer 2005).  
Stephen Bullard—MS Geography. Committee and Thesis member (Graduated Summer 2006).  
Yueqin Zhou—MS Geography. Committee and Thesis Chair (Graduated Fall 2006).  
Yu Chen—MS Geography. Committee and Practicum Chair. (Graduated Summer 2007).  
Shankar Pokharel—MS Geology. Committee Member (Graduated Summer 2007).  
Charlie Breeden—MS Geography. Committee and Thesis Member (Graduated Spring 2008).  
John Dean—MS Geography. Committee and Thesis Member (Graduated Summer 2008).  
Tara Prizito—MS Geography. Thesis Committee (Graduated Spring 2009).  
Ronald Barrett—MS Geography. Thesis Chair (Graduated Fall 2009).  
Eric Burger—MS Geography. Thesis Chair (Graduated Fall 2009).

**Other Student Supervision**

In addition to departmental student supervision of graduate research assistants, I have also supervised a GRA employed by the Center for Metropolitan and Neighborhood Studies (Summer 2003) and a researcher under my Research Initiation Grant (RIG).

I also supervise a graduate research assistant, who acts as Editorial Assistant for *Cartographica*.

**Graduate Certificate in GIS**

For the GIS Certificate I write and grade students taking their final exam (approx. 2-3 students per year).

**Service—External**

**Editorial and Advisory Boards**

*Annals of the Association of American Geographers,* 2010—
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**Professional Geographer (AAG)**, 2001–2004


**Cartographica**, 2004–2007, Editor 2008—

**Journal of Foucault Studies**, 2004—

**History of Cartography Volume 6: Cartography in the Twentieth Century.** Edited by Mark Monmonier and David Woodward

**The Encyclopedia of Human Geography.** Edited by Nigel Thrift and Rob Kitchin, Cartography Section Editor.


**Peer Review of Federally Funded Grants**


National Endowment for the Humanities (NEH), 2001 (1).

Social Sciences and Humanities Research Council of Canada (SSHRC), 2004

*Midterm Review of SSHRC Initiative in the New Economy (INE) grant, including a site visit to Canada (9/2004)*


**Chair**, Subcommittee on Web Development for NACIS, 1998–2002


Community Service

Mayor’s Office, Atlanta: Solid Waste Advisory Board (SWAC), 2006–2007. Advised on locating and planning to meet Atlanta’s growing solid waste (garbage) needs through siting of transfer stations, landfills, recycling centers.

Selected Service–Internal (GSU)


As Coordinator I had responsibility for all geography undergraduate student advisement (~50 students)


Elected Member, Departmental Executive Committee, 2002–2003

The Executive Committee advises the department Chair on all executive matters, including annual personnel merit assessments

Member, Curriculum Committee, 2000–2002

Member: Search Committee for Geography Lecturer, 2002

Member: Technology Committee resulting in university funding for computer lab remodeling, 2000–2002.

Chair, Search Committee for GIS and Urban Health Assistant/Associate Professor. August 2004-May 2005.


Chair, Search Committee for Human Geographer, August 2007-May 2008 (successful offer and hire).

Member, Executive Committee, Department of Geosciences. 2006—2008.

Graduate Director, Geography, 2006—
The Graduate Director is in charge of the graduate program (MA in geography, to become MS degree in 2008). Includes admission of graduate students, mentorship, supervision of progress and awarding of Graduate Assistantships.

Chair, Search Committee for Human Geography Assistant Professor. 2007—2008 (successful offer and hire).

University Service: Faculty Grievance Committee, 2008—

University Service: University Senate (Committees: Budget, Information Technology, Bylaws), 2008—
The university Senate is the highest faculty representative body in the university. Posts are voted by departmental unit.

Faculty Mentor: Dr. Katherine Hankins (Year 3), Dr. Parama Roy (Year 2), Dr. Dajun Dai (Year 1)
References

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Professor Michael Goodchild
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Tel: + 805 893-8049
Fax: + 805 893-3146

Professor John Pickles
Chair, Department of Geography
University of North Carolina, Chapel Hill
Email: jpickles@unc.edu
Tel: 919 962-3919

Professor Rob Kitchin
Director, NIRSA
John Hume Building
National University of Ireland, Maynooth
Maynooth, Co. Kildare
Email: rob.kitchin@nuim.ie
Tel: + + 353 1 708 3372
Fax: + 353 1 708 6456
Dajun Dai, Ph.D.
Department of Geosciences, Georgia State University
Tel: 404-413-5797; Fax: 404-413-5768; Email: ddai@gsu.edu

Education
Ph.D. 2007, GIS and Environmental Modeling, Southern Illinois University, USA
M.Sc. 2001, GIS and Environmental Planning, Peking University, China
B.E. 1997, Environmental Planning and Management, Jilin University, China

Employment
2009- Assistant Professor
Dept. of Geosciences, Georgia State University, Atlanta, GA
Core faculty member
Partnership for Urban Health Research, Institute of Public Health, Georgia State University, Atlanta, GA
Affiliated faculty member
Emory Center for Injury Control, Atlanta, GA
2008-2009 Visiting Assistant Professor
Dept. of Geography, Northern Illinois University, DeKalb, IL
2007-2008 Visiting Assistant Professor
Dept. of Advanced Technologies, Alcorn State University, MS

Honors
2002 International Student Council Dedication and Service Recognition, Southern Illinois University Carbondale
2001 Doctoral Fellowship, Southern Illinois University Carbondale
2000-2001 Outstanding Graduate Student, Peking University, China
1997 Excellent Thesis Award, Jilin University, China
1995-1996 Excellent Undergraduate Award, Jilin University, China

Refereed Publications
Journal articles (*=student co-author)

**Book chapters, essays, and articles:**

**Abstracts and conference proceedings (‘=student co-author)**

**Manuscripts under revision upon peer-review comments**

**Manuscripts in review**
Dai D. Analyzing pedestrian injuries from personal, environmental, and spatial aspects in Atlanta, Georgia. Accident Analysis and Prevention.

**Papers Presented at Professional Conferences (‘=student co-author)**


**Invited Talks**

09/01/2010, Division of Cancer Prevention and Control, Centers for Disease Control and Prevention, “Black residential segregation and disparities in spatial access to health care facilities: its implications to late-stage breast cancer diagnosis”.

04/08/2010, Public Health 7325 (Urban Health Seminar, Instructor—John Steward), “Geographic disparities in accessibility to food stores in Southwest Mississippi”.

10/20/2009, Geog 8001 (Methods of Geographic Research, Instructor—Jeremy Crampton), “Evaluating geographic disparities in accessibility to food stores in southwest Mississippi”.


**Grants**

**Grants awarded**

Georgia Department of Transportation, $74,982  
6/13/10 – 6/12/12  
A web-based petrologic and geochemical information system of aggregate sources for the Georgia Department of Transportation  
This study is to develop a web-GIS based system to deliver information on aggregate sources for Georgia Department of Transportation  
Role: co-PI

Research Initiation Grant, $10,000  
7/1/10 – 6/30/11  
Georgia State University Research Foundation  
Spatial variation in children with elevated blood lead levels around Peachtree DeKalb Airport, DeKalb, Georgia  
This study is to evaluate the association between the use of aviation gas and child blood lead poisoning in the neighborhoods around Peachtree DeKalb Airport, DeKalb, Georgia.  
Role: PI

2008-ST-062-000003 Kuljaca (PI), $200,000,  
3/01/08 – 8/15/08  
Department of Homeland Security  
Track 1: Development of undergraduate interdisciplinary curriculum for Homeland Security STEM field  
The goal of this study was to develop data mining and visualization course for homeland security curriculum.  
Role: Co-PI
Intellectual renewal grant Dai (PI), $1,000, 11/01/07 – 5/20/08
Alcorn State University
Exploring a genetic algorithm for spatiotemporal cluster detection and analysis for point datasets.
This study was to develop two data sets to test a genetic algorithm for point data mining and support a conference presentation.
Role: PI

GIS program development grant Agyepong (PI), $34,000, 9/10/07 – 11/30/07
Alcorn State University
This project was to upgrade hardware and enhance the computing environment in the GIS laboratory
Role: Co-PI

Dissertation research grant Dai (PI), $11,961, 8/16/05 – 5/15/06
Southern Illinois University
This study was to examine soil dioxin contamination and its association with breast cancer incidence in Midland, Saginaw, and Bay Counties in Michigan
Role: PI

Grants in review
National Institutes of Health, $63,980
NIH PA 08-085: Investigation of the possible presence of a racial, ethnic or socioeconomic bias in healthcare delivery leading to healthcare inequalities and a potential impact on injury outcomes
The goal of this proposal is to examine the potential disparities in prehospital and hospital based health care delivery and how they might affect outcome in these populations using geographic information systems techniques and statistical methods.
Role: PI (multi-PI model)

Grants prepared (not funded)
Department of Defense, National Geospatial-Intelligence Agency, $213,239
2010 University Research Initiatives: Developing a network-based spatial scan statistic and its application to pedestrian crashes
The goal of this proposal was to develop a network-based spatial clustering technique and apply it in network-constrained events.
Role: PI

CDC-GSU Seed Grant, $100,000
Evaluating disparities in spatial access to mammography facilities in Georgia
The goal of this proposal was to evaluate the racial disparities in spatial accessibility to mammography facilities in Georgia.
Role: PI

National Science Foundation, $457,290
NSF MRI-R2: Acquisition of high-resolution visualization for exploratory spatial data analysis
The goal of this proposal is to acquire a high-resolution wall to facilitate data mining and visualization.
Role: Senior personnel

Reviewers in Journals
Annals of Epidemiology, 2010 – present
Health and Place, 2010 – present

Professional Memberships (past and present)
Association of American Geographers (AAG), National Environmental Health Association (NEHA), American Public Health Association, International Association of Chinese Professionals of Geographic Information Sciences (CPGIS), Southeastern Division of the Association of American Geographers (SEDAAG)
A. EDUCATION

2002-2003 Post-Doctoral Fellowship, Soils Programme, Department of Mineralogy, Natural History Museum, London, United Kingdom

2002 Post-Doctoral Traineeship, Water Resources Division, United States Geological Survey

2001-2002 Post-Doctoral Fellowship, Department of Mineral Sciences, National Museum of Natural History, Smithsonian Institution

2001 Ph.D., Geological Sciences, Rutgers, the State University of New Jersey
Dissertation: “Geochemistry and sedimentology of modern East African wetlands and a Pleistocene paleo-wetland at Olduvai Gorge, Tanzania”

1997 M.S., Geological Sciences, Rutgers, the State University of New Jersey
Thesis: “Modern sedimentation and geochemistry of freshwater springs: Ngorongoro Crater, Tanzania”

1994 B.S., Geological Sciences, Tufts University
Thesis: “Paleoenvironments and Late Holocene evolution of a Boston Harbor salt marsh”

B. PROFESSIONAL CREDENTIALS

Assistant Professor of Geosciences, Georgia State University (2008-present)
Adjunct Assistant Professor of Geology, Calif. State U. Sacramento (2010-2012)
Assistant Professor of Geology, Calif. State University Sacramento (2004-2007)
Research Associate, National Museum of Natural History, Smithsonian Institution (2002-2005)
Research Fellow, Natural History Museum (London, UK) (2003)
Post-Doctoral Project Hydrologist, United States Geological Survey (2002)
Research Fellow, Nat. Mus. of Natural History, Smithsonian Institution (2001)
Professional Geologist, State of California (PG#8161)

C. SCHOLARSHIP AND PROFESSIONAL DEVELOPMENT

1. Peer-Reviewed Publications

16. Accepted for Publication. Deocampo, D.M., and Tactikos, J. Geochemical gradients and artifact densities on the Lowermost Bed II Eastern Lake Margin (~1.8 myr), Olduvai Gorge, Tanzania. Quaternary Research. (Accepted 9/7/10)


**2. Technical Reports and Other Non-Refereed Publications**


3. Published Abstracts of Conference Presentations (*student author*)


29. 2010 *Solt, M.*, and Deocampo, D.M. Multivariate analysis of lead in urban soil in Sacramento, CA. G.S.A. Abstracts with Programs, Vol. 42, no. 5. (Accepted for October, 2010 national meeting.)

28. 2010 *Dickie, J.*, Jackson, M.D., Marra, F., and Deocampo, D.M. Mineralogical and geochemical indicators of subaerial weathering in the Pozzolane Rosse Ignimbrite (Alban Hills Volcanic District, Italy). G.S.A. Abstracts with Programs, Vol. 42, no. 5. (Accepted for October, 2010 national meeting.)


4. Current External Funding


5. Pending External Funding


6. Past External Funding


7. Past Internal Funding


D. COURSE INSTRUCTION

Undergraduate (Lower Division)

Georgia State University (2008-present)
- Introductory Geology II (External Processes)
- Geologic Resources and the Environment
- Honors Freshman Seminar
- Geosciences Learning Community

California State University Sacramento (2004-2007)
- Introductory Geology I (Internal Processes)
- Earth Science (for non-majors)
- Oceanography

Undergraduate (Upper Division)

Georgia State University (2008-present)
- Sedimentary Environments and Stratigraphy
- Seminar in Geological Sciences (By Rotation)
- Analytical Methods (By Rotation)

California State University Sacramento (2004-2007)
- Seminar in Geological Sciences (By Rotation)

- Koobi Fora Field School (Lake Turkana, Kenya)

Graduate

Georgia State University
- Geologic Resources and the Environment (Georgia On My Line Distance Learning, Masters in Science Teaching, College Of Education)
• Sedimentary Environments and Stratigraphy

*California State University Sacramento*
• Aqueous Geochemistry
• Research Methods

**SUPERVISED STUDENT RESEARCH**

*Undergraduate*

• Elanor Heil (GSU), F’10. X-Ray Fluorescence Spectroscopy of Georgia Department of Transportation Construction Aggregate Sources. (Entering senior year 2010-2011)

• Elanor Heil (GSU), 2009-10. Experimental Soil Pb Geochemistry. (Entering senior year 2010-2011)

• Brent Leggett (GSU), 2009-10. X-ray fluorescence spectroscopy of Georgia Coastal Marsh Cores. (Now in M.S. program in Geosciences at Georgia State)

• Eliza Andrews (GSU), 2008-9. Soil Pb in Atlanta. (Now in Advanced Materials Science Center graduate program, Western Washington University)

• Tiffany Mahan (CSUS), 2006-7. Marine alkenone paleotemperatures. (Now field paleontologist with PaleoResource consultants, Calif.)

• Brian Zhou (CSUS), 2006-7. Soil Pb in Sacramento. (Now employed outside geology)


*M.S. Thesis Direction*

• Jessica Raines, Georgia State, in progress (begun Fall, 2010). Sedimentary geochemistry of diatomaceous rift-valley fill: Olorgesailie Formation, Kenya.

• Jennifer Garcia, Georgia State, in progress (begun Fall, 2010). X-ray fluorescence spectroscopy and geochemistry of Georgia aggregate sources. Supported by assistantship funded by GaDOT.

• Patti Berry, Georgia State, in progress (begun Spring, 2009). Paleochemistry and Paleolimnology of Pleistocene Paleolake Olduvai


**M.S. Thesis Committee Member (Completed Theses)**

• Tom Naumann, M.S., Georgia State, 2010. *K-Ar values of bulk soil samples and clay fraction: Effects of acid leaching and implications for the origin of micaceous clay in Savannah River Site soils.*

• Joseph Ivanowski, M.S., Georgia State, 2009. *Stream recession coefficients in the Piedmont physiographic province of the Southeast U.S.*

• Richard Whittington, M.S., Georgia State, 2009. *Clay Mineralogy and Illite Crystallinity in the Late Devonian to Early Mississippian Woodford Shale in the Arbuckle Mountains, Oklahoma, U.S.A.*

• Noel Bush, M.S., Sacramento State, 2006. *Natura Water Chemistry and Vertical Hydraulic Gradient in the Hyporheic Zone of the Cosumnes River near Sacramento, California.*


• Mark Nordberg, M.S., Sacramento State, 2005. *Development of a numerical groundwater flow model using observations from a 96-day aquifer storage and recovery pilot test, Roseville, California.*

**Ph.D. Dissertation Direction**

• Brian Meyer, Georgia State, in progress (begun Spring, 2010). *Quaternary geology and geoarchaeology of St. Catherine’s Island, Coastal Georgia.*

• Jill Gehlerter, Georgia State, in progress (begun Fall, 2009). *Environmental and experimental geochemistry in marsh sediment contaminated by the Deepwater Horizon oil disaster.* Assistantship funded by NSF.
E. SERVICE

Service To the Department, College, and University (GSU)

- Director of Departmental X-ray fluorescence facilities (2008-present)
- Member, Graduate Program Committee, Dept. of Geosciences (2008-present)
- Member, Student Recruitment Committee, Dept. of Geosciences (2009-present)
- Member, Faculty Search Committee, Dept. of Geosciences (2008-2009)
- Member, Triennial Chair Evaluation Committee, Dept. of Geosciences (2010)
- Member, Professional Education Faculty, Col. of Arts & Sciences (2008-present)
- Member, Professional Education Council, Col. Of Arts & Sci. (2009-present)

Service To the Discipline

2010-2012 Elected Chair, Limnogeology Division, Geological Society of America.

2010 Appointed Member of the Editorial Board, Minerals. (New MDPI Open Access Journal starting late 2010)


2008-10 Elected Vice-Chair, Limnogeology Division, Geological Society of America


2001-2 Member, Founding Advisory Board, GSA Limnogeology Division
Service as Peer Reviewer

2010
• Paper: G.S.A. Today, manuscript # G81A
• Paper: Journal of Paleolimnology, manuscript # JOPL1783
• Paper: Aquatic Geochemistry, manuscript #AQUA252
• Paper: Geochimica et Cosmochimica Acta, manuscript #W7175
• Paper: Clays and Clay Minerals, manuscript #CCM-410
• Paper: Geochimica et Cosmochimica Acta, manuscript #W7435

2009
• Paper: Developments in Sedimentology, Special Vol. (Alonso-Zarza & Lanner, eds.)
• Paper: Journal of Human Evolution, manuscript # YJHEV-A-433
• Paper: Journal of Paleolimnology, manuscript # JOPL1617
• Paper: Catena, manuscript # 2275

2008
• Paper: Geological Society of America Special Volume (Quade & Wynn, eds.).
• Paper: Geosphere, manuscript # GEOS-00152

2007
• Paper: Journal of Environmental Quality, manuscript #Q07-0092
• Proposal: National Science Foundation (Geobiology & Low-T Geochem.)

2006
• Paper: The Holocene (DOI: 10.1177/0959683607075832)

2005
• Paper: Journal of African Earth Sciences, manuscript #1464-343
• Paper: Journal of Paleolimnology, manuscript #JOPL1015.

2004
• Paper: Canadian Journal of Soil Science, manuscript #04-057
• Proposal: U.S. Civilian Research and Development Foundation

2003
• Paper: Hydrological Processes, manuscript #18790.

