

**UNIVERSITY OF WISCONSIN-WHITEWATER  
AUDIT AND REVIEW SELF-STUDY**

**DEPARTMENT OF GEOGRAPHY AND GEOLOGY, 1995-2000  
(Includes Interdisciplinary Urban and Area Development Minor  
and New Interdisciplinary Environmental Studies Minor)**

**The Geography Department and Geology Program were merged during  
the last year of the five-year period under review.**

**I. Academic Assessment**

**A. Highlights/Initiatives**

1. Overview the current curriculum, including options available within the program (e.g., discussion of the different emphases).

***Recent Curricular Trends:*** In the last five years, the number of geography majors has increased 55 percent, eight new courses were developed, and several other courses were revised. Figure 1 depicts major trends in the department during this Audit and Review period. Having these trends in mind should assist those reading this report.

The goal of the program is to provide an appropriate knowledge base in each geography course and for geography majors a broader knowledge base in the discipline. The ability to apply Geographic Information Systems (GIS) technologies and other analytical tools in addressing varying societal concerns is playing a growing role in the discipline. Given the breadth of the discipline, the department offers a diverse and dynamic array of curricular offerings, which evolve as the discipline, faculty expertise, student academic and career goals, and the preparation needed for graduate schools and the job market change. The growth in GIS technologies, for example, has required the infusion of greater technical proficiency application skills throughout the program. Along with academic preparation in a selected track in the geography major, GIS skills are increasingly important for undergraduates pursuing graduate work and gainful employment with public agencies and private firms after graduation. For this reason, recent curricular changes in the five tracks included requiring a second technical course.

Positions requiring knowledge of GIS are included in the Bureau of Labor Statistics list of the ten fastest growing occupations between 1998 and 2008. Students with GIS proficiency would be included, particularly in the number one category, *Systems Analysts*, and in the *Computer Support Specialists* category listed at number eight. Virtually every unit of government, industry and business is moving to some type of GIS data acquisition, management, display, mapping and analysis system. Preparing students for the rapidly growing and changing job market places tremendous resource demands on the program. The challenge to maintain state-of-the-art hardware and software, much of it (digitizers, color plotters, color printers, scanners, the latest GIS software) unique and specific to geography, never ends. Although the department does not offer a professionally oriented program that trains students for specific jobs, it does equip its majors with the knowledge base and skill level to compete successfully in the public and private sectors.

The department is committed to maintaining and expanding opportunities for experiential learning via field courses, travel study programs abroad, field trips, internships and undergraduate research. Of particular note is the geography internship program, which has expanded internship offerings beyond the traditional governmental and planning agencies to private industries and businesses as well. Unlike most undergraduate internships that are free to the participating agencies, all geography internships are paid. Students have the option of doing a free internship if they so desire. Internship credits and field and travel study courses in recent years have been offered typically as uncompensated overloads. For this reason, expansion in these areas will be difficult to achieve without more institutional assistance or will more frequently have to be offered as part of load.

***Tracks in Major:*** In pursuit of Bachelor of Science (BS) or Bachelor of Arts (BA) degrees in the College of Letters and Sciences, the Geography Program offers five tracks within the major. These tracks are designed to: 1) allow students to pursue their more specific intellectual interests within the broader scope of geography and 2) better prepare students for graduate school and productive employment opportunities upon graduation. The major requires a minimum of 34 credits and the five tracks, all having a common 16-credit core, are:

Tracks in Geography Major

**General**

**International/Regional**

**Physical/Environmental**

**Techniques**

**Urban/Area Development**

Depending on the track selected by the student, an appropriate group of required and elective courses build on the common core and round out the program major. A summary of the five tracks is provided below (see APRs in Appendix A).

***Geography Core:*** The 16-credit core consists of five courses: (1) *Introduction to Geography* (1 credit), (2) *Physical Geography* (5 credits), (3) *Human Geography* (3 credits), (4) *Introduction to Mapping* (3 credits), and (5) *Applied Research Methods* (4 credits). The *Introduction to Geography* course provides newly declared majors with an array of information as early as possible in their programs in order to better inform and guide their academic and career planning decisions. *Physical Geography*, *Human Geography* and *Introduction to Mapping* provide students with the needed subject matter and skill level foundation for upper level physical, human and technical geography courses respectively. *Applied Research Methods* serves as a capstone course, requires students to develop a research topic suitable for the track they are pursuing, and has students demonstrate their command of subject matter, analytical ability, and technical competency in written research paper and oral presentation formats.

***Tracks in the Geography Major:*** Building on the physical and human geography foundations and technical proficiency base established in the geography core, the tracks permit students to take a narrower array of courses to match their particular intellectual interests with a thematic area in the discipline. The tracks also allow students to shape their coursework to better serve their career aspirations. Table 1 summarizes the geography core courses and five tracks in the major. Although most geography majors pursue and graduate with BS degrees, the BA option is available in all but the Physical/Environmental track.

Table 1: Tracks in the Geography Major (BA and BS Degrees)

**General (34 credits)**

**16 credit core**

- 3 cr. regional courses (362, 363, 364, 365, 366, 368)
- 6 cr. 300-400 level systematic courses
- 3 cr. technical courses (370, 377, 440)
- 6 cr. geography electives (at least 3 cr. at 300-400 level)

**International/Regional (34 Credits)**

**16 credit core**

- 9 cr. regional courses (261, 362, 363, 364, 365, 366, 368)
- 6 cr. (332, 334, 340, 452)
- 3 cr. electives

**Techniques (34 credits)**

**16 credit core**

- 9 cr. technical courses (290, 370, 377)
- 6 cr. advanced techniques (440, 485, 496)
- 3 cr. any 300 or 400 level course

**Physical/Environmental (34 credits)**

**16 credit core (BS degree only)**

- 6-9 physical courses (300, 310, 320, 330, 450)
- 6-9 environmental courses (323, 377, 420, 452, 496)
- 3-6 cr. technical courses (290, 370, 377, 440, 450)
- (3 cr. Geol. 300 or Biol. 257 optional)

**Urban/Area Development (34 credits)**

**16 credit core**

- 6 cr. urban/area courses (340, 344, 444)
- 6 cr. techniques courses (290, 370, 377, 440)
- 3 cr. regional courses (362, 363, 364, 365, 366, 368)
- 3 cr. geography electives

<b>16</b>	<b>Introduction to Geography</b>	<b>1</b>
<b>Credit</b>	<b>Physical Geography</b>	<b>5</b>
<b>Core</b>	<b>Human Geography</b>	<b>3</b>
	<b>Introduction to Mapping</b>	<b>3</b>
	<b>Applied Research Methods</b>	<b>4</b>
	<b>Core Credits</b>	<b>16</b>

Once a student selects a track, the department suggests various minors, which may complement the major. For example, students considering planning or perhaps working for a private consulting firm that conducts planning studies often take the General geography major and the interdisciplinary Urban and Area Development minor or the Urban/Area Development track in the major and a political science or some other complementary minor. Majors selecting the Physical/Environmental track are encouraged to consider a science minor (such as Biology, Geology, or the new interdisciplinary Environmental Studies minor) and take additional science and mathematics courses. This is the one track in which a BS degree is required.

Owing to the recent growth in GIS and technical proficiencies, the Techniques track is likely to become even more popular. New majors can select any track but are advised to pursue the General