Service To the Community

• Member of the Lake Avondale Advisory Board, City of Avondale Estates, Georgia. Provides technical advice to Mayor and Commissioners for management of lake and related natural resources in the city.
JEREMY EVERETT DIEM
Department of Geosciences
Georgia State University
Atlanta, GA 30303
(404) 413-5770
jdiem@gsu.edu

Education
2000: Ph.D. (Geography; minor in Remote Sensing and Spatial Analysis), The University of Arizona
  Dissertation Title: “A Geographical Analysis of Air Pollution in the Tucson Region”
1997: M.A. (Geography), The University of Arizona
  Thesis Title: “A Climatological Examination and Modeling of Carbon Monoxide Concentrations in Central Phoenix, Arizona”
1994: B.S. (Earth Sciences, minor in Geography), The Pennsylvania State University

Major Fields
Physical Geography, Climatology

Employment
2007-present: Associate Professor, Department of Geosciences, Georgia State University
2006-2007: Assistant Professor; Department of Geosciences, Georgia State University
2001-present: Assistant Professor; Department of Anthropology and Geography, Georgia State University
2000-2001: Research Associate; System for the Management, Observation, and GIS Modeling of Air Pollution (SMOGMAP) and Human-Environment Regional Observatory (HERO)
1997-2000: Research Assistant; System for the Management, Observation, and GIS Modeling of Air Pollution (SMOGMAP), Department of Geography and Regional Development, The University of Arizona
1998-1999 (winter): Instructor; Department of Geography and Regional Development, The University of Arizona
1998 (summer): Teaching Assistant; Department of Geography and Regional Development, The University of Arizona
1997 (summer): Research Assistant; Ozone Modeling Assessment (OMAS), Department of Geography and Regional Development, The University of Arizona
1996-1997: Teaching Assistant; Department of Geography and Regional Development, The University of Arizona
1996 (summer): Research Assistant; Phoenix carbon monoxide modeling study, Department of Geography and Regional Development, The University of Arizona
1996 (summer): Teaching Assistant; Department of Geography and Regional Development, The University of Arizona
Refereed Publications


**Other Published Materials**


**Scholarly Presentations**

Atmospheric characteristics conducive to high-ozone days in the Atlanta metropolitan area. Presented at the 64th Annual Meeting of the Southeastern Division of the Association of American Geographers, 22-24 November 2009, Knoxville, TN.


Tropospheric moisture and monsoonal rainfall over the southwestern U.S., Presented at the Fourth Symposium on Southwest Hydrometeorology, 20-21 September 2007, Tucson, Arizona

Anomalous monsoonal activity in central Arizona, USA. Presented at the 61st Annual Meeting of the Southeastern Division of the Association of American Geographers, 19-21 November 2006, Morgantown, WV.


Northward extension of intense monsoonal activity into the southwestern United States. Presented at the 60th Annual Meeting of the Southeastern Division of the Association of American Geographers, 20-22 November 2005, West Palm Beach, FL.

The Norcross anomaly: Evidence of possible urban effects on precipitation near Atlanta, Georgia. Presented at the 59th Annual Meeting of the Southeastern Division of the Association of American Geographers, 21-23 November 2004, Biloxi, MS.


Human impacts on summer precipitation in central Arizona, USA. Presented at the 57th Annual Meeting of the Southeastern Division of the Association of American Geographers, 23-26 November 2002, Richmond, VA.


Spatial modeling of ambient ozone in the Tucson region. Presented at the 96th Annual Meeting of Association of American Geographers, 4-7 April 2000, Pittsburgh, PA.


Seasonal and interannual climate controls on forest and wildland fire in the Southwest. Presented at American Meteorological Society 23rd Conference on Agricultural and Forest Meteorology, 2-6 November 1998, Albuquerque, NM.


Carbon monoxide climatology and forecast model development for Phoenix, Arizona. Tucson Environmental Planning Advisory Committee, 7 July 1997, Phoenix, AZ.


Climatological analysis of carbon monoxide concentrations in Phoenix, Arizona. Presented at Western Geography Graduate Student Conference, 14-16 February 1997, Tucson, AZ.

Public Lectures

Introduction to the Climate System and Climate Change. Presented with Dr. Greg Huey of the Georgia Institute of Technology at the Atlanta Science Tavern, 17 April 2010.

Enhanced Rainfall Downwind of Atlanta, Georgia. Presented as part of the Fall 2007 seminar series sponsored by the Department of Geology and Geography at Georgia Southern University, 25 October 2007.


Local Anthropogenic Impacts on Warm-Season Precipitation in Central Arizona, USA. Presented as part of the 2003/2004 colloquium series sponsored by the Department of Geography and Regional Development at The University of Arizona, 3 October 2003.


The Carbon Cycle. Presented at Biosphere 2 Earth Semester Program, February 1998, Biosphere 2 Center, Oracle, AZ.
Public Discussions

Honors and Awards
STEM Faculty Fellowship, Georgia State University, 2009.
Remote Sensing Mini-Grant, GeorgiaView, 2005.
Writing Across the Curriculum Course-Development Grant, Georgia State University, 2003.
Research Initiation Grant, Georgia State University, 2003.
Travel Grant, The University of Arizona Graduate and Professional Student Council, 2000.
Third Place, Regional Scholarship Competition, Grand Canyon Section of Air and Waste Management Association, 1999.
Second Place, Climate Specialty Group Student Paper Competition, 95th Annual Meeting of Association of American Geographers, Honolulu, HI, 1999.
Travel Award, Association of American Geographers Climate Specialty Group, 1999.
First Place, National Scholarship Competition, Air and Waste Management Association, 1999.
Travel Grant, The University of Arizona Graduate and Professional Student Council, 1999.
Third Place, National Scholarship Competition, Air and Waste Management Association, 1998.
Travel Grant, The University of Arizona Graduate and Professional Student Council, 1998.
Scholarship, Tucson Women's Transportation Seminar, 1996.
University Fellowship, Department of Geography and Regional Development, The University of Arizona, 1995.

External-Funding Proposals
2010: National Aeronatics and Space Administration. Shifting needs and niches: The persistence of parks in equatorial Africa under climate change. Co-Investigator. (pending)
2009: National Science Foundation. Collaborative Research: An innovative approach to examine changes in monsoon characteristics within the Lower Colorado River Basin, USA. Principal Investigator. (not funded)
2009: National Aeronatics and Space Administration. Creating an enduring legacy of exemplary global climate change education for secondary science teachers and underserved students in Georgia. Co-Investigator. (funded; $499,950 over three years)

2008: National Science Foundation. Collaborative Research: Understanding the spatiotemporal complexity of the North American Monsoon System within the Lower Colorado River Basin. Principal Investigator. (not funded)

2006: National Science Foundation. Collaborative Research: Understanding the spatiotemporal complexity of monsoonal activity within the Lower Colorado River Basin. (not funded)

2006: National Science Foundation. CAREER: Land-atmosphere exchange of carbon within a rapidly urbanizing region. (not funded)

2005: GeorgiaView. Land-cover classification of the Atlanta Region. (funded)

2004: National Science Foundation. CAREER: Land-Atmosphere Exchanges of Carbon Dioxide within an Urban Ecosystem. (not funded; given status of fund with medium priority)

2003: National Science Foundation. CAREER: Environmental impacts on land-atmosphere exchanges of a greenhouse gas within an urban ecosystem. (not funded)

2002: National Science Foundation. Investigating the link between air pollution and the health of coniferous forests in southern Arizona, USA. (not funded)

2002: Subcontractor on Southeastern Air Resource Managers Visibility Improvement - State and Tribal Association of the Southeast grant proposal. (not funded)

2000: National Science Foundation. Investigating spatio-temporal relationships between ozone, climate, and forest injury in the southwestern United States (not funded)

Professional Development
Institute for the Scholarship of Teaching and learning (SoTL), 1-2 June 2009, Amicalola Falls, GA
Geography Faculty Development Alliance (GFDA) workshop, 19-26 June 2004, Boulder, CO
Partnership for Reform in Science and Mathematics (PRISM) Institute, 23-24 April 2004, Atlanta, GA

Selected Service
Outreach
Review, Physical Geography, Science of the Total Environment, The Professional Geographer, Theoretical and Applied Climatology

2008: Discussant of climate change, Clayton State University
2005-2007: Member of Environmental Pollution editorial board
2005-2010: “Meteorology Event” coordinator for the Science Olympiad Regional Competition
2004: Guest lecturer for Integrated Science program of the College of Education
2002-2003: "Road Scholar" coordinator for the Science Olympiad Regional Competition
1998: Presenter at the Pima College Summer Academy
1997: Guest Lecturer, Third Annual Environmental Awareness Conference at Coronado Middle School (Tucson, AZ)

Intramural

2010: Chair of chair evaluation committee in the Department of Geosciences at Georgia State University
2009-present: Chair of self study for Department of Geosciences at Georgia State University
2009-present: University System of Georgia Science, Technology, Engineering, and Math (STEM) faculty fellowship
2009: Reviewer of Georgia State University research initiation grant proposals
2008-2009: Search committee chair for position in Geographic Information Systems/Urban Health in the Department of Geosciences at Georgia State University
2008: Reviewer of Georgia State University research initiation grant proposals
2007-2008: Search committee chair for position in Urban Health/Geographic Information Science in the Department of Geosciences at Georgia State University
2007: Search committee chair for two positions in Physical Geography in the Department of Geosciences at Georgia State University
2007-2009: Representative from the Department of Geosciences in the university senate at Georgia State University
2006-present: Undergraduate director in the Department of Geosciences at Georgia State University
2006-present: Executive committee for Department of Geosciences at Georgia State University
2006-present: Pullen Library faculty liaison for Department of Geosciences at Georgia State University
2006-present: Coordinator of learning-outcomes assessment for Department of Geosciences
2004-2005: Coordinator of critical-thinking assessment member for Department of Anthropology and Geography
2004-2005: Coordinator of learning-outcomes assessment for Department of Anthropology and Geography
2004: Georgia State University representative for GeorgiaView
2004-2005: Faculty search committee (Physical Geography) for Department of Anthropology and Geography at Georgia State University
2004-2005: Faculty search committee (GIS/Public Health) for Department of Anthropology and Geography at Georgia State University
2004: Reviewer of Georgia State University dissertation grant proposal
2003-2005: Executive committee for Department of Anthropology and Geography at Georgia State University
2002: Faculty search committee for Department of Anthropology and Geography at Georgia State University
2002-2003: Coordinator of colloquium series for Department of Anthropology and Geography at Georgia State University
2001-2005: Pullen Library faculty liaison for Department of Anthropology and Geography at Georgia State University
1999: Graduate student representative on faculty search committee for Department of Geography and Regional Development at The University of Arizona
1997: Undergraduate Student Writing Task Force, College of Social and Behavioral Sciences, The University of Arizona

Memberships
Association of American Geographers

Courses Taught
Introduction to Physical Geography (Lecture): The University of Arizona
Introduction to Physical Geography (Climatology lab): The University of Arizona
Introduction to Physical Geography (Geomorphology lab): The University of Arizona
Introduction to Weather and Climate (Lecture): Georgia State University
Advanced Weather and Climate (Lecture): Georgia State University
Environmental Climatology (Seminar): Georgia State University
Quantitative Spatial Analysis (Lecture): Georgia State University
Climatic Variability and the Carbon Cycle (Seminar): Georgia State University
Introduction to Remote Sensing (Lecture): Georgia State University
Climatic Change (Lecture): Georgia State University

Graduated Advisees

Updated on 29 August 2010
Leslie A. Edwards  
Curriculum vitae  
September 2010

Education:
- Ph.D. University of Georgia, Geography. Dissertation Title: *Vegetation Dynamics and Biogeomorphic Influences in a Highly Eroded Landscape.*
- M.A. Georgia State University, Geography: Thesis Title: *A Century of Change: Using Repeat Photography to Analyze Vegetation Change in Tallulah Gorge, Georgia.*
- M.S. Georgia State University, Business Management.
- B.A. University of Virginia, English, with Distinction.

Current positions:
- Lecturer, Georgia State University, Geosciences Department
- Lead editor, the *Guide to the Natural Environments of Georgia* (to be published by the University of Georgia Press in 2011)

University Teaching Experience
- Graduate seminar in Environmental Geography, Georgia State University (Spring 2010)
- Introduction to Weather and Climate: Georgia State University (Fall 2008-present)
- Practicum for Geography Laboratory Instructors, Georgia State University (Fall 2009)
- World Regional Geography: Georgia State University (Spring 2009)
- World Regional Geography: Kennesaw State University (2005-2007)
- Social Issues in Geography: Kennesaw State University (Spring 2008)
- Introduction to Earth Sciences (Weather and Climate, Biogeography, Landforms): University of Georgia (1998)
- Introduction to Landforms: Georgia State University (1993-1995)
- Laboratory Introduction to Landforms: University of Georgia (1996-1997)
- Laboratory Introduction to Weather and Climate: Georgia State University (1992-1993)

Education Partnerships, Pedagogy, and Teacher Training
- Collaborator in NASA grant for teaching climate change to undergraduate students and education students at Georgia State University. 2008- present.
- Teaching Climate Change Workshop sponsored by Dickenson College through a NASA grant, which emphasized multi-disciplinary approaches to teaching climate change. July 2010.
- McGraw-Hill Focus Group meeting in regard to new ways to teach Physical Geography using increased visualization tools in September 2009
- Collaboration with the College of Education in the development of the Geography 1112 Laboratory. Ongoing.
- Played a major role in the submission of the curriculum proposals for the Integrated Science (ISCI) approved by both the College of Arts and Sciences and the College of Education (September 2008).
• Participation in STEM (Science, Technology, Engineering and Math) meetings, a nation-wide effort to improve science education.

Georgia State University Departmental/Committee Service
• Member of Geosciences Visiting Lecturer search committee; 2010
• Member of Geosciences Department Assessment committee; 2010
• Geosciences Summer 2010 Newsletter co-editor
• Attended meeting of the Undergraduate Council, College of Arts and Sciences, March 2010
• Gave a presentation on environments of Georgia and some political aspects for Political geography class, March 2010.
• Talked with students in the Senior Seminar in re career paths in Geography, Apr. 2010
• Member of Geosciences committee for Introductory Courses (2008-present)
• Geosciences Summer 2009 Newsletter co-editor
• Member of search committee for part time Geography instructor; 2009

Teaching awards
• Faculty honoree for Freshman 4.0 program, Kennesaw State University, 2006
• Outstanding Graduate Teaching Award, University of Georgia, 1997

Grants and honors:
Honors
• Phi Kappa Phi (2001)
• Beta Gamma Sigma (1998)
• Graduated with Distinction, University of Virginia (1978)
• Honors, oral examination in fulfillment of Masters in Geography (1996)
• Presidents Club: top one percent of managers, BellSouth Advertising and Publishing Corporation (1991)
• Sterling Award: top quarter of managers, BellSouth Advertising and Publishing Corporation (1987-1991; entire length of program)

Grants
• Collaborator in the grant from the NASA Global Climate Change Education program for $499,950
• The UGA Press obtained $25,000 from the Georgia Department of Natural Resources for the purpose of publishing the book, The Guide to the Natural Communities of Georgia, of which I am the lead editor.
• The UGA Press obtained $50,000 from the Atlanta Gaslight Foundation for the purpose of publishing the book, The Guide to the Natural Communities of Georgia
• University of Georgia Graduate School Doctoral Research Assistantship (2000-2001)
• National Science Foundation Doctoral Dissertation Improvement Grant, highest priority ranking (1999-2001)

Professional Organizations
• Association of American Geographers
Southeastern Association of American Geographers
Southern Appalachian Botanical Society
The Georgia Botanical Society
Georgia Plant Conservation Alliance

Community partnerships and service:

- Georgia Exotic Pest Plant Alliance: committee to designate threat levels of exotic pest plants in the state of Georgia. September 2010
- Taught a Master Naturalists class on the plant communities of the Blue Ridge in June 2010. The Master Naturalist certificate program is a community-oriented program of the Georgia Extension Service.
- Developed and taught a Master Naturalists class on the plant communities of the Piedmont in May 2010. The Master Naturalist certificate program is a community-oriented program of the Georgia Extension Service.
- Developed the Environmental Classification System now being implemented by the Georgia Department of Natural Resources to classify coarse-scale habitats of Georgia. This classification system will appear on the DNR’s web site, and will be used by botanists, zoologists, community ecologists and land managers. An ongoing effort.
- The book *The Guide to the Natural Environments of Georgia* is being developed in conjunction with the Georgia Department of Natural Resources, which has donated personnel and $25,000 to the effort. One editor is Dr. Jon Ambrose, the Assistant Chief of the Nongame Conservation Section of the Georgia Department of Natural Resources, Wildlife Resources Division
- Developed and taught a Master Naturalists class on the plant communities of Blue Ridge in June 2009. The Master Naturalist certificate program is a community-oriented program of the Georgia Extension Service.
- Formally reviewed the 50 year Zahnd Natural Area Management Plan for the Georgia Department of Natural Resources (February 2009).
- Supplied the Georgia Parks service and the site manager of Providence Canyon State Park with a list of Plant Species of Special Concern, along with the GPS coordinates of those plants (March 2009).
- Performed a peer review of the on-line publication Native Ferns of Georgia for the University of Georgia Extension Service (March 2009).
- Georgia Plant Conservation Alliance: accepted request to represent Georgia State University as a member organization
- Georgia Botanical Society Board in position of past president (2008-present)
- Editorial Board for Tipularia, the journal of the Georgia Botanical Society (2008-present)
- Georgia Botanical Society, President (2006-2008)
- Georgia Exotic Pest Plant Council, Executive Board (2003-2005)
- League of Women Voters, Executive Board and Natural Resources Chair (1993-1995)
- Atlanta Environmental Priorities Project, Steering Committee: (1993-1994)

Recent Conferences and Professional Meetings
Cullowhee Native Plant Conference (Summer 2010)
Annual meeting of the Southeastern Division of the Association of American Geographers (Fall 2009)
Semi-annual meeting of the Georgia Plant Conservation Alliance (January 2010)

**Prior positions:**
Visiting Lecturer, Department of Anthropology and Geography, Kennesaw State University (2005-2008)
Prior to starting on the masters and doctoral degrees in Geography, I was a manager with BellSouth Advertising and Publishing Corporation, holding various project management, policy, training and technological positions that involved long-term strategic planning, job design for automation of clerical functions, policy formation, and development of training programs and technical manuals (1978-1992).

**Books and Journal Articles:**


**Non-technical Articles**


**Presentations and Posters (post-corporate technical and non-technical):**

Cullowhee Native Plants Conference. 2010. Plenary speaker following Dr. Peter Raven, president of the Missouri Botanical Garden. *Reading the Landscape: Gardening from a (Landscape) Ecologist’s Perspective.*

University of Georgia Press Advisory Board. 2007. Overview of the *Guide to the Natural Environments of Georgia.*

Atlanta Gas Light Foundation.  2007. Overview of the *Guide to the Natural Environments of Georgia.*


Georgia Water Resources Conference 1999. The impact of past and present land use on two Georgia piedmont streams.

Georgia Academy of Sciences 1995. Creation of a graduated symbol map depicting Georgia population distribution using cartographic software.
W. CRAWFORD ELLIOTT

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Georgia State University
Atlanta, GA 30302-4105

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Fax: 404/413-5768

I. EDUCATION
   Ph.D., Geological Sciences, Case Western Reserve University (1988).
   Dissertation: "Bentonite Illitization In Two Contrasting Cases: The Denver Basin
   And The Southern Appalachian Basin."
   Thesis: "Petrogenesis of a Platiniferous Zone of the Stillwater Complex,
   Montana."

II. PROFESSIONAL CREDENTIALS
   Associate Professor of Geosciences and Award of Tenure, GSU (2001-present)
   Assistant Professor of Geology, GSU (1995-2001)
   Sr. Research Associate, Geological Sciences, Case Western Reserve University (1990-
   1995).
   Visiting Assistant Professor, Geological Sciences, Michigan State University (989-1990).
   Research Associate, Geological Sciences, Case Western Reserve University (1987-1989).

III. ACADEMIC EMPLOYMENT
   2007-present: Department Chair, Geosciences, Georgia State University
   2001-present: Associate Professor, Department of Geosciences, Georgia State University.
   1995-2001: Assistant Professor, Department of Geology, Georgia State University.
   1990-1995: Senior Research Associate; Department of Geological Sciences, Case
   Western Reserve University (CWRU), Cleveland, OH 44106-7216.
   1989-1990: Assistant Professor (Visiting); Department of Geological Sciences, Michigan
   State University, East Lansing, MI 48824-1115.
   1987-1989: Research Associate; Department of Geological Sciences, CWRU.
   1983-1987: Graduate Teaching and Research Assistant; Department of Geological
   Sciences, CWRU

IV. ADMINISTRATIVE EXPERIENCE
   University, College and Departmental Service (all Georgia State University):

   University, College and Departmental Service (all Georgia State University):
University System of Georgia, Academic Committee on Geological Sciences and Geography (November, 2007-present)
Geosciences Department Chair, July 1, 2007-present.
Geosciences Faculty Search Committee in Sedimentology (Chair), 2006-2007.
Geosciences Executive Committee (2006-present, ex officio member 2007 to present)
GSU Intellectual Property Policy Committee (2006-2007)

Member of Academic Programs and Research Committees.

College of Arts and Sciences Graduate Studies Committee (2001-2007)
Geology Faculty Search Committee in Sedimentology (Chair), 2000-2001
Department of Geology Triennial Review of Chair (member): 2000, 2005
University Radiation Safety Committee: 1998-present.
University Center of Georgia: Lecture in Geology, Chair, 1997-1998.

V. BUSINESS AND PROFESSIONAL EXPERIENCE

1981-1982: Technologist, Republic Steel Corp. (Research Division), Cleveland, OH 44131.

VI. INSTRUCTIONAL ACTIVITIES

Undergraduate (Lower Division):

- Physical Geology
- Historical Geology
- Earth and Planets
- Introductory Geology I (Internal Processes)
- Introductory Geology II (External Processes)
- Geologic Resources and the Environment.

Undergraduate (Upper Division) & Graduate:

- Advanced Topics in Physical and Historical Geology (Graduate only)
- Analytical Methods (by rotation)
- Environmental Geology (writing intensive course)
- Seminar in Geological Sciences (by rotation)
- Soils, Clays and Weathering (Graduate only)

Research Direction:

M.S. Thesis
Adebayo Ayorinde (M.S., progress)
VII. INTELLECTUAL CONTRIBUTIONS

A. Publications


Anderson, J.R., Young, C.D., Elliott, W.C., (press) Correlation of the Sandersville Limestone lithofacies to the Ocmulgee Formation: Southeastern Geology


doi:1346/CCMN.2006.0540303

timing and causes of illite formation and remagnetization in the Cretaceous Marias River
Shale, Disturbed Belt, Montana Journal of Geochemical Exploration. v. 89, p. 92-95.
doi:10.1016/j.geexplo.2005.11.033

Burial Diagenesis in Mississippian Carbonates, Utah: Journal Geophysics Research,

and Geochemistry of the Savannah (Georgia) Aquatic Environment: Journal of
Environmental Restoration and Monitoring, Special Issue: Proceedings of the First

Chaudary-Webb, M., Paschal, D., Romieu, I. Ting, B., Elliott, W.C., Hopkins, H., Sanin, L.H.,
Ghazi, A.M., 2003, Determining lead sources in Mexico using lead isotope ratio: Revisita
Salud de Mexico, v. 45, Supplement 2, p. S183-S188. http:
www.insp.mx/salud/45/45s2_1.pdf

Chadwick, O., Gavenda, R.T., Kelly, E.F. Ziegler, K, Olson, C.G., Elliott, W.C., Hendricks,
D.M., 2003, The Impact of Climate on the Biogeochemical Functioning of Volcanic

Elliott, W.C., and Haynes, J.T., 2002, The Chemical Character of Fluids forming Illite in the

inclusions in the Deicke and Millbrig Potassium Bentonites, Southern Appalachian

earth elements and the platinum group metals in relation to base metal zoning in vicinity
to the Rote Fäule in the Kupferschiefer, Poland: Applied Geochemistry, v. 16, no. 3, p.
375-386.

Bauluz, B., Peacor, D.R., Elliott, W.C., 2000, Coexisting altered glass, Fe-Ni oxides, and
spherules at the K-T boundary, Stevns Klint, Denmark: Earth and Planetary Science

Bechtel, A., Shieh, Y.-N., Elliott, W.C., Oszczepalski, S., Hoernes, S., 2000, Mineralogy,
crystallinity, and stable isotopic composition of illitic clays with the Polish Zechstein
Basin: Implications for the genesis of Kupferschiefer mineralization: Chemical Geology,
v. 163, p. 189-205.
Rose, S., and Elliott, W.C., 2000, The effects of pH regulation upon the release of sulfate from ferric precipitates formed in acid mine drainage, Applied Geochemistry, v. 15, p. 27-34.


B. Books, Monographs, Chapters, Technical Reports


Elliott, W.C., Savin, S.M., Ketterer, M., Varnes, A.W., 1995, Determination of the sources of lead being ingested by children in the Cleveland, OH urban environment through measurements of lead isotope ratios and selected trace elements. Final Report sent to Dr. Peter Briss, Centers for Disease Control, Atlanta, GA., 83 pages.

D. PROFESSIONAL PRESENTATIONS

Invited Lectures (excluding interview talks):

Atlanta Geological Society (2/06)
Northern Arizona University (3/03)
Auburn University (2/03)
Oklahoma University (10/02)
University of Illinois (10/00)
University of Georgia (4/00)
Weinman Mineral Museum (7/98)
Atlanta Geological Society (11/97)
Georgia Institute of Technology (2/97)
Auburn University (1/97)
University of North Carolina - Chapel Hill (3/96)
University of Georgia (3/96)
University of Tennessee-Knoxville (10/95)
Oak Ridge National Lab (10/95)
Society for Applied Spectroscopy [Cleveland, OH Chapter] (3/95)
Northern Ohio Geological Society (12/94)
Canadian Society of Petroleum Geologists (5/94)
Bowling Green State University (11/93)
University of Aix-Marseille III, France (7/93)
University of Akron (11/92)
Geological Museum University of Copenhagen (6/91)
Exxon Production Research (12/90)
Ohio University (4/90)
University of Goteborg, Sweden (6/89)
Kent State University (4/88)
Northern Ohio Geological Society (4/88)
Cornell University (2/88).

Conference Convened

Convener, NSF Workshop - Directions in Low Temperature Geochemistry – (06/99)

Conference Presentations


VanTrees, C., Elliott, W.C., 2009, Analysis of precipitates and waters associated with an alkaline leachate Gulf Steel States property, Gadsden, AL, 2nd Annual Greater Atlanta Geomorphology and Hydrogeology Conference, p. 11.


Aronson, J.L., and Elliott, W.C., 1994, Illite/smectite, a valuable K/Ar clock for the secondary history of sedimentary basins: ICOG Meeting, Berkeley, CA.

Morescalchi, S.F., Mertzman, S.A., Elliott, W.C., and Chadwick, O., 1994, Kohola Volcano, Hawaii, new K/Ar ages and whole-rock geochemistry, GSA Abstracts with Programs, 26, no. 3, 64.

Sears, K., Hesse, R., Vali, H., Elliott, W.C., Aronson, J.L. 1993, Burial-diagenetic K/Ar ages from the <0.05 µm fraction of illite/smectite mixed layer clays, Reindeer D-27 Well, Beaufort-MacKensie Basin, Canada, GSA Abstracts with Programs. 25, No. 6, 225.

Elliott, W.C. 1993, Rare earth element geochemistry of smectite from the Cretaceous/Tertiary boundary in Denmark, GSA Abstracts with Programs. 25, No. 6, 319.


**Short Courses and Research Conferences Attended**

- Teaching of Clay Mineralogy Workshop – Clay Minerals Society (7/02)
- ICDD Advanced Course in X-ray Diffraction Techniques (7/95)
- Remediation of Soil and Groundwater, GSA Annual Meeting (10/94)
- Paleosols Short Course, GSA Annual Meeting (10/93)
- SOHIO-Research - Clay Mineralogy and X-ray Diffraction (7/85)
- AAPG Research Conference - Radiogenic Isotopes and the Evolution of Sedimentary Basins (3/85)
- SEPM Short Course - Stable Isotopes in Sedimentary Geology (3/83).

**E. EDITORIAL AND REVIEWER PROJECTS**

**Editorial**

- Associate Editor, American Mineralogist (2006-present).

**Reviewer**

- Environmental Science and Technology
Earth Science Reviews
Chemical Geology
Clays and Clay Minerals
Clay Minerals
Earth and Planetary Science Letters
Geology
Geological Society of America Bulletin
Geochimica et Cosmochimica Acta
Geological Quarterly
Gondwana Research
Journal of Geology
Journal of Sedimentary Research
National Science Foundation
Nature
Petroleum Research Foundation
Sedimentology.

F. GRANTS AND EXTERNAL FUNDING

External Research Grants, Contracts and Awards:


Imerys Pigments and Additives Group, Sandersville GA, $30,144 and $20,000 from GSU ETACT Funds, Donation of a Hatachi S2500 Scanning Electron Microscope (December 29, 2003).


Chevron Petroleum Technology Company: Donation of Sharples Super Centrifuge.

National Science Foundation, $20,480. Directions and Priorities in Low-Temperature Geochemistry for Year 2000 and the Decade Beyond (June 1, 1999 - May 31, 2000).

Petroleum Research Foundation, $24,980., The Use of Illite to Understand the Flow of Heat and Fluids due to the Alleghanian Orogeny. Type B Award for Undergraduate Research. (9/97-12/99).
Max Kade Foundation, $29,000. The Timing and Mechanism of Cu-Ag Mineralization in the Kupferschiefer Shale. [Post-Doctoral support of Dr. Achim Bechtel], 7/97-6/98.

Department of Energy, Battelle Pacific Northwest Laboratoires, $25,000. A study of “Heterogeneity Cores at Cerro Negro” (in collaboration with Case Western Reserve University), 9/95 - 2/97. Subcontract to GSU: $5,800.

Ohio Air Quality Development Authority, $50,805. A Study of the Inventory and the Sources of Lead in Soil in the Cleveland Area (1/95 - 5/97).

Cleveland Environmental Health Watch, and Center for Disease Control (Atlanta, GA), $20,000. Lead isotopic measurements to determine source(s) of environmental lead in Cleveland, OH (9/93-9/95).

Mobil Research and Development Corporation, $45,000. K/Ar age measurements of illite from various geologic settings (7/91 to 7/95).

Exxon Research, $35,000. Cooperative research on the separation and dating diagenetically formed illite in shales, and on illite age analysis (7/91 to 7/93).


Internal Instructional and Research Grants:

Georgia State University, QIF, Construction of K-Ar line, $30,000, May 2000.

Georgia State University, Writing Across the Curriculum, $2,000., May 19, 2000.

Georgia State University, Outstanding Junior Faculty Award, $500., May 12, 1998.


GSU Quality Improvement Program, Acquisition of Particle Size Analyzer (with W.J. Fritz), $25,000., March 30, 1996.

VIII. PROFESSIONAL AND HONOR ORGANIZATION ACTIVITIES

A. Membership

American Association for the Advancement of Science
American Chemical Society
Atlanta Geological Society
Clay Minerals Society
Geochemical Society
Geological Society of America (Fellow)

B. Professional Societies and Offices Held:

Clay Minerals Society
   Chair, Finance Committee (2004-2005).
   Source Clays Committee (2007-present)
   Policy and Administration (2009-present)
Elements Executive Committee (Clay Minerals Society Representative) 2009-2012.

Geological Society of America.
   Southeast Section: Committee on Student Grants, 1997-1999.

IX. AWARDS AND HONORS:

Georgia State University: College of Arts and Sciences, Outstanding Junior Faculty Award, May 1998.


Updated: June 30, 2009
KATHERINE B. HANKINS
Curriculum Vitae

Department of Geosciences
Georgia State University
PO Box 4105
Atlanta, GA 30302-4105
404 413-5775
khankins@gsu.edu

Assistant Professor, Georgia State University, 2006 - present

EDUCATION
University of Georgia
Ph.D. Geography, August 2004
Advisor: Dr. Deborah G. Martin

University of Arizona
M.A. Geography, 2000
Master’s Thesis: “The Restructuring of Retail Capital and ‘Old Town’ Retailing: The Case of Colorado Boulevard in Pasadena, California”
Advisor: Dr. Sallie A. Marston

Dartmouth College
A.B. Russian Area Studies (major) and Geography (minor), 1997
University of Georgia Study Abroad, Cortona, Italy Summer 1996
Dartmouth College Foreign Study Program, St. Petersburg, Russia Spring 1996

PUBLICATIONS
Refereed Publications
Hankins, K. and A. Walter, (accepted) “‘Gentrification with justice’: An urban ministry collective and the socio-spatial dialectic of poverty in Atlanta’s inner city neighborhoods” Urban Studies.


Hankins, K., 2002 “The restructuring of retail capital and the street” *Tijdschrift, the Journal of Economic and Social Geography* 93(1): 34-47.


**Book Chapters**


**Works in Review**

Hankins, K. and R. Cochran, “Racialized practices and the (re)making of a place of whiteness in Atlanta, Georgia” submitted to *Social and Cultural Geography* (revise and resubmit)


**Non-refereed Publications**

Hankins, K., 2000 “Finding a way through career geography” *Finding A Way: Learning Activities in Geography for Grades 7-11*, a publication of the National Council for Geographic Education, Title No. 5.

Hankins, K., 1999 (ed.) *you are here: the journal of creative geography*, Volume 2, Issue 2, Department of Geography, University of Arizona.

**Book Reviews**

KATHERINE B. HANKINS


**GRANT ACTIVITY**

“Variation in Health Outcomes within Disadvantaged Neighborhoods: Person Environment Fit”, National Institute of Health, submitted with Drs. Erin Ruel (PI), Deirdre Oakley (Co-PI) and Kymberle Sterling, May 2010 ($1,781,668), pending

“Faith-based Gentrification in Atlanta’s Inner City Neighborhoods”, Research Initiation Grant (RIG), Georgia State University, submitted January 2010 ($10,000), **awarded**

“Examining the Mechanisms that Explain Variation in Health Outcomes within Disadvantaged Neighborhoods” National Institute of Health, submitted with Drs. Erin Ruel (PI), Deirdre Oakley, and Kymberle Sterling, ($518,411), June 2009, not awarded


“Public Housing Transformation and Responsible Relocation: A Case Evaluation of Decatur, GA” MacArthur Foundation, submitted with Drs. Deirdre Oakley (PI) and Erin Ruel (Co-PI), ($350,000), April 2009, not awarded

“Addressing Poverty Through Place: Nonprofits and the Remaking of Impoverished Neighborhoods” National Science Foundation (NSF), submitted with Dr. Andy Walter (Co-PI), University of West Georgia ($109,026), January 2009, not awarded

“Addressing Poverty Through Place: Nonprofits and the Remaking of Impoverished Neighborhoods in Atlanta” Center for Metropolitan and Neighborhood Studies Research Grant, ($3,200), May 2009, **awarded**

“Framing Place and Poverty: Nonprofits and the Remaking of Impoverished Neighborhoods” Research Initiation Grant (RIG), Georgia State University, submitted January 2009 ($10,000), not awarded

“Building the Geosciences Learning Community: Increasing Retention, Progression, and Graduation” Retention, Progression, and Graduation (RPG) grant for the Department of Geosciences, Georgia State University, submitted March 2008 with Dr. Daniel Deocampo ($80,600) not awarded

“The Geography of State-Citizen Relations: Citizen Activism and Spatial Inequality” Research Initiation Grant (RIG), Georgia State University, submitted January 2008 ($10,000) not awarded

“Challenging Public and Private Spheres: Women, Voluntarism, and the Urban Neighborhood” Advancement of Women Faculty Scholarship Mentoring Grant, Georgia State University, submitted March 2007 with Dr. Emanuela Guano ($6,000) not awarded

Retention, Progression, and Graduation (RPG) grant for the Department of Geosciences, Georgia State University, submitted July 2006 with Dr. Pamela Burnley, ($92,200) (2006-2008) **awarded**
KATHERINE B. HANKINS

“Understanding Atlanta’s Changing Retail Landscape” Dan E. Sweat Atlanta Research Papers, Andrew Young School of Policy Studies, Georgia State University (2006) ($3000) awarded

MAJOR HONORS

The National Council for Geographic Education
*2008 Best College/University Article in Journal of Geography

Urban Geography Specialty Group of the Association of American Geographers
Best Dissertation Award, 2004 ($250)

Southeastern Division of the Association of American Geographers
Hart Student Honors Paper Award, 2003 ($1000)

The University of Georgia
Graduate School Dissertation Completion Award, 2003-2004 ($15,000)
Dean of Arts and Humanities Dissertation Enhancement Award, 2003 ($1000)
Department of Geography Student Travel Award, 2002 ($650)

The University of Arizona
Graduate Fee Waiver Scholarship, 2000 ($1100)
Graduate and Professional School Travel Scholarship, 2000 ($125)
Elected Graduate Student Representative for faculty meetings, 1999-2000

Dartmouth College
Cloise Appleton Crane Award for Excellence in Russian Studies, 1997
Third Honor Group, 1997
Dickey Center for International Studies fellowship, 1995
Rockefeller Center for Studies in Social Sciences fellowship, 1995
First Year Summer Research Grant recipient, 1994

INVITED LECTURES

“Urban politics” presented at the Department of Geosciences, Georgia State University, Political Geography class, March 30, 2009.

“Urban politics in Atlanta” presented at the Department of Geosciences, University of West Georgia, Metropolitan Atlanta geography class, March 10, 2009.

“How to publish in the social sciences” presented at the Urban Fellows brown bag series, the Center for Metropolitan Growth, Georgia State University School of Law, November 6, 2007.

“The role of charter schools in gentrifying neighborhoods” presented at the Urban Fellows brown bag series, the Center for Metropolitan Growth, Georgia State University School of Law, September 26, 2007.

“A “livable” city without the state? The case of Atlantic Station” presented at Georgia Southern University, April 5, 2007.
“The problems and promise of a new urbanist development: A case study of Atlantic Station” presented at Columbus State University, November 16, 2006.

**CONFERENCES/ PAPER PRESENTATIONS**

“Love thy neighbor”: Faith and the emergence of class identity among faith-motivated gentrifiers” to be presented at the Annual Meeting of the Southeastern Division of the Association of American Geographers to be held in Birmingham, AL, November 2010

“Do a deal for Jesus: faith, gentrification, and Atlanta’s urban political economy” to be co-presented at the Annual Meeting of the Southeastern Division of the Association of American Geographers to be held in Birmingham, AL, November 2010

“Reneighboring poor Atlanta: the political economy of faith-motivated gentrification” co-presented with Dr. Andy Walter in a special session “Regional Spotlight Session: Housing, Redevelopment, and the Changing Face of Atlanta” at the Annual Meeting of the American Sociological Association, Atlanta, August 2010

“Reneighboring poor Atlanta: the political economy of faith-motivated gentrification” co-presented with Dr. Andy Walter at the Annual Meeting of the Association of American Geographers, Washington, DC, April 2010

“The relocation of ‘radical relocation’: Atlanta and the mobility of an anti-poverty strategy” co-presented with Dr. Andy Walter at the Annual Meeting of the Association of American Geographers, Washington, DC, April 2010

“‘Bringing the lightness of the gospel to the darkness of the ghetto’: the subjects and spaces of faith-based gentrification” co-presented with Dr. Andy Walter at the Annual Meeting of the Southeastern Division of the Association of American Geographers, Knoxville, TN, November 2009


“Neglected neighborhoods and the multiscalar failure of the state” presented at the Annual Meeting of the Association of American Geographers, Las Vegas, NV, April 2009

“Philanthropy’s era(s) and the making of urban space” presented at the Annual Meeting of the Southeast Division of the Association of American Geographers, Greensboro, NC, November 2008

“Exploring the state in new urbanism” presented at the Annual Meeting of the Association of American Geographers, Boston, MA, April 2008
“Place-frames and the unevenness of the local state in transitioning neighborhoods” co-presented with Laura Wilson at the Political Geography Specialty Group miniconference, Worcester, MA April 2008

“Neighborhood activism in gentrifying neighborhoods: From making safe spaces to ‘gilding the lily’” co-presented with Laura Wilson at the Annual Meeting of the Southeastern Division of the Association of American Geographers, Charleston, SC, November 2007

“Creating a livable city without evidence of the state” co-presented with Emily Powers at the Annual Meeting of the Association of American Geographers, San Francisco, California, April 2007

“The role of the state in urban livability” presented at the Political Geography Specialty Group miniconference, Berkeley, California, April 2007

“Understanding Atlanta’s changing retail” presented at the Atlanta: Current Trends, Future Prospects conference, Georgia State University, Andrew Young School of Policy Studies, February 23, 2007.

“The politics of a park in gentrifying Atlanta” presented at the Annual Meeting of the Southeastern Division of the Association of American Geographers, Morgantown, West Virginia, November 2006


“Producing, consuming, and rescaling community through the creation of a charter school”, Annual Meeting of the Southeastern Division of the Association of American Geographers, West Palm Beach, Florida, November 2005

“The regime goes to (charter) school: The Atlanta-Journal Constitution and regime politics in education” with Dr. Deborah Martin, Annual Meeting of the Association of American Geographers, Denver, Colorado, April 2005

“The final frontier: charter schools as social institutions (or instruments?) of gentrification”, Annual Meeting of the Southeastern Division of the Association of American Geographers, Biloxi, Mississippi, November 2004


“Fracturing the neighborhood: Class, race, and a charter school”, Student Honors Competition (winner) at the Annual Meeting of the Southeastern Division of the Association of American Geographers, Charlotte, North Carolina, November 2003

“Spatializing American citizenship: Religion and education find their places”, Annual Meeting of the Southeastern Division of the Association of American Geographers, Richmond, Virginia, November 2002

“Exploring questions of value and labor in retailing”, Annual Meeting of the Association of American Geographers, Los Angeles, California, March 2002


Sessions Organized
Co-organizer with Dr. Andy Walter at the 64th Annual Meeting of the Southeastern Division of the Association of American Geographers, “Does the Marriage Work? Geography in Combined Departments” panel session, Knoxville, TN, November 2009
Co-organizer with Dr. Jennifer Speights-Binet at the 103rd Annual Meeting of the Association of American Geographers, Boston, MA “Reconsidering New Urbanism” Sessions I, II, April 2008

PROFESSIONAL EMPLOYMENT
Assistant Professor, Department of Geosciences, Georgia State University, 2006-present
Adjunct Assistant Professor, Department of Geography, University of Georgia, 2004-2006
Independent Study/Distance Learning Associate, Center for Continuing Education, University of Georgia, 2005-present
Instructor, Department of Geography, University of Georgia, 2003 spring
Graduate Teaching Assistant, Department of Geography, University of Georgia, 2001-2002
Instructor: Department of Anthropology and Geography, Georgia State University, 2002 summer
Program Associate, Udall Center for Studies in Public Policy, University of Arizona, 2000-2001
Instructor: Department of Geography and Regional Development, University of Arizona, 2001 summer
Graduate Assistant in Teaching, Department of Geography and Regional Development, University of Arizona, 1999-2000
Instructor: Department of Geography and Regional Development, University of Arizona, 2000 summer
KATHERINE B. HANKINS

Graduate Assistant in Research, Dr. Beth Mitchneck, University of Arizona, 1998-1999
Administrative Assistant, Corestaff Services, Atlanta, GA, 1997-1998
Writing Assistant, The Composition Center at Dartmouth College, 1997 spring
Research Assistant, Center for Gender Studies, Center for Socioeconomic Problems of Population, Academy of Sciences, Moscow, Russia, 1995 fall
Research Assistant, Dr. George Demko, Dartmouth College, 1994-1996

PROFESSIONAL DEVELOPMENT
Participant at the Center for Teaching and Learning Faculty Series, 2007-present
Participant at the Geography Faculty Development Alliance, July 18-25, 2005, Boulder, Colorado

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS
2010-present: Elected to the Board of the Urban Geography Specialty Group, Association of American Geographers
2009: Chair, Audit Committee, Southeastern Division of the Association of American Geographers
2007-2009: Elected to the Board of the Political Geography Specialty Group, Association of American Geographers
2008: Chair, Tellers Committee, Southeastern Division of the Association of American Geographers
2001 – present: Southeastern Division of the Association of American Geographers
1998 – present: Association of American Geographers
1997 – 1999: Pacific Coast Division of the Association of American Geographers

UNIVERSITY AFFILIATIONS
Partnership for Urban Health Research faculty affiliate, Georgia State University
Urban Fellows faculty affiliate, Center for the Comparative Study of Metropolitan Growth, Georgia State University School of Law
Metropolitan and Urban Studies faculty member

SERVICE
Manuscripts reviewed
Journal of Social and Cultural Geography, January 2010
Urban Studies, August 2009
Environment and Planning D: Society and Space, June 2009
Journal of Rural Studies, May 2008
GeoJournal, March 2008
Tijdschrift: Journal of Economic and Social Geography, June 2007
The Southeastern Geographer, April 2005

Publishing
Reviewer for Wiley Publishing, Visualizing Human Geography, June 2010
Conferences
Chair and Commentator, “The Politics of Social Space” Annual Meeting of the Oral History Association, Atlanta, October 2010
Chair, “Urban Spaces and Urban Social Movements”, Annual Meeting of the Southeastern Division of the Association of American Geographers, November 2008
Discussant, “Revisiting the Performance of Magnet Schools to Recentralize American Middle Class Families in the midst of High Gas Prices: Can Magnet Programs Offer High-Performing Neighborhood Schools in Gentrifying Neighborhoods?”, Annual Meeting of the Southeastern Division of the Association of American Geographers, November 2008
Co-Captain, World Geography Bowl team for the state of Georgia, 2007-present
Chair, Urban Geography paper session, Annual Meeting of the Southeastern Division of the Association of American Geographers, November 2007
Discussant, “Education and Information Technology,” Annual Meeting of the Southeastern Division of the Association of American Geographers, November 2005
Discussant, “Geographies of Education,” Annual Meeting of the Association of American Geographers, April 2005
Discussant, “Economic Geographies and Geographies of Race,” Annual Meeting of the Southeastern Division of the Association of American Geographers, November 2004
Student judge, Qualitative Research Specialty Group paper competition, 2003

Professional
AP Human Geography Reader, ETS, Cincinnati, Ohio, June 2010
Content Advisory Committee, Framework Review for Georgia Assessments for the Certification of Educators, October 2005

UNIVERSITY SERVICE
CTW (Critical Thinking through Writing) Ambassador for Department of Geosciences, October 2007 - present

DEPARTMENTAL SERVICE
Editor, Department of Geosciences Newsletter, July 2007, July 2008, July 2009, August 2010
Faculty Advisor, Gamma Theta Upsilon (2009-present)
Faculty Co-advisor, Geosciences Club (2009-present)
Student Recruitment and Alumni Relations Committee, Chair, 2006-present
Attended Panther Preview, October 2007, 2008
Attended College of Arts and Sciences Majors Fair, January 2007
Attended Major Matters, April 2007, October 2008, March 2010
KATHERINE B. HANKINS

Published Department of Geosciences brochure, 2007
Served on Human Geography Search Committee, with Drs. Crampton and Stewart, 2007-2008
Served on Chair Search Committee, with Drs. Burnley and Allensworth, February, 2007
Participated in CAS FIMS test, April 2007
Geosciences representative at the WAC/QEP faculty workshop, Georgia State University, December 7-8, 2006

STUDENTS ADVISED
Matthew Waller, M.A., 2009, “The Importance of the Regional Concept: The Case for an Undergraduate Regional Geography Course of Sub-Saharan Africa” (non-thesis practicum)
Robert Cochran, M.A., 2009, “Race, Place, and Identity: Examining Place Identity in the Racialized Landscape of Buckhead, Atlanta”
Laura Wilson, M.A., 2009, “Place-based Voluntarism in the Neoliberal State: A Case Study of Gentrifying Neighborhoods in Atlanta, Georgia” (non-thesis practicum)
Jessica Hays, Master’s student, 2007-2010 (withdrawn)
Koya Brown, Master’s student, 2007-present
David Holmes, Master’s student, 2008-present
Michael Husebo, Master’s student, 2010-present
Cheryl Case, Master’s student in Anthropology (co-advisor), 2010-present

Participation on Committees
Barbara Combs, PhD committee, 2010, “The Ties that Bind: The Role of Place in Racial Identity Formation, Social Cohesion, Accord, and Discord in Two Historic, Black Gentrifying Atlanta Neighborhoods” Department of Sociology
Tara Prizito, M.A., 2009, “The Spaces of Encounter of Female, Middle-Eastern and Muslim Immigrants in Atlanta, Georgia” Geography
Elizabeth Henry, PhD committee, Department of History, 2008-present
Amy Roberts, PhD committee, Department of Educational Policy Studies, 2009-present
Matthew Chapman, MA committee, Geography, 2009-present
Paula Edwards, MA committee, Geography
Jennifer Berthiaume, MA committee, Geography
Yu Chen, M.A., 2007, Geography

Honors Thesis
Leslie Bienenfeld, B.A., 2009, “Political Ecology of Ecovillages in Metropolitan Atlanta”

Student Activities Advised
Robert Cochran, “Racialized practices and the (re)making of a place of whiteness in Atlanta, Georgia” presented at the University of Illinois, Urbana-Champaign, School of Earth, Society, and Environment, Research Review, 2010, March 7, 2010.


Dan Miller, “Dereliction and Abandonment in the City of Atlanta, Georgia” presentation at the Annual Meeting of the Southeastern Division of the Association of American Geographers, Charleston, SC, November 18-20, 2007.


Dan Miller, “Environmental Inequities in Metropolitan Atlanta” presentation at the Georgia State University Undergraduate Research Conference, April 11, 2007.

Student Awards
Robert Cochran, Urban Geography Specialty Group Master’s fellowship, 2008
Dan Miller, Georgia URISA undergraduate paper award, 2008
Dan Miller, winner of the Urban Geography Specialty Group Glenda Laws undergraduate paper competition, 2008

Courses Taught
Metropolitan Atlanta (Spring 2009)
Senior Seminar (Spring 2010, Spring 2009, Spring 2008)
Katherine B. Hankins

Introduction to Urban Geography (Fall 2010, Fall 2009, Fall 2008, Fall 2007, Fall 2006)
Introduction to Political Geography (Spring 2008, Spring 2007)
Urban Economic Geography Seminar (Fall 2010, Fall 2007)
Geosciences Learning Community (Summer 2008, Spring 2008, Spring 2007, Fall 2007)
Geography in the Field (Urban field trip course) (Spring 2008, Spring 2007)

New course developed
Qualitative Methods in Geography, with Dr. Parama Roy
CURRICULUM VITAE
Lawrence Morara Kiage, PhD

Department of Geosciences 1250 Taylor Oaks Drive
Georgia State University Atlanta, GA 30076
P.O. Box 4105 Tel. 1-678-240-1000
Atlanta, GA 30302 e-mail: lkiage@gsu.edu
Tel. 1-404-413-5777

PROFESSIONAL PREPARATION
PhD. (Geography), 2007. Louisiana State University.
Dissertation title: “Vegetational Change and Land Degradation in the Lake
Baringo Area, Kenya, East Africa: Evidence from the Paleorecord and
Remote Sensing”.
Major Advisor: Dr. Kam-biu Liu.

Thesis title: The role of women-groups in the revegetation of degraded
sites in West Pokot District, Kenya.
Supervisor: Dr. Z. A. Ogutu

B. ED (Geography Major) with Honors 1995. Kenyatta University, Kenya.

APPOINTMENTS
Aug. 2007-- Assistant Professor, Department of Geosciences, Georgia State University
(http://www.cas.gsu.edu/geosciences/3109.html).

2004-2007 Research/Teaching Assistant, Earth Scan Laboratory, Coastal Studies
Institute Louisiana State University (http://www.esl.lsu.edu).
Courses taught (Assistant): OCS 7170-Satellite Oceanography (graduate
course) - Teaching Assistant in the course for three consecutive years (for
details please visit

2002-2004 Research Assistant, Dr. Oscar Huh (LSU Earth Scan Laboratory). Remote
sensing of the major river deltas of the world project.

1999-2001 Assistant Lecturer, Department of Geography, Maseno University, Kenya.
Courses Taught: AGE 201 Physical Geography; AGE 203, Geography of
Africa; AGE 302 Climatology; AGE 400 Quantitative Techniques in
Geography; AGE 401 Remote Sensing and Air Photo Interpretation; AGE
413 Biogeography; AGE 312 Geomorphology; AGE 421-Contemporary
Biogeography.

REFEREED PUBLICATIONS:


2010. **In Preparation.** Kiage, L. M., and Liu, K-b. “Stratigraphic evidence of land degradation in the Lake Baringo area, Kenya, East Africa, over the past 300 years” (will be submitted to *Geology*).

**SPECIAL MENTION:**


**PUBLISHED ABSTRACTS AND POSTERS**


COMPETITIVE GRANTS AND AWARDS

2010. Funded. (co-PI) RAPID: Enhancing Biodegradation of Deepwater Horizon Contaminant Hydrocarbons in Louisiana Salt Marsh Using High Layer Charge Montmorillonites. $61,537.00 (Proposal No. 1050246).


2009. Funded. Faculty Development travel Grant to attend and present a paper at a conference. $800 Grant awarded by the GSU OUF.

2008. **Funded.** Faculty Development travel Grant to attend and present a paper at a conference. $800 Grant awarded by the GSU OUF.


PRESENTATIONS AT CONFERENCES/WORKSHOPS


2008: Geography Faculty Development Alliance Workshop at the University of Colorado at Boulder, Colorado, June 15-21

2008: Living In the KnowlEdge Society (LIKES) Community Building Project. Workshop funded by the NSF, North Carolina A&T State University, Greensboro, NC, April 18-19, 2008.


**PROFESSIONAL SERVICE AND RECOGNITION**

2010 Reviewed two manuscripts for the African Geographic Review.

2009 Reviewed two proposals –one on remote sensing and the other on climate change policies, for The Research Grants Council (RGC) of Hong Kong ([https://cerg1.ugc.edu.hk](https://cerg1.ugc.edu.hk)).

2009 Reviewed two NSF


2008 Reviewed three manuscripts on land use/cover change and environmental changes in East Africa for the Geographical review (June 2008, through invitation by editor-in-chief).


2007  Organizing a special session on “the paleobiogeography of Africa and the tropics” sponsored by the Biogeography Specialty Group for the Annual Meeting of the Association of American Geographers, 17-21 April 2007, San Francisco, California.

2004-2006.  Served as Judge for the National Geographic Bee, Louisiana State Level Competition, Baton Louisiana.


DEPARTMENTAL SERVICE:

Major Matters 2008 and 2009 committee member
Member of Undergraduate Program Committee
Member of the Appeals Committee
Member of Student Recruiting Committee

STUDENTS ADVISED

John Anderson, Master’s Student, 2007-present
Brian Vann, Master’s Student, 2009-present
Imani Morris, Master’s Student, 2009-present
Susan Morell, Master’s Student, 2009-present
Catherine McCurdy GIS certificate – graduated 2009.

Participation on Committees
Cartwright, Richard, Master’s student – graduated 2009
Polinsky, Robyn R., Master’s student – graduated 2009

CAUSES TAUGHT

Geography 2006: Introduction to Mapping and GIS
Geography 1112: Introduction to Weather and Climate
Geog 4648: Biogeography
Geog 4644: Environmental Conservation
Geog/Geol 4530: Introduction to Remote Sensing
Geog: 1113: Introduction to Landforms
Geog 6999: Directed Readings
Geol 8097: Directed study in Geology

MAJOR AREAS OF RESEARCH/TEACHING INTERESTS:

Topical: Biogeography, Remote Sensing, Quaternary Paleoecology, Palynology, Paleoclimatology, Global Environmental Change, Desertification, Natural Hazards, Paleotempestology, Geographic Information Systems.
Regional: Africa (especially East Africa), the American South, the Gulf and Atlantic Seaboards.

FIELD RESEARCH EXPERIENCE

Summer 2008. Lake coring fieldwork, Hilton Head Island, South Carolina.
Summer 2008. Lake coring fieldwork, Jekyll Island, Cumberland Island, St. Simon’s Island, Georgia.
Fall 2002--. Research Assistant (remote sensing and GIS) at the LSU Earth Scan Lab
Summer 2005. Lake coring fieldwork, Week’s Bay, Alabama
Summer 2005. Lake coring fieldwork, Gulf State Park, Alabama
Winter 2004. Lake coring fieldwork, Pearl River Marsh, Mississippi
Summer 2004. Lake coring fieldwork, Pascagoula Marsh, Mississippi.
Summer 2003. Lake coring fieldwork, Cape Cod, Massachusetts
Summer 2003. Lake coring fieldwork, Gulf State Park, Alabama

PROFESSIONAL MEMBERSHIPS

Association of American Geographers (Since 2002)
Geological Society of America (Since 2004)
American Geophysical Union (Since 2005)
Eirik J. Krogstad

U.S. citizen

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1693 Dyson Drive N.E. Department of Geosciences
Atlanta GA 30307 USA Georgia State University
Atlanta, GA 30303 USA

Phone: (404) 373-9728 Phone: (404) 413-5764
lab: (404) 413-5783
email: ejkrogstad@hotmail.com email: ejkrogstad@gsu.edu

Education:


B.S. - Geology, Western Washington University, Bellingham, WA, 1981.

Positions Held (post Ph.D.):

August 2004 to present: Associate Professor, Department of Geosciences, Georgia State University (Atlanta, GA).

June 1997 to August 2004: Senior Research Geologist, Danish Lithosphere Centre (Copenhagen, Denmark).

January 1991 to May 1997: Assistant Professor, Department of Geology, University of Maryland at College Park.

August 1988 to January 1991: Laboratory Manager, Isotope Geology Laboratory, Department of Earth and Space Sciences (now Geosciences), State University of New York at Stony Brook.

Professional Society Membership:

The Geochemical Society
American Geophysical Union
American Association for the Advancement of Science

Current Federal Grants and Contracts

As PI/co-PI


As collaborator:
National Institutes of Health -- Design of Protein-Based MRI Contrast Agents with High Relaxivity, 1R01EB007268-01, Dr. Jenny J. Yang (PI), Dr. Zhi-ren Liu (co-PI), Drs. Xiaoping Hu, Eirik Krogstad and Delon Barfuss (collaborators), 07/01/07- 6/30/12, $1,250,000 direct costs.

Past National Science Foundation funding:

EAR-9526784. Physical and Chemical Processes in Silicic Magma Chambers Invaded by Basalt, $98,000. E. J. Krogstad, PI.

EAR-9317136, A Geochemical Technician for the Department of Geology, University of Maryland, College Park, $110,000. E. J. Krogstad, PI. R. J. Walker, co-PI

EAR-9105222, Acquisition of a Pulsed Laser System for Resonance Ionization Mass Spectrometry and a Thermal Ionization Mass Spectrometer. $225,000 (plus $225,000 in matching funds from University of Maryland). R. J. Walker, PI, E. J. Krogstad, co-PI


GER-9354925 (Education Directorate). "NSF Traineeship Program in Groundwater Chemistry and Hydrology," $562,500, participating faculty member, with George Helz (PI).

Other Funded Grants and Contracts

Centers for Disease Control and Prevention: subcontractor in grant to P. Ashley, Pb isotopic analyses of urban house dust. $5,000.


Kennedy-Krieger Institute of Johns Hopkins University (U.S. E.P.A. funding), contract, "Pb isotopic analysis of environmental samples", $16,000.


Danish National Research Foundation (Dansk Grundforskningfond) The Danish Lithosphere Centre – A Center of Excellence, January 1999 to January 2004 (extended through December 2004), Hans Christian Larsen (PI), Eirik Krogstad and six others (co-PIs), DKK 120,000,000 (ca. $24 million).

Danish Oil and Natural Gas Corporation, Upgrade of Single Collector Mass Spectrometer, 1999, DKK 100,000 (ca. $15,000).

Georgia State University, Research Initiation Grant, “The rise of oxygen in Earth’s early atmosphere: the record in shales,” June 2005, $9,956.

Refereed Papers (published or in press):


* - indicates a paper by a graduate student for which I was principal or co-advisor, or by a postdoctoral researcher working under my supervision.

Papers submitted or in preparation


Non-refereed Guidebooks and Reports:


Abstracts:


15. Krogstad, Eirik J., and Bizzarro, Martin, 2004, Mg isotopic composition of Middle Archean shelf sediments from Zimbabwe, 13th Goldschmidt Conference, Copenhagen, Denmark.


25. Frei-Robert; Rosing-Minik-T; Krogstad-Eirik-J; Storey-Michael; Ulfbeck-David-G*; Albarede-Francis, 1999, The least radiogenic terrestrial Pb: its implications for the early Archean crustal evolution recorded in the Isua supracrustal belt (West Greenland). Eos, Transactions, American Geophysical Union. 80; 46, Pages 1190-1191.

26. Krogstad-Eirik-J; Rekkaemper-Mark; Mezger-Klaus, 1999, Application of MC-ICP-MS to studies Pb in the sources of early continental crust in western Greenland. Eos, Transactions, American Geophysical Union. 80; 46, Page 1190.


38. Mezger-K; Krogstad-E-J, 1995, Interpretation of U-Pb zircon ages from metamorphic rocks. Eos, Transactions, American Geophysical Union. 76; 46, Page 703.


55. Krogestad-E-J, 1994, The importance of local crustal Pb sources in petrogenetic models; an example from Chile. Eos, Transactions, American Geophysical Union. 75; 44, Page 701.

56. Tomascak-P-B*; Krogestad-E-J; Walker-R-J, 1994, Crustal evolution in the Northern Appalachians; interpretations from Pb isotopes in evolved granitic rocks in southwestern Maine. Eos, Transactions, American Geophysical Union. 75; 44., Page 701.


67. Krogstad-E-J; Hanson-G-N; Rajamani-V, 1992, Archean sutures marked by schist belts, E. Dharwar Craton, S. India. Eos, Transactions, American Geophysical Union. 73; 14, Page 332.


69. Hemming-Sidney; McLennan-S-M; Hanson-G-N; Krogstad-E-J; Mezger-Klaus, 1990, Pb isotope systematics in quartz. Eos, Transactions, American Geophysical Union. 71; 17, Pages 654-655.

70. Krogstad-Eirik-J; Hanson-Gilbert-N; Mezger-Klaus, 1990, Possible Avalon Pb isotopic crustal signature in S.W. Connecticut. Eos, Transactions, American Geophysical Union. 71; 17, Page 655.


73. Krogstad-Eirik-J; Hanson-Gilbert-N; Rajamani-V, 1988, U-Pb ages and Sr, Pb and Nd isotope data for gneisses near the Kolar schist belt; evidence for the juxtaposition of discrete Archean terranes. In: Workshop on the deep continental crust of South India. (Ashwal-Lewis-D, editor); LPI Technical Report. 88-06, Pages 84-86.


75. Krogstad-E-J; Hanson-G-N; Rajamani-V, 1987, Distinction between enriched mantle sources and crustal contamination; an example from the Archean Dharwar Craton of South India. Abstracts with Programs - Geophysical Society of America. 19; 7, Page 734.

76. Krogstad-E-J; Hanson-G-N; Rajamani-V; Balakrishnan-S, 1986, Nd, Sr, and Pb isotope evidence for separate, juxtaposed late Archean terranes, South India. Eos, Transactions, American Geophysical Union. 67; 44, Page 1265.

77. Krogstad-E-J; Hanson-G-N; Rajamani-V, 1986, U-Pb zircon and sphene ages of discrete, juxtaposed late Archean terranes, S. India. Eos, Transactions, American Geophysical Union. 67; 16, Page 400.


* - indicates a paper by an undergraduate student supervised by me, a graduate student for which I was principal or co-advisor, or by a postdoctoral researcher working with me.

**Invited External Talks:**

Geological Society of India, Bangalore, Nov. 1984

LPI Workshop on Tectonic Evolution of Greenstone Belts, Houston, TX, Jan. 1986

NASA/LPI Workshop on Deep Continental Crust of South India, Bangalore, Jan. 1988

University of Maryland at College Park, Geology Dept., May 1990

University of Maryland at College Park, Chemistry Dept., October 1993

Geological Society of America Annual Meeting, Boston, 1993

Geological Society of America, (Southeastern Section), Blacksburg VA, March 1994

Syracuse University, Geological Sciences Dept., February, 1995

American Geophysical Union, Fall Meeting 1995
Geological Society of Washington, Jan. 1996
Danish Lithosphere Centre, Copenhagen, Nov. 1996
Danish Mass Spectrometry Society, Annual Meeting, Odense, Denmark, Oct. 1999
American Geophysical Union, Fall Meeting 2001
Georgia State University, Geology Dept., February 2004
Central Washington University, Geology Dept., April 2004
Georgia Institute of Technology, Earth and Atmospheric Sciences, May 2006.

**Theses supervised and co-supervised**

**B.S. thesis students, thesis titles, and outcomes**

Colyer, Ronald G., 1993, Heavy mineral provenance correlation of the Antietam and Harpers Formations, Washington Co., MD. (went on to M.S. degree, Univ. of Maryland)

Davis, Adam, 1993, Magma sources for the Port Deposit Gneiss. (went to USGS - Reston)

Bertolo, Steven E., 1994, Three phases of the Ellicott City Granodiorite; a study of genetic affinity and trace element variations. (went on to M.S. degree, Univ. of Akron)

Garzione, Carmela, 1994, Rb-Sr ages of pegmatites, North Carolina. Co-supervised with R. Walker. (Recognized EJK as Most Influential Professor when awarded Outstanding Graduate 1994, College of Computer, Mathematical and Physical Sciences, Univ. of Maryland at College Park. Went on to M.S. and Ph.D. degrees, Univ. of Arizona, now Associate Professor, Univ. of Rochester, NY, 2007 Donath Medalist, Geological Society of America)

Hodkinson, Damian, 1994, Nd isotopic evidence for the origin and evolution of the Pajonales Plutonic Complex of Northern Chile. (went on to M.S. degree, Univ. of Arizona)

Leiker, Sarah, 1994, Empirical test for europium (Eu) valence speciation in a pegmatite melt. (went on to M.S. degree, Univ. of Maryland)

Hightower, Jeffrey R., 1995, Characterization of the protoliths of the Wissahickon Schist, Loch Raven Formation, Ocella Formation, and Morgan Run Formation from Rare Earth Element Patterns. (next position unknown)

Harper, Keith, 1995, Nd and REE evidence for sources of Siluro-Devonian shales, Rumford area, Maine. (next position unknown)


**M.S. students, thesis titles, and outcomes**

Krishnan, Vijayalakshmi, 1990, Late Archean intrusions from Kolar south India: a petrogenetic study. SUNY at Stony Brook. Co-supervised by G.N. Hanson. (now in environmental industry)
Jarriel, Jeff, 1994, Use of Sr isotopic, hydrophysical and geochemical data to delineate catchment flow paths during base-flow and storm events. University of Maryland at College Park. Co-supervised by K. Prestegaard. (now in environmental industry)


Libeau, Sarah, 1998, Tracing lead pollution in the Chesapeake Bay: evidence from sediments and oysters. University of Maryland at College Park. Completion co-supervised by R. J. Walker. (now in environmental industry)

Nielsen, Sune G., 2002, Petrogenesis of an early Archean norite dike, Isua area, SW Greenland. DLC and Copenhagen University. Co-supervised by J. Baker. (Ph.D. recipient, ETH Zürich with Alex Halliday and Mark Rehkämper)

Petersen, Lisa S., 2003, A study of rare earth element mobility in Archaean gray gneisses, southern West Greenland: implications for Earth's early crust-mantle evolution. DLC and Copenhagen University. (self-employed)

Hardison, Donald, in progress, Differentiation of ocean circulation based on sediment production on the SW African Margin. (tentative title), Georgia State University, now in environmental industry.

**Ph.D. students, dissertation titles, and outcomes**

Tomascak, Paul, 1995, The Petrogenesis of Granitic Rocks, southwestern Maine. University of Maryland at College Park. Co-supervisor with R. J. Walker. (next: Carnegie Fellow- DTM, postdoc at LDEO, then lab manager, Univ. of Maryland, now Associate Professor, State University of New York at Oswego)

Willigers, Bart J. A., 1999, \(^{40}\text{Ar}/^{39}\text{Ar}\) and U-Pb geochronology of the Nagssugtoqidian orogen: an investigation of isotope systematics and time-temperature paths. DLC and Copenhagen University. (next: von Humboldt post-doctoral fellow, Univ. of Münster, now staff member, H. Lundbeck a/s, Copenhagen, Denmark)

Barfod, Gry Hoffmann, 2003, A new Lu-Hf separation technique for phosphates and its application to apatite geochronology. DLC, Copenhagen University and ENS-Lyon, France. Co-supervisor with F. Albarède, ENS-Lyon. (now research associate, Univ. of California - Davis)

Pollack, Gerald, 2008, Timing and characterization of the change in the redox state of uranium in Precambrian surface environments: a proxy for the oxidation state of the atmosphere. Georgia State University, now tenure-track Assistant Professor, Georgia Perimeter College, Atlanta GA.

*plus* numerous M.S. and Ph.D. committee memberships
**Honors and Awards:**


Western Washington University, Graduate School Scholarship 1982.

State University of New York at Stony Brook (Earth and Space Sciences Dept.) *Burned Toast Award* for outstanding new graduate student, 1983.

State University of New York at Stony Brook (Earth and Space Sciences Dept.) *Outstanding Teaching Assistant Award*, 1984.

State University of New York at Stony Brook, Graduate School Dissertation Scholarship, 1986.


University of Maryland - College Park. College of Computer, Mathematical and Physical Science, Recognized as 'most influential professor' by the college's Outstanding Graduating Senior for: 1994, by Carmala Garzione (now Assistant Professor, University of Rochester, NY). 1995, by Matthew Costinett.

**Service:**


University of Maryland, Honor Council, Hearing Board Member, 1991-1995.

University of Maryland, Geology Dept., coordinator, Geology Department colloquium series, 1993-94, 1994-95.

University of Maryland, Geology Dept., Department duties: computing facilities (wrote proposals for, designed and oversaw the department's two student computing labs.), designed, set up and supervised the rock processing and mineral separation labs, co-supervised mass spectrometry labs with R. J. Walker.

University of Maryland, various Department- and College-level search committee memberships

Reviewer for numerous proposals to the National Science Foundation (Tectonics, Petrology and Geochemistry, Geology and Paleontology, Instrumentation and Facilities programs)

Organizing Committee member, 3rd Hutton Symposium on the Origin of Granites. 1995. Field Trip co-leader: Granitoids of the Maryland Piedmont

Maryland State Science Fair, 1994, Organized and conducted segment: "Pb in your drinking water." The public received free tap water tests for Pb by isotope dilution mass spectrometry.


Delegate, Danish Technical Institute, Conference on "Assessment of the Performance of Universities, UK, Denmark and Holland", 24 Jan. 2003, Carlsberg Academy

Presentation on the Earth and its rocks and minerals, Fernbank Elementary School, DeKalb Public Schools, GA, October 2004

Presentation on rocks and minerals, Kittredge Magnet School, DeKalb Public Schools, GA, October 2007, 10 classes.


Georgia State University, campus-wide, Laboratory Safety Committee, 2009 -.

Georgia State University, Geology Department, Graduate Committee, 2004 to 2008.

Georgia State University, Geology/Geosciences Department, Safety Committee, 2004 to 2008.

Georgia State University, Geosciences Department, Search Committee Chairman (four searches), 2005-2006.

Georgia State University, Geosciences Department, Executive Committee 2007-2008.

National Science Foundation: Review Panel Member, Geobiology and Low Temperature Geochemistry, 2008-2009.

**Significant Field Work:**

1981, 1982 - Montana, Elkhorn Mountains (Cretaceous volcanic and plutonic rocks)

1984, 1986, 1987 - South India, eastern Dharwar Craton (late Archean suture zone)
1988, 1989 - Connecticut, Paleozoic, metamorphic and intrusive rocks

1993 - South Dakota, southern Black Hills (Proterozoic orogen and intrusive rocks)

1994 - Northwest Territories, Northern Canada (North Slave Province, late Archean accretionary margin)

1996 - Bays of Maine intrusive complex

1997- West Greenland, Nagssugtoqidian Orogen (early Proterozoic orogen)

1998, 1999 - Southwest Greenland, Isua area (early Archean continental crust)


Field Course Teaching Assistant, Western Washington University field course, 1981 and 1982, Southwestern Montana.

Suggested References:

Dr. W. Crawford Elliott, Chair
Department of Geosciences
Georgia State University
Atlanta GA 30303
404-413-5756
geowce@langate.gsu.edu

Dr. T. E. La Tour
Department of Geosciences
Georgia State University
Atlanta GA 30303
404-413-5767
geotel@langate.gsu.edu

Dr. J. Marion Wampler
Department of Geosciences
Georgia State University
Atlanta GA 30303
404-413-5750 (department phone)
kayargon@earthlink.net

Additional references available on request
Curriculum Vitae

Seth E. Rose
Revised: September, 2010

(Note on Font: Franklin Gothic font is used for this CV to honor Dr. Benjamin Franklin and the spirit of independent scientific investigation which the printer and patriot from Philadelphia embodied)

Associate Professor: Department of Geosciences; Georgia State University; Atlanta, GA; 30303; Phone: 404-413-5757; FAX: 404-413-5768; E-Mail: geoser@langate.gsu.edu

Professional Registration: Professional Geologist: Georgia State Board of Registration for Professional Geologists [National Association of State Boards of Geology (ASBOG)]; 1999-Present; Registration No. 1541

EDUCATION:

- Ph.D. in Geosciences (Hydrology minor), 1987, University of Arizona: Dissertation Advisor: Dr. Austin Long

- M.S. in Geology, 1981, University of Florida: Thesis Advisor: Dr. Daniel Spangler

- B.S. in Secondary Education, 1974, Florida International University

- B.S. in Social Welfare, 1973, Florida State University

- High School, 1969 (diploma), Miami Beach High School

ACADEMIC APPOINTMENTS:

- Associate Professor with Tenure; 1993-Present, Department of Geology, Georgia State University; Atlanta, Georgia.

- Department Chair; 2001-2002, Department of Geology, Georgia State University, Atlanta, Georgia

- Assistant Professor; 1987-1992; Department of Geology, Georgia State University; Atlanta, Georgia.

- Lecturer; 1986-1987; Department of Geology and Physics, California State University, Bakersfield; Bakersfield, California.

- Teaching Associate and Interim Instructor; 1983-1986; Department of Geoscience, University of Arizona; Tucson, Arizona.

- Teaching Assistant; 1979-1981, Department of Geology, University of Florida; Gainesville, Florida.
NON-ACADEMIC APPOINTMENTS:


- Hydrogeologist; 1981-1982; Dames and Moore; Boca Raton, Fla.

- Mathematics Instructor; 1974-1977; Miami-Dade County Public Schools, Miami, Florida.

PROFESSIONAL ASSOCIATIONS:

- Geochemical Society Member
- American Geophysical Union Member
-- Georgia Coastal Research Council Affiliate

GENERAL RESEARCH INTERESTS:

- Aqueous Geochemistry; Hydrogeology; Isotope Hydrology; Urban Hydrology; Metal-Sediment-Water Interactions

HONORS:

Invited Editorial Board Participation:
Editorial Board, Hydrological Processes; 2010-2012. Selected by the editor of this journal.

Invited Technical Advisory Board Participation:
Georgia Geologic Survey; Problems regarding of influx of tritium within the Savannah River Basin; 1991-1997. Selected by State Geologist of Georgia, Ga EPD, DNR.

Hydrogeologist for the Technical Advisory Group advising the Charlton County Collaborative on hydrological issues related to proposed titanium dioxide mining near the Okefenokee Swamp. The Technical Advisory Group was selected by TAI Environmental Services Inc. 1998-1999.

Professional Geologists Registration Examination, Advisory Board to the Secretary State of Georgia, 2002-2003. Selected by the Secretary of State, Georgia.

Chattahoochee Riverkeepers/City of Atlanta Technical Oversight Committee (in cooperation with the United States Geologic Survey); 2003-Present; Selected by the USGS, Atlanta.

Georgia Environmental Protection Division; State Map Revision Committee; 2007-Present. Selected by the State Geologist, Georgia EPD.
Georgia Department of Natural Resources, Environmental Protection Division; Scientific and Engineering Advisement Panel. Duties here involve advising the GA EPD on issues related to the state water plan. 2009-2010. Selected by the Division Head of Georgia EPD.

**PROJECT EXPERIENCE (1980-Present)**


- Numerous investigations involving the field emplacement of monitoring wells in shallow aquifers, pumping tests and interpretation, and the acquisition of water quality data in south Florida and upstate New York; 1981-1983

- Finite difference modeling of lake/ground-water interaction in southern Florida, 1982
- Field supervision of the installation of a municipal well-field (logging cuttings, supervising well installation, well development, and well testing), Boca Raton, Florida; 1982-1983

- Field and laboratory study of the natural water chemistry of the Tucson basin aquifer with particular reference to redox chemistry; numerous analytical techniques including Winkler titrations, AAS, spectrophotometry, and WATEQF-utilization; 1985-1986.

- Field and laboratory supervision of a salt-water intrusion into the Miocene aquifer; Cumberland Island, Georgia; 1991-1993.

- Utilization and modeling of tritium, stable isotopes, and dissolved solute concentrations to trace sources of water and analyze residence times in Piedmont Province watersheds and aquifers; 1991-present.


- Hydrochemistry of urban streams in the Piedmont Province of Georgia with emphasis upon the relationships between hydrology and major ion geochemistry; 1996-present.

- Laboratory investigation of anion adsorption by Piedmont soils using ion chromatography, 1996.

- Field investigation of technogenic tritium contamination (Savannah River Site) within the Tertiary aquifers of Burke County, Georgia, 1993-1996.
-Laboratory and field investigation of the fate of heavy metals and sulfate in an abandoned coal strip mine district; eastern Kentucky coal district; 1997-1999.

-Laboratory investigation of the effects of lime and limestone neutralizers upon iron oxyhydroxide precipitates from acid mine drainage; 1998-1999.

-Development of a statistical method to evaluate the effects of antecedent rainfall upon subsequent runoff, applications to the Coastal Plain and Piedmont Provinces; 1997-1999.


-Hydrogeological analysis of a Piedmont wetland, Dekalb Co., Georgia (South Peachtree Creek Nature Preserve); 2000.

-Field and laboratory investigation of metal-sediment-water interactions in urbanized Piedmont watersheds, 2002.

-Hydrochemistry of urban streams in the Piedmont Province of Georgia with emphasis upon water-sediment-heavy metal interactions; 1998-2004.

-Analysis of aqueous carbonate systematics within the Upper Floridan Aquifer below the Dougherty Plain of southwestern Georgia, 2002-2003.

-Investigation of strontium isotope ratios to assess how they can be used as a hydrological tool within Georgia Piedmont watersheds, 2003-2006.


-Investigation of strontium and isotope ratios and major ion chemistry as tracers for leaky sewage line contamination of stream base flow in the Atlanta metropolitan region, 2005-2007.


-Literature review resulting in a book chapter involving a comprehensive overview of
Rose: Curriculum Vitae


- Statistical analysis of long-term runoff trends in the southeastern U.S. with special emphasis upon the effects of antecedent rainfall on runoff, 2007-present.

**FUNDING:**

**Research Grants (in chronological order):**

1] "Displacement of Saline Water From Aquifers: A Numerical Modeling Approach" (Principal Investigator); *Petroleum Research Fund/American Chemical Society* (ACS-PRF #20839-GB2) $18,000; 1988-1990

2] "The Hydrogeology of Cumberland Island and the Impact of Channel Deepening on the Freshwater Resources of Cumberland Island" (Co-principal Investigator); $50,000 per annum; *National Park Service/U.S. Geological Survey/Georgia State University Cooperative Agreement* (CA 5072-5-8001); 1988-1992.

3] "The Use of Environmental Isotopes to Assess Ground Water Flow Within the Piedmont Province" (Principal Investigator) *Georgia Water Resources Research Institute* (#14-08-001-G-1556/#1) $8,466; 1989-1990.

4] "Environmental Tritium Systematics Applied to the Interpretation of the Geochemical and Hydrological Dynamics of Watersheds". (Principal Investigator); *National Science Foundation - Research in Undergraduate Institutions* (#EAR-9117540); $63,404; 1992-1994.

5] "The Utilization of Environmental Tritium for the Investigation of Ground-Water Pumping Dynamics in the Piedmont Province of Georgia" (Principal Investigator); *Georgia Water Resources Research Institute*; $6,000; 1992-1993.
6] "An Investigation of the Hydrochemical and Environmental Tritium Dynamics within a Piedmont Province Watershed" (Principal Investigator); Georgia State University Research Grant (# 92-04); $2,800; 1992.

7] "Hydrochemistry of Tertiary aquifers in the Georgia Coastal Plain applied to tritium pollution problems near the Savannah River Plant" (Principal Investigator); State of Georgia Department of Natural Resources - Georgia Geologic Survey Research Contract; $13,750; 1992-1993.

8] "An isotopic investigation of water movement in an upland watershed - Coweeta Hydrological Laboratory" (Principal Investigator); Southeast Experimental Station - Coweeta Hydrological Laboratory (National Forest Service; Department of the Interior); $10,000; 1992-1994.

9] "Upgrading the hydrochemistry laboratory for the improved analysis of aqueous ions using ion chromatography"; Georgia State University Quality Improvement Program Award; $17,170; 1993.

10] "Continued isotopic investigation of water movement in an upland watershed - Coweeta Hydrological Laboratory" (Principal Investigator); Southeast Experimental Station - Coweeta Hydrological Laboratory (National Forest Service; Department of the Interior); $4,100; 1993-1994.

11] “Acquisition of an automated atomic adsorption spectrometer for enhancement of undergraduate education in environmental geology and geochemistry” (Principal Investigator; D.A. Vanko, Co-P.I); National Science Foundation Instrumentation and Laboratory Improvement; $27,066; 1994-1995.

12] "Trace metal inputs and outputs within an urbanized watershed of the Georgia Piedmont Province" (Principal Investigator). Georgia State University Research Initiation Grant (#99-044); $5,000, 1998-1999.


14] “Upgrading the hydrochemistry laboratory: purchase of a new ion chromatograph" Georgia State University Quality Improvement Program Award; $22,056; 2001

15] “A combined hydrological, geochemical, and isotopic approach to understanding the effects of basin scale on base flow systematics in the Georgia Piedmont” (Principal Investigator). Georgia Water Resources Institute; $18,000; 2003-2004.


17] “ The natural enrichment of stable cesium in weathered micaeous materials and its implications for $^{137}$Cs sorption.” Elliott, W.C. (P.I.), Krogstad, E.J. (Co-Investigator),
Rose: Curriculum Vitae


Educational Grants (in chronological order):

1] "Improvement of the Hydrogeology and Hydrogeochemistry Laboratory"; Georgia State University Instructional Improvement Grant; $970, 1988-1989

2] "Shadow Scientist" Preceptor Program (in cooperation with the GSU Chemistry Department; National Science Foundation; $1,000, 1991.

3] "Initiation of an interdisciplinary geochemistry program in the Department of Geology", Georgia State University Chancellor's Initiative Fund; (with D.A. Vanko, W.J. Fritz, H.A. Babaie, and T.E. LaTour); $52,000, 1992.

4] "An interdisciplinary geochemistry program in the Department of Geology", Georgia State University Chancellor's Initiative Fund; (with D.A. Vanko, W.J. Fritz, H.A. Babaie, and T.E. LaTour); $52,000, 1993.

5] "An interdisciplinary geochemistry program in the Department of Geology", Georgia State University Chancellor's Initiative Fund; (with D.A. Vanko, W.J. Fritz, H.A. Babaie, and T.E. LaTour); $52,000, 1994.

6] "An interdisciplinary geochemistry program in the Department of Geology", Georgia State University Chancellor's Initiative Fund; (with D.A. Vanko, W.J. Fritz, H.A. Babaie, and T.E. LaTour); $40,000, 1995.

7] "Acquisition of an automated atomic adsorption spectrometer system for enhancement of undergraduate education in environmental geology and geochemistry." National Science Foundation-Undergraduate Education-Instrumentation and Laboratory Improvement [NSF Grant # DUE-9452375]. (Principle Investigator; D.Vanko, Co PI); $27,066 + $27,066 in GSU matching funds); 1994-1996.

8] "An interdisciplinary geochemistry program in the Department of Geology", Georgia State University Chancellor's Initiative Fund (#97-019/001); (with D.A. Vanko, W.J. Fritz, H.A. Babaie, W.C. Eliot, A.M. Ghazi and T.E. LaTour); $30,000 per year; 1996-1999.

9] "Improvement of Laboratories in the Geology Department". (W. Fritz, H. Babaie (Co PIs); Georgia State University Chancellor's Initiative Program; $6,000; 1996-1997.

10] "Acquisition of water monitoring equipment for aqueous geochemistry instruction". Georgia State University Chancellors Initiative Program; $1,600; 1998-1999.

PUBLICATIONS:
Refereed Journals (in chronological order):


**Encyclopedia Article (invited contribution):**


**Book Chapter (invited contribution):**


**Book Review (invited contribution):**


**Course Books, Short Courses and Field Trip Guides:**


7] Rose, S. 2004. *Introduction to Landforms.* A Short Course for the Atlanta Public Schools PRISM Workshop. CD ROM.

**Technical Completion Reports (in chronological order):**


the Georgia Water Resources Institute #B-02-645-G8. 80p

Conference Proceedings (in chronological order):


Rose: Curriculum Vitae


Abstracts (in chronological order):


Rose: Curriculum Vitae

Programs. v.25 (6), p.245.


Rose: Curriculum Vitae


PRESENTATIONS (in chronological order):


3)"Isotopic constraints upon the residence time of ground water in the Piedmont Province of Georgia", Department of Geology, University of Georgia, May, 1990.

4] "Environmental tritium as a tracer of ground-water flow in the Piedmont Province of
Rose: Curriculum Vitae

Georgia”, Georgia Ground Water Association, Atlanta, Georgia; August, 1990.

5) "Tritium concentration and their implications for the residence time of ground water in the Piedmont Province of Georgia", Geological Society of America National Convention, Dallas, Texas; November, 1990.

6) "Present and future directions for isotope hydrology research in the Georgia Piedmont", Georgia Water Resources Conference, University of Georgia; Athens, Georgia; March, 1991.


8) "Environmental tritium as a tool for hydrological studies in the Georgia Piedmont". University System Symposium on Research, Athens, Georgia; May, 1992.

9) "Annual environmental tritium variation with Piedmont Province streamflow". Geological Society of America National Convention, Cincinnati, Ohio; October, 1992.


12) "The field investigation of salt-water intrusion: Cumberland Island, Georgia" (poster session). Geological Society of America National Convention, Boston, Massachusetts, October, 1993.

13) "Temporal isotopic ($\delta^{18}O$ and $^3H$) variation within a forested Piedmont watershed: implications for the residence time of runoff components". Geological Society of America National Convention, Boston, Massachusetts, October, 1993

14) "Isotope Hydrology Studies of Falling Creek". Georgia State University Department of Geology Seminar, Atlanta, Georgia. November, 1993


17) "The timing of near-surface hydrological processes in the Georgia Piedmont Province as evidenced by environmental isotopic data". (poster session) Southeastern Section of the Geological Society of America Convention, Knoxville, Tennessee, April,
1995.


23] "An Overview of the Acid Mine Discharge Problem". Georgia State University, Department of Geology, Environmental Geology Course invited speaker, April, 1996.


29] "Isotope composition of ground water at Warm Springs, Georgia. Georgia Ground Water Association Meeting and Field Trip. Columbus and Warm Springs, Georgia. April, 1998.

30] "Understanding Atlanta metro's water resources: a hydrologist's view". Rotary Club...


34] "Controls upon streamflow hydrochemistry in the Blue Ridge and Piedmont Provinces of Georgia (poster session) Southeastern Section of the Geological Society of America Convention, Athens, Georgia, March, 1999.

35] "An overview of the acid mine drainage problem and the environmental geochemistry of related ferric precipitates" Columbus State University Department of Geology and Chemistry Seminar Series, Columbus, Georgia, April, 1999.


38] “The arsenic threat to ground water: ” Georgia State University Department of Geology Seminar Series, November, 2000.


43] "The arsenic problem in ground water: the Bangladesh tragedy". National Science Foundation Sponsored Environmental Chemistry Workshop, Georgia State University, Atlanta, Georgia, August, 2002.
Rose: Curriculum Vitae


51] “Some key features of urban hydrology within the Chattahoochee River basin”. Atlanta Geological Society, Atlanta, Georgia, August, 2005.

52] “Twenty years of tritium investigation within the Georgia Piedmont”. Department of Geoscience Seminar, Georgia State University, November, 2005.


56] “Assessing the human impact on the hydrochemistry of the Chattahoochee Basin”. Department of Geosciences Seminar. Georgia State University, Atlanta, Georgia, April, 2008.
Rose: Curriculum Vitae


60) Do watersheds “remember” past rainfall?; the effects of antecedent drought on stream runoff in the Piedmont Province”, Georgia Ground Water Association, Atlanta, Georgia, July, 2009.

REVIEWS:

Reviews For Refereed Journals/Conference Proceedings/Encyclopedias:

Applied Geochemistry
2000 - 1 paper; 2003-1 paper; 2005-3 papers; 2008-1 paper

Chemical Geology
1998 - 1 paper

Ecohydrology
2010 - 1 paper

Encyclopedia of Hydrological Sciences
2004 - 1 chapter

Environmental Earth Sciences
2010- 1 paper

Environmental Monitoring and Assessment
2007 - 1 paper; 2008- 1 paper

Environmental Science and Technology
1999 - 1 paper; 2004 - 1 paper

Geochemica et Cosmochimica Acta
1999 - 1 paper

Geochemistry: Exploration, Environment, Analysis
2002 - 1 paper
**Geological Society of America**  
1993 - 1 Special Publication article

**Georgia Journal of Science**  
1994 - 1 paper; 1996 - 1 paper, 1998 - 1 paper

**Ground Water**  

**Hydrogeology Journal**  
2008 - 1 paper

**Hydrological Processes**  
2002 - 1 paper; 2004 - 2 papers; 2005 -1 paper; 2009-2 papers, 2010 - 4 papers

**Hydrological Sciences Journal**  
2001 - 1 paper

**Journal of the American Water Works Association**  
2010-1 paper

**Journal of Environmental Quality**  
2003 - 1 paper

**Journal of Geoscience Education**  
1997 - 1 paper

**Journal of Hydrology**  
2002 - 1 paper; 2004 - 3 papers; 2005 - 1 paper; 2009-3 papers

**Limnology and Oceanography**  
1995 - 1 paper

**Proceedings of the Georgia Water Resources Conference (Conference Proceedings)**  

**Science of the Total Environment**  
2007 - 1 paper

**Water**  
2010 - 1 paper
Rose: Curriculum Vitae

Water Resources Research
1991 - 1 paper; 1994 - 1 paper; 2005 - 1 paper

Reviews For Text Book Publishers:
1996 - Prentice Hall; Groundwater Quality: Principles and Applications; 3 chapters

1997/1998 - Prentice Hall; Groundwater Quality: Principles and Applications; 6 chapters


Reviews For Funding Agencies:


Petroleum Research Fund/American Chemical Society; 1992


National Science Foundation; Division of Undergraduate Education Instrumental Laboratory Instruction Program Panel Member to award NSF funding (reviewed 17 proposals), Washington, DC; January, 1995

National Science Foundation; Earth Science Division, Hydrological Science Program; 2 proposals, 1998; 1 proposal, 2004


National Science Foundation: Division of Undergraduate Education; 2 proposals, 2001

Israeli Science Foundation, 1 proposal, 2003.

Water Resource Research Institute, University of North Carolina, 1 proposal, 2006

INSTRUCTION:

Georgia State University (1987-Present):
Introduction to Physical Geology I (Geology 101/704),
Introduction to Physical Geology II (Geology 102/705)
Introduction to Hydrology (Geol 215),
Hydrogeochemical Processes (Geol 430/630),
Geochemistry (Geol 475/675);
Introduction to Geoscience I (Geol 1121, formerly Geol 101)
Introduction to Geoscience II (Geol 1122, formerly Geol 102)
Rose: Curriculum Vitae

Hydrogeology (Geol 4007/6007, formerly 465/665)
Aqueous Geochemistry (Geol 4003/6003, formerly 430/630)
Seminar in Geological Science (Geol 4095/6095)

California State University, Bakersfield (1986-1987):
Physical Geology; Hydrogeology; Introduction to Geomorphology; Environmental Geology and Intermediate Algebra

Short Courses:
State of Georgia, Department of Natural Resources, Environmental Protection Division: "Geochemistry of Natural Water: Theory and Practice", January, 1994, Atlanta, Georgia.

Environmental Educational Enterprises, "Basic Principles and Applications of Isotope Hydrology". March, 1995, Atlanta, Georgia.


STUDENT ADVISEMENT

Ph.D. Dissertation Advisor:


M.S. Thesis Advisor:

1] Steven Wilson (MS, 1990), Thesis Topic: The hydrochemistry of southern Cumberland Island, Georgia

2] Lisa Stewart (MS, 1993), Thesis Topic: Estimation of ground-water residence times within a regolith-fractured crystalline rock flow system using environmental tritium


13] Robert Neurath (MS, 2007), Thesis Topic: Comparative baseflow hydrochemistry of various septic system density areas within the Yellow River watershed, Gwinnett County, Georgia.


**Non-Thesis Option Project Student Advisement for M.S Requirement:**

Nicole Vermillion (MS, 2005) Project Topic: Interpretation of chlorofluorocarbon model ages for ground water in the Georgia Piedmont.

Ph.D. Dissertation Review Committee Member:
Al Elser (Ph.D. 2004); Gerald Pollack (Ph.D. 2008)

M.S. Thesis Reading Committee Member:
McKenzie Mallory (MS, 1988), Anna Long (MS, 1989), Barbara Milby (MS, 1990), Jennifer Herndon (MS, 1991), Greg Carter (MS, 1991), Joseph Alfano (MS, 1993), Randal Mackay (MS, 1992), Chifeng Gu (MS, 1994), Xiusong Huang (MS, 1995), Ann McCartney (MS, Chemistry, 1995), Jennifer Sagan (MS, Biology, 1996), Melissa Huner (MS, 1997), Gertrude Briggs (MS, 1997), Bruce Taylor (MS, 1997), Andrea Edenfield (MS, 1998), Scott Robertson (MS, 1999), Heather Caudill (MS, 1999), Al Elser (MS, 1999), Autumm Yatabe (MS, 1999), Sean Porter (MS, 1999), Kristen Sanford (MS, 2004), Ankan Basu (MS, 2004), Ajay Tripathy (MS, 2005), Shankhar Phorkaral (MS, 2007), Richard Whittington (MS, 2009), Robin Polinsky (MS, 2009) Craig VanTrees (MS, 2010), Cynthia Broda (MS, 2010), Ross Martin (MS, 2010 expected); Thomas Naumann (MS, 2010 expected)

Senior Thesis Advisor:
Karim Essawy (B.S., 1992) Senior Research Topic: Major ion variation in Falling Creek stream flow.

Thomas Hunnicutt (B.S., 1994) Senior Research Topic: Isotopic and geochemical variation within an upstream watershed, Coweeta Hydrological Laboratory, Otto, North Carolina.


Patricia Pffeifer (B.S., 1998) Senior Research Topic: A comparison of Thiobacillus ferroxidans ATCC 198959 to an isolate from an acid rock drainage site in Harralson, Co. Georgia.

Danette Cooper and Kris Spikes (B.S., 2001) Senior Research Topic: Hydrogeology of an urban wetland; Dekalb Co., Georgia.

Kelly Carroll, (B.S., 2005) Senior Research Topic: Concentration/Discharge Hysteresis Analysis of Storm Events at the Panola Research Watershed, Georgia, USA.

Significant Assistance in Providing Guidance and Recommendations for GSU Student’s Continued Graduate Education:
Ronald McNair Post-baccalaureate Achievement Program:
Tracy Jo Ferring, Attenuation and release of metals from boulder coatings: Eastern Kentucky strip mining district. 1995.

SERVICE:

Service to the Department of Geology/Geosciences (1988-Present):

-Hydrogeology Research Station Planning Committee, 1988-1989

-Seminars Coordinator, 1988-1989

-Undergraduate Advisement and Curriculum Committee, 1988-Present

-Departmental Chancellor's Initiative Fund proposal committee, prepared proposal for department, 1993-1996.

-Department Graduate Studies Director, 1991-1992

-Faculty Search Committee, 1993-1998


-Graduate Curriculum, Admissions and Financial Assistantship Committee, 1989-2005

-Awards Committee (Chair), 1995-2006

-Faculty Advisor, Student Chapter of the Association of Engineering Geologists, 1997-1998

-Department Promotion and Tenure Committee I, 1997- Present


-Chaired committee to evaluate Pre-Tenure Review Evaluation for Dr. Pamela Burnley, April, 2000


-Acting Chair for Department of Geology, November-December, 2000

-Provided instruction for the Geology Department ACRES Program, July, 2001

-Department Chair, 2001-2002
-Departmental Alumni Coordinator, 2002-2006

-Department Executive Committee, 2002-2005

-Department Search Committee for geochemistry faculty position, 2003-2004


-Search Committee Chair for Lecture position in Introductory Geoscience, 2007-2008.

-Search Committee for Visiting Lecture positions in Geosciences; 2009

-Department Undergraduate Advisor: 2010-present

-Search Committee Chair for Visiting Lecturer Position; 2010

**Service to the College of Arts and Sciences and the University:**

-Speaker; NSF Young Scholars Program, GSU Department of Chemistry July, 1988

-Geology Department Coordinator and Instructor; "Operation Smart", in cooperation with Atlanta Girl's Club, April 1990


-Georgia State University representative for the Savannah River ERDA consortium workshop; 1990-Present

-Instructor/Preceptor; National Science "Shadow Scientist" Experience (in cooperation with Department of Chemistry, Georgia State University, Summer, 1993

-Faculty Search Committee, Department of Geography, 1992-1993; Served as outside representative for the Department of Geography.

-Lecture and Laboratory Demonstration for GSU Department of Chemistry's National Science Foundation sponsored "1994 Environmental Chemistry Workshop"; Georgia State University, August, 1994.

-Lecturer for "Food Day" teleconference seminar in coordination with GSU's Department of Nutrition; Topic: Georgia Water Resources (lecture telecast throughout state); October, 1994.

-Lecturer for GSU Honor’s Program Ecology Program; Overview of Earth’s Hydrological
Rose: Curriculum Vitae

Cycle and Ground Water Contamination; October, 1994.

- Lecture and Laboratory Demonstration for GSU Department of Chemistry's National Science Foundation sponsored "1995 Environmental Chemistry Workshop"; Georgia State University, June, 1995.

- Assisted GSU Biology Department with the AAS analysis of cesium and potassium uptake by microorganisms; with Stephanie Hagan (Senior's Honor Thesis and MS Thesis under the direction of Dr. William Nolan); June, 1995; December, 1997

- GSU corepresentative for the proposed Water Resources Research Center in cooperation with ERDA, SCUREF and Savannah River Ecology Lab; 1995-1996

- Lecturer and laboratory demonstration for GSU's Environmental Law Course: Atomic absorption analysis of metals; September, 1995.

- Geology Department representative, for GSU Environmental Research Center, 1994-1996

- Lecture and Laboratory Demonstration for GSU Department of Chemistry's National Science Foundation sponsored "1996 Environmental Chemistry Workshop"; Georgia State University, March, 1996

- College of Arts and Sciences; Awards Committee Member; 1996-1998

- Lecture and Laboratory Demonstration for GSU Department of Chemistry's National Science Foundation sponsored "1997 Environmental Chemistry Workshop"; Georgia State University, March, 1997.

- Conducted AAS analyses for the Biology Department with Stephanie Hagan (MS student) and Dr. William Nolan, December, 1997.

- Lecture for GSU Department of Chemistry's National Science Foundation sponsored "1998 Environmental Chemistry Workshop"; Georgia State University; March, 1998.

- Geology Department Associate for University's Center for Teaching and Learning; 1999-present


- Assisted the GSU Development Office in soliciting funds for environmental and hydrogeological research, May, 2000.

- Provided AAS analyses for Dr. Jenny Yang (GSU Chemistry Department) and students,
Rose: Curriculum Vitae

November, 2001

- College of Arts and Science/College of Education, Professional Education Faculty, Content Knowledge Committee member, 2002-Present

- Educational Seminar Presentation, Atlanta Public School Teachers, PRISM Workshop Atlanta, Georgia, July, 2004

- Geology Department representative for "Critical Thinking" initiative in the core curriculum, 2004 - present

- Geosciences Department representative for the STEM Committee (convened to better integrate science curriculum into undergraduate Calculus instruction); 2009-2010

Service to the Professional/Technical Community:

- Judge; 40th Science and Engineering Fair; Athens, Georgia; April, 1988

- Georgia Water Resources Institute Planning Committee, 1989

- Participant Advisor; Georgia Department of Natural Resources and the Institute of Community and Area Development (ICAD) and the University of Georgia; Workshop for Well-Head Protection; Athens, Georgia; November, 1990


- Scholarship and Student Activity Committee Member for the 1993 Georgia Water Resources Conference, Athens, Georgia

- Georgia State University representative for the Steering Committee of the 1993 Georgia Water Resources Conference, Athens, Georgia; December, 1992 - April, 1993

- Georgia State University representative for Georgia Rural Water Association Seminar on "Groundwater/Well Head Protection", Atlanta, Georgia; January, 1993

- Scientific advisor for Georgia Southern University, Department of Geology; Funded project assessing a nitrate contamination problem in southern Georgia. February, 1993.

- Scholarship and Student Activity Committee Member for the 1995 Georgia Water Resources Conference, Athens, Georgia.

- Session Chair for Earth and Atmospheric Science Division, Georgia Academy of Science 1994 Annual Meeting, Marietta, Georgia. April, 1994.
Rose: Curriculum Vitae

- Session Chair for 1993 Georgia Water Resources Conference, Athens, Georgia, April 1993


- Chair, Earth and Atmospheric Science Section of Georgia Academy of Science. Organized section committee for 1995 State Conference

- Academic Advisor and Member of the Board of Directors of the Georgia Ground Water Association; 1994-Present

- National Science Foundation/Division of Undergraduate Education Instrumental Laboratory - Instruction Program Panel Member to award NSF funding (reviewed 17 proposals), Washington, DC; January, 1995

- Session Organizer and Chair, Earth and Atmospheric Sciences Section of Georgia Academy of Science Annual Meeting; Augusta, Georgia; April, 1995

- Georgia State University representative for the Steering Committee of the 1997 Georgia Water - Resources Conference, Athens, Georgia; December, 1995 - Present

- Faculty Advisor; Georgia State University Student Chapter of the Association of Engineering Geologists; 1997


- Awards Committee Chair, 1997 Georgia Water Resources Conference,


- Georgia Water Pollution Control Authority Scholarship Selection Committee; July, 1998.


- Performed chemical analyses of cave water samples for Dr. James Meyer, State University of West Georgia, February, 2001.

- Board member for the State Board of Registration for Professional Geologists, Appointed by Governor Roy Barnes, 2002-2004.

- Steering Committee Member, GSU Representative, 2003 Georgia Water Resources Conference, 2002
Rose: Curriculum Vitae

-Committee Member for the Chattahoochee Riverkeepers/City of Atlanta Technical Oversight Committee, 2003-Present

-Session Moderator, Georgia Water Resources Conference, Athens Georgia, April, 2005

-Student Coordinator, Georgia Water Resources Association, 2007-Present

-Presentations Review Committee Panel, Georgia Water Resources Conference, 2008


-Science and Engineering Advisory Panel; State of Georgia DNR, EPD, 2009-2010

-Editorial Board Member, Hydrological Processes, a leading hydrological journal, 2010-2012.

Service to the Community at Large:

-Live Interview, WAGA (Channel 5) 12:00 pm News (To explain metro Atlanta water problems); July, 1989

-Lecturer for North Atlanta Senior Services  (University Program in Geology); Topic: An Overview of the World's Water Resources", January, 1990

-Lecturer for Shamrock High School's 8th grade "Impact" Science class on fossils in the geologic record; November, 1995

-Assisted the Atlanta Journal and Constitution with a story regarding Atlanta's water infrastructure; March, 1997

-Interview with Atlanta Journal Constitution concerning Atlanta's liquid waste disposal problems; March 1997.


-Assisted Norcross High School Student (Eric Wright) with his school Science Fair Project involving water chemistry of the Chattahoochee River; November, 1999.

-Assisted South Atlanta High School science class (Ms. Booker) with project on earthquakes, February, 2000.

-Interview 10:00 pm WAGA (FOX 5) News. Comments and questions on the desalinization of ocean water as a viable option for drought relief and an alternative
Rose: Curriculum Vitae


- Communicated with the editors of Parade magazine regarding an important ground water issue (arsenic contamination in Bangladesh) for publication in Parade magazine, October, 2000

- Tutor and Mentor, Project Read (An independent adult literacy program), Tutored a student for 2 hours each week Atlanta, Georgia, 2002-2003.

- Provided technical background for an article on drought that appeared in the Griffin Daily News, May, 2002

- Assisted the Jackson Herald (newspaper) with article on isotope hydrology research, April, 2003

- Provided an interview regarding volcanoes for a second grade student at Jackson Elementary in Jones Co., Georgia, January, 2006.

- Assisted the Atlanta Journal Constitution (reporter: Mary McDonald) with an article on well drilling in Atlanta during the current drought. October, 2007


- Assisted Atlanta Magazine with an article on water in northern Georgia, April, 2008.
BIOGRAPHICAL SKETCH

PARAMA ROY
Assistant Professor
Department of Geosciences
Georgia State University
Phone: (414) 324-1841
E-mail: proy@gsu.edu

Professional Preparation:

2008: Ph.D. in Geography, University of Wisconsin-Milwaukee, USA
2002: M.Sc. in Geography, Presidency College-Calcutta University, India
2000: B.Sc. in Geography, Presidency College-Calcutta University, India

Appointments

Aug 2008-present: Assistant Professor, Department of Geosciences, Georgia State University
Sept 2009: Affiliated Faculty, The Partnership for Urban Health Research, Georgia State University
2004-2008: Lecturer, Department of Geography, University of Wisconsin-Milwaukee
2003-2004: Teaching Assistant, Department of Geography, University of Wisconsin-Milwaukee

Competitive Fellowships, Awards and Grants

2008-2009: Research Initiation Grant, Georgia State University, University Research Services and Administration
2008-2009: Writing Across the Curriculum Grant Program, Georgia State University
2007: Doctoral Dissertation Research Improvement Grant from National Science Foundation (NSF).
2007: UWM’s Graduate Student Travel Award for attending the Annual Conference on Critical Geography in Lexington, KT, in 2007 October.

2000: Geographical Institute Book Prize: 1st position in B.Sc. Part I and Part II combined Examination of Calcutta University, among the students of the college in Geography.

2000: Geographical Institute Book Prize: 1st position in B.Sc. Part II Practical Examination of Calcutta University, among the students of the college in Geography.

1999: Geographical Institute Book Prize: 1st position in Part I Examination of Calcutta University, among the students of the college in Geography.

1999: College Book Prize: 1st position in Part I Examination of Calcutta University, among the students of the college in Geography.

**Refereed Publications**

**Journal Articles**


**Book Reviews**


**In Review**

Roy, P. Non-profit and community-based green space production in Milwaukee-contradictions of civic participation in neoliberalized urban environmental governance (submitted to the journal, Space and Polity)

**Papers Presented at Professional Conferences**

November, 2009: “Contradictions of Neoliberal Privatization of Urban Green Spaces in Milwaukee.” Presented at the South Eastern Division of Association of American Geographers (SEDAAG), Knoxville, TN.

April, 2009: “Gardens of Tulips and Tomatoes: Is this how spaces of resistance to neoliberal injustices look like?” Presented at the annual meeting of the Association of American Geographers, Las Vegas, NV.


April, 2007: “Civil Participation-A means to Environmental Equitability or Perpetual Inequality?” Presented at the annual meeting of the Association of American Geographers, San Francisco, CA.

October, 2005: Producing Green Bodies the Milwaukee Way: Race, Gender, Labor and the Metabolization of Milwaukee’s Urban Environmental Workers. Presented at the 12th Annual Mini-Conference on Critical Geography, Miami University.

April, 2005: The Metabolization of Milwaukee’s African American Urban Environment. Presented at the annual meeting of the Association of American Geographers, Denver, CO.

**Pedagogy**

At Georgia State University: Introduction to Human Geography
   Qualitative Research Methods in Geography
   Economic Geography
   Graduate Seminar on Neoliberal Political Economy

At University of Wisconsin: World Regional Geography
   -Milwaukee Introduction to Environmental Geography (online and in-class)
   Labs for Physical Geography

**Workshop Participation**

2009: Early Career GFDA (The Geography Faculty Development Alliance) Workshop, University of Colorado, Boulder, CO.

2005: International Political Economy and Ecology Summer School at York University, Canada.
Manuscript reviewed for journals

International Journal of Urban and Regional Research

Journal of Urban Affairs

Present Masters Student Advisees

Carol Brown: A comparative analysis of participatory governance: the City of Atlanta and neighboring Cobb County, Georgia

Mathew Chapman: Infill and Ultra-Gentrification of Oak Grove in Dekalb County, Atlanta

Simone Buckeridge: Iranian Spaces in Richmond Hill, Toronto: An Investigation into Ethnic Clustering and Landscape Changes

Laura Joseph: Park-use in cities (Title undecided)
CURRICULUM VITAE
Prepared October 2010

Personal Data

Name: Kenneth J. Terrell

Business: Department of Geosciences
          Georgia State University
          Atlanta, Georgia 30303

Phone: 404-413-5780

Currently: Senior Lecturer
          Department of Geosciences

Education

AB Anthropology, 1972, Georgia State University, Atlanta, Georgia

Coursework in Geology and Zoology, 1973 – 1975, University of Georgia, Athens, Georgia

MA Anthropology, 1980, University of Cincinnati, Cincinnati, Ohio

AB History, 1993, Georgia State University, Atlanta, Georgia

Awards and Honors

1979 University Graduate Scholarship, University of Cincinnati

1987 Nominated for Outstanding Junior Faculty Award, College of Arts and Sciences, Georgia State University

1987, 1989, 1993 Certificate of Recognition for Assistance to Students With Disabilities, Georgia State University

1990 George M. Sparks Award for Outstanding University Service, Georgia State University

1991 University Intersorority Council Outstanding Teacher Award, Georgia State University

1991, 1993 Nominated for Distinguished Honors Professor Award, Georgia State University
1994  Nominated for Outstanding Teaching Award, College of Arts and Sciences, Georgia State University

Grants

1980  Thesis Development Grant, University of Cincinnati

1995  Quality Improvement Grant, Georgia State University (jointly with Dr. William J. Fritz)

Fields of Interest and Specialization

Geoarchaeology
Vertebrate Paleontology
History of Science

Positions Held

Prior to Georgia State University

1978 and before. Private industry employment

Beers Incorporated, Atlanta, Georgia (construction general contractor)
Batson-Cook company, Atlanta, Georgia (construction general contractor)
Daniel Construction Company of Georgia, Atlanta, Georgia (construction general contractor, now Fluor-Daniel International)

   University of Nebraska State Museum, Lincoln, Nebraska. Field Assistant

Positions at Georgia State University, Atlanta, Georgia

9/80 – 6/85  Department of Anthropology, Curator and Adjunct Instructor
6/85 – 3/93  Department of Geology, Research Coordinator and Adjunct Instructor
3/93 – 5/95  Department of Geology, Instructor
5/95 – 7/02  Department of Geology, Academic Professional
7/02 – 8/05  Department of Geology, Lecturer
8/05 – 10/10 Department of Geosciences, Senior Lecturer

Professional Associations
Professional Activities

1983 – 1985 Georgia Archaeological Research Design Task Force. Georgia State University’s representative on task force advising state archeologist on prehistoric and historic resources

1992 – 1994 Georgia State University Saturday School for Scholars and Leaders. Teach geology courses for gifted 4th – 6th graders in Georgia State University, College of Education program

1995 - 2010 American Association for the Advancement of Science. Organize, staff, and supervise two events for regional and state competitions for AAAS sponsored National Science Olympiad for middle school students

2007 – 2009 Georgia State University Laboratory Safety Committee. Member of university committee advising Vice President for Research on laboratory safety

Publications


Professional Presentations

1981 “Techniques for the Recovery of Extinct Megafauna from Archaeological Sites”. Fifty-Eighth Annual Meeting, Georgia Academy of Sciences, Georgia Institute of Technology, Atlanta, Georgia

1982 “Establishing a Computer-Based Data Retrieval System for Human Skeletal Collections”. Seventeenth Annual Meeting, Southern Anthropological Society, Appalachian State University, Boone, North Carolina

1998 with Shannon C. McFarlin. “Origin and Accumulation of the Medical College of Georgia Site Faunal Assemblage”. Conference on Historical and Underwater Archaeology, Society for Historical Archaeology, Atlanta, Georgia
Courses Taught

Georgia State University Department of Anthropology

Anth 101  Introduction to Anthropology
Anth 203  Introduction to Archaeology
Anth 320  Prehistoric Cultures of North America
Anth 357  Old World Prehistory
Anth 418  Archaeology of the Southeastern United States
Anth 498A Selected Topics: Archaeology and Human Ecology
Anth 498A  Selected Topics: Museum Methods
Anth 499  Directed Readings

Georgia State University Department of Geosciences (formerly Department of Geology)

Geol 102  Introductory Geology II
Geol 301  Concepts of Earth Science
Geol 320  Geomorphology
Geol 350  Paleontology
Geol 499  Directed Readings
Geol 699  Directed Readings
Geol 702  Introductory Geology for Teachers
Geol 1121K  Introductory Geosciences I
Geol 1122K  Introductory Geosciences II
Geol 4011/6011  Principles of Paleontology
Geol 4999  Directed Readings
Geol 6999  Directed Readings
Geol 7122  Introductory Geosciences for Teachers
Geol 8095  laboratory Instruction Practicum

Georgia State University Honors Program

Geol 1121K - Honors  Honors Introductory Geosciences I
Geol 1122K - Honors  Honors introductory Geosciences II

Georgia State University Scientific Perspectives on Global Problems Program

Pers 2002B  Global Mass Extinctions
Pers 2002F  Dinosaurs and Their world

Georgia State University College of Arts and Sciences ISCI Science Courses for College of Education K – 5th Grade Education Majors
ISCI 2001 Introduction to Biology and Geology
Appendix F4: A description of how the unit's faculty members were involved in the process of developing and approving this self study

The bulk of the self study was prepared by Jeremy Diem, the chair of the self-study committee. He was responsible for the initial drafts of Sections A, B, E, F, and H, editing all sections, and producing all the tables and appendices (except B2). Leslie Edwards and Seth Rose assisted with obtaining data for peer departments. Daniel Deocampo produced the initial draft of Section C. Leslie Edwards and Katherine Hankins produced the initial draft of Section D. Crawford Elliott produced the initial draft of Section G, while Jordan Clayton provided useful edits of the section. Daniel Deocampo and Jordan Clayton helped refine the objectives in Section H. John Allensworth edited Sections A and H. All faculty members provided information for inclusion in the report. Faculty were invited to provide comments on Sections B, D, E, and F on 1 December 2010, and, on 10 December 2010, a draft of entire self-study report was distributed to the faculty for comments. The report was approved by the faculty on 10 January 2011.
Appendix F5: Evidence for discipline-appropriate rationale and criteria for evaluation of scholarly and creative work

The following information is from the Department of Geosciences Promotion and tenure Manual.

Scholarship is one of the fundamental aspects of the Department of Geosciences. The department distinguishes between routine and innovative research efforts as judged by the candidate's peers at the university and elsewhere. The principal standard should be quality, rather than quantity. A candidate's scholarship is affected by many factors including the difficulty of the research, access to appropriate experimental equipment or facilities, access to appropriate field localities and/or collections, access to appropriate databases and/or imagery, and the number and background of students available to participate in the research. All of these factors will be taken into account in evaluating the candidate's accomplishments. It is the responsibility of the candidate to assess the availability of appropriate facilities, personnel, and space so that the candidate's research plan is ambitious but feasible. Ongoing discussion and revision, if necessary, of that research plan between the candidate and his/her departmental colleagues, mentors, and chair is essential to preparation of the candidate for eventual consideration for promotion and/or tenure.

The evaluation of the candidate’s dossier will result in ratings of outstanding, excellent, very good, good, fair, or poor. Definitions of terms and types of evidence considered in the evaluation of a candidate’s professional development activities are summarized below and in Table I.
### Table I. Definitions and Evaluation Factors for Rating of Professional Development

<table>
<thead>
<tr>
<th>Professional Development Rating</th>
<th>Definition</th>
<th>Evidence considered in evaluation as appropriate to the discipline and candidate’s area of expertise.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outstanding</td>
<td>Internationally recognized research program</td>
<td>Publications¹, research grants-extramural funding², awards (prizes), invitations³, professional service⁴</td>
</tr>
<tr>
<td>Excellent</td>
<td>Nationally recognized research program</td>
<td>Publications¹, grants², presentations, professional service⁴</td>
</tr>
<tr>
<td>Very Good</td>
<td>Emerging nationally competitive research program</td>
<td>Publications¹ and acquisition of modest grants and attempts for major funding, presentations, some professional service⁴</td>
</tr>
<tr>
<td>Good</td>
<td>Growing research program</td>
<td>Some peer-reviewed publications or attempts for grants²</td>
</tr>
<tr>
<td>Fair</td>
<td>Limited research program</td>
<td>Occasional publications or meeting presentations</td>
</tr>
<tr>
<td>Poor</td>
<td>No research program</td>
<td>No publications, presentations, or grants</td>
</tr>
</tbody>
</table>

¹Publications should include several quality papers in major peer reviewed journals, invited chapters, and/or books.
²Research grants-extramural funding should be competitive, and/or peer-reviewed to support scholarly work in the candidate’s area of interest.
³Invited speakers at major national and international conferences or at important national or international professional workshops.
⁴Professional service is nationally acknowledged service to the profession, such as Editor, Editorial Board member, ad hoc peer reviewer for journals, or ad hoc reviewer or panelist for granting agencies.
<table>
<thead>
<tr>
<th>Publication Type</th>
<th>Author(s)</th>
<th>FY</th>
<th>Journal/Book</th>
<th>Volume</th>
<th>Pages</th>
<th>Impact Factor</th>
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<tr>
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<td>2008</td>
<td>Geographical Review</td>
<td>97</td>
<td>389-403</td>
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<td>Goto, M., Rose, R., Vlami, J., Elliott, W.C., Sarks, S.</td>
<td>2008</td>
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<td>94</td>
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<td>Jackson, M., Mena, F., Deocampo, D.M., Valls, A., Kozen, C., and Hay, R.</td>
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<td>Journal of Roman Archaeology</td>
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<td>36-74</td>
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<td>Opena T.J. and Dai, D.</td>
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<td>Crompton, J.W.</td>
<td>2009</td>
<td>Geojournal Technologies and International Security: Research Frontiers and Challenges</td>
<td>29</td>
<td>1-16</td>
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<td>Crompton, J.W.</td>
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<td>Anderson, J.R., Gullif-Young, C., Elliott, W.C.</td>
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<td>Past Territorial and Future Possibilities of the American City: The Dynamics of Asia</td>
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<td>91-100</td>
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<td>97-116</td>
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<td>840-848</td>
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<td>Review</td>
<td>Interview</td>
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<td>2008</td>
<td>Cartographica</td>
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<td>Babale, K.A.</td>
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<td>44</td>
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## Appendix F7: Faculty conference presentations given during FY 2008 – FY 2010

<table>
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<tr>
<th>Presenter</th>
<th>Year</th>
<th>Conference</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crampton, J.W.</td>
<td>2007</td>
<td>Locative Media Conference</td>
<td>Siegen, Germany</td>
</tr>
<tr>
<td>Deocampo, D.M.</td>
<td>2007</td>
<td>Geological Society of America Annual Meeting</td>
<td>Denver, CO USA</td>
</tr>
<tr>
<td>Diem, J.E.</td>
<td>2007</td>
<td>Fourth Symposium on Southwest Hydrometeorology</td>
<td>Tucson, AZ USA</td>
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<tr>
<td>Hankins, K.B.</td>
<td>2007</td>
<td>Annual Meeting of the Southeastern Division of the Association of American Geographers</td>
<td>Charleston, SC USA</td>
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<tr>
<td>Rose, S.</td>
<td>2007</td>
<td>Georgia Water Resources Conference</td>
<td>Athens, Georgia</td>
</tr>
<tr>
<td>Babaie, H.</td>
<td>2008</td>
<td>American Geophysical Union Fall Meeting</td>
<td>San Francisco, CA USA</td>
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<tr>
<td>Clayton, J.A.</td>
<td>2008</td>
<td>Annual Meeting of the Association of American Geographers</td>
<td>Boston, MA USA</td>
</tr>
<tr>
<td>Clayton, J.A.</td>
<td>2008</td>
<td>Annual Meeting of the Southeastern Division of the Association of American Geographers</td>
<td>Greensboro, NC USA</td>
</tr>
<tr>
<td>Clayton, J.A.</td>
<td>2008</td>
<td>Greater Atlanta Geomorphology and Hydrology Research Conference</td>
<td>Atlanta, GA USA</td>
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<tr>
<td>Crampton, J.W.</td>
<td>2008</td>
<td>Annual Meeting of the Association of American Geographers</td>
<td>Boston, MA USA</td>
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<td>Crampton, J.W.</td>
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<td>UCGIS/USGS Conference</td>
<td>Washington, DC USA</td>
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<td>Crampton, J.W.</td>
<td>2008</td>
<td>Worldwide Universities Network (WUN)/Royal Geographical Society/Institute of British Geographers Virtual Seminar</td>
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<td>Dai, D.</td>
<td>2008</td>
<td>Annual Meeting of the Association of American Geographers</td>
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<tr>
<td>Deocampo, D.M.</td>
<td>2008</td>
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<td>2008</td>
<td>American Chemical Society Annual Meeting</td>
<td>New Orleans, LA USA</td>
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<td>Hankins, K.B.</td>
<td>2008</td>
<td>AAG Political Geography Specialty Group miniconference</td>
<td>Worcester, MA</td>
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<td>2008</td>
<td>Annual Meeting of the Association of American Geographers</td>
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<td>Boston, MA USA</td>
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<td>Atlanta, GA USA</td>
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<td>Annual Meeting of the Association of American Geographers</td>
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<td>Georgia Water Resources Conference</td>
<td>Athens, Georgia</td>
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<td>2010</td>
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Appendix G1: Summary data on student/faculty ratios and credit hour generation from the Office of Institutional Research

**APPENDIX TABLE G-1**

| GEOSCIENCES |
| STUDENT/FACULTY RATIOS, FY 2008-2010 |
| FY 2008 | FY 2009 | FY 2010 |
| # TT Faculty | 12 | 14 | 15 |
| # Undergraduate Majors | 74 | 97 | 119 |
| # Graduate Majors (All) | 44 | 42 | 46 |
| UG/TT Ratio | 6.2 | 6.9 | 7.9 |
| Grad/TT Ratio | 3.7 | 3.0 | 3.1 |

| FY 2008 | FY 2009 | FY 2010 |
| # Graduate Faculty* | 12 | 13 | 15 |
| # Ph.D. Students | 0 | 0 | 0 |
| Ph.D./Grad Faculty Ratio | | | |

* According to the GSU FACULTY HANDBOOK (306.07), graduate faculty status is determined by each college and such status enables faculty to teach doctoral courses and research-oriented masters' courses and to serve as chair, member or reader of doctoral dissertation committees and to direct masters' theses. A member of the graduate faculty must hold appropriate terminal degrees and be actively engaged in scholarly and creative activities.

**TABLE B-5**

| GEOSCIENCES |
| Average Annual # of faculty members by rank and status |
| FY 08 | FY 09 | FY 10 | 3 YR AVG |
| Ten Prof | 1 | 0 | 1 | 0.7 |
| T Asst P | 6 | 6 | 6 | 6.0 |
| T Ast P | 0 | 0 | 0 | 0.0 |
| TT Prof | 0 | 0 | 0 | 0.0 |
| TT Asst P | 1 | 1 | 1 | 1.0 |
| TT Ast P | 4 | 7 | 7 | 6.0 |
| Total TT | 0 | 0 | 0 | 0.0 |
| FT NTT | 4 | 3 | 3 | 3.3 |
| Total FT | 16 | 17 | 18 | 17.0 |
| PTI | 6 | 7 | 3 | 5.3 |
| GTA | 1 | 0 | 0 | 0.3 |
| ACAD PROF. | 0 | 0 | 0 | 0.0 |
| ACAD ADMIN.* | 0 | 0 | 0 | 0.0 |
| GEN. ADMIN.** | 0 | 0 | 1 | 0.3 |
| PARTIAL CONTR. | 1 | 1 | 2 | 1.3 |
| ADJUNCT | 0 | 0 | 0 | 0.0 |
| Total PT | 8 | 8 | 6 | 7.3 |
| TOTAL FACULTY | 24 | 25 | 24 | 24.3 |

Average Annual Credit Hours by Level

| FY 08 | FY 09 | FY 10 | 3 YR AVG |
| UG Core | 12,663 | 13,866 | 14,508 | 13,679 |
| UG Lower | 112 | 128 | 140 | 125 |
| UG Upper | 1,233 | 1,206 | 1,409 | 1,313 |
| Grad | 1,278 | 1,335 | 1,459 | 1,357 |
| TOTAL | 15,286 | 16,535 | 17,872 | 16,564 |

Average Annual Credit Hours by Faculty Type

| FY 08 | FY 09 | FY 10 | 3 YR AVG |
| TT | 5,716 | 6,684 | 8,969 | 7,123.0 |
| FT NTT | 7,967 | 7,323 | 6,140 | 7,143.3 |
| TOTAL FT | 13,683 | 14,007 | 15,109 | 14,266.3 |
| PTI | 1,127 | 1,716 | 1,432 | 1,425.0 |
| GTA | 84 | 0 | 0 | 28.0 |
| ACAD PROF. | 0 | 0 | 0 | 0.0 |
| ACAD ADMIN.* | 0 | 0 | 0 | 0.0 |
| GEN. ADMIN.** | 0 | 0 | 0 | 0.0 |
| PARTIAL CONTR. | 392 | 812 | 1,331 | 845.0 |
| ADJUNCT | 0 | 0 | 0 | 0.0 |
| TOTAL PT | 1,603 | 2,528 | 2,763 | 2,298.0 |
| TOTAL | 15,286 | 16,535 | 17,872 | 16,564.3 |

*Includes deans, assoc. deans, etc.
**Includes provosts, assoc. provosts, etc.
Appendix G2: University Library report

GEOSCIENCES DEPARTMENT REVIEW
LIBRARY RESOURCES

Summary: Strengths and Weaknesses of the University Library Collection and Services

Overall, the Library’s collection of books, periodicals, electronic databases and other materials supports the B.A., B.S., M.A., M.S. and Ph.D. in Chemistry with Geology Specialization programs in the Department of Geosciences, which includes geology and geography.

Book Collection: The strengths of the collection include monographs on human geography, geochemistry, and hydrogeology. In addition, as a Federal Depository Library, the library provides electronic access to a large collection of United States Geological Survey (USGS) publications. While the library does collect in the areas of geographic information systems and urban geography, these growing areas of interest should be given additional collection development attention.

Peer Institutions: The Library’s number of monograph titles acquired during FY2010 for the relevant call number ranges far exceeded that of the department’s three peer institutions: Florida Atlantic University, University of Arkansas and University of Missouri-Kansas City.

Peer Institution Acquired Monographic Titles FY2010
Geography Call Number Range G-GF

<table>
<thead>
<tr>
<th>Institution</th>
<th>Titles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Georgia State University</td>
<td>181</td>
</tr>
<tr>
<td>Florida Atlantic Univ.; Port St. Lucie</td>
<td>37</td>
</tr>
<tr>
<td>Univ. of Arkansas</td>
<td>35</td>
</tr>
<tr>
<td>Florida Atlantic Univ.; Jupiter</td>
<td>14</td>
</tr>
<tr>
<td>Florida Atlantic Univ.; Boca Raton</td>
<td>2</td>
</tr>
<tr>
<td>Univ. of Missouri/Kansas City</td>
<td>1</td>
</tr>
<tr>
<td>Univ. of Missouri/Kansas City</td>
<td>0</td>
</tr>
</tbody>
</table>
Periodicals: During the previous two fiscal years, as a consequence of budget reductions, the University Library completed two journal cancellation projects. As a result, 99 journals supporting the Geosciences were cancelled. The current number of journals supporting the department’s programs has been reduced to 95. At the current rate of journal price inflation, the library does not have adequate funding to sustain, in the long term, the already reduced number of journals, let alone acquire additional journal titles. Although individual journal subscriptions have been reduced, broad electronic access to various journals in the Geosciences can be obtained through database packages such as Web of Science, ScienceDirect, and Environment Complete.

Computing: The Department of Geosciences offers a graduate level certificate in geographic information systems (GIS). The University Library helps to support this program by providing students with access to ArcGIS, an ESRI GIS software suite. Students can access ArcGIS on the majority of the library’s 350 computers.

Relevant Library Statistics

<table>
<thead>
<tr>
<th>MEASUREMENT</th>
<th>STATISTIC</th>
<th>COMMENTS/NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resources</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of journal titles supporting program</td>
<td>95</td>
<td></td>
</tr>
<tr>
<td>Number of related journal titles added in last three fiscal years</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Number of related journal titles cancelled in last three fiscal years</td>
<td>99</td>
<td>During the last two fiscal years, the library conducted two journal cancellation projects due to budget reductions.</td>
</tr>
<tr>
<td>Number of related databases added in last three years</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Number of related databases cancelled in last three years</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Number of monograph titles supporting program</td>
<td>24,976</td>
<td></td>
</tr>
<tr>
<td>Number of monograph titles in key call number ranges added in last two years (01/2008-01/2010)</td>
<td>941</td>
<td></td>
</tr>
</tbody>
</table>
| Percentage of available universe of related monograph titles purchased through approval plan during previous fiscal year. | G-GF 18%  
QE 15% |

**Services**

| Number of library instruction courses taught for department during previous fiscal year. | 1 |
| Number of library consultations held with students from department during previous fiscal year. | 6 |

**Electronic Resources**

Students and faculty in the Department of Geosciences rely heavily on journals, major reference works and databases to conduct research and complete assignments. The following section provides an overview of some of the major electronic resources available for Department of Geosciences research.

**GSU Library Subscription Databases**

<table>
<thead>
<tr>
<th>Database</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOBASE</td>
<td>Indexes journals and other resources in the Earth sciences, ecology, geomechanics, human geography, and oceanography.</td>
</tr>
<tr>
<td>GeoRef</td>
<td>Indexes journals and other resources in the areas of mineralogy and crystallography, general mineralogy, mineralogy of silicates, and mineralogy of non-silicates.</td>
</tr>
<tr>
<td>JSTOR</td>
<td>A large multidisciplinary database of core journal titles in the humanities, social sciences and sciences. Is particularly strong in geography.</td>
</tr>
</tbody>
</table>

A large multidisciplinary
<table>
<thead>
<tr>
<th>Database</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ScienceDirect</td>
<td>database, it includes numerous journal citations in the areas of geology and physical and human geography.</td>
</tr>
<tr>
<td>Web of Science</td>
<td>One of the leading sciences databases, it indexes a large number of the major journals in the sciences, including geology and geography.</td>
</tr>
<tr>
<td>Wiley Online Library</td>
<td>A large multidisciplinary database, it includes numerous journal citations in the areas of geology and physical and human geography.</td>
</tr>
</tbody>
</table>

### GALILEO Databases

<table>
<thead>
<tr>
<th>Database</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environment Complete</td>
<td>Indexes journals and monographs in the environmental sciences. Is particularly strong in geography, especially climatology, and environmental geography.</td>
</tr>
</tbody>
</table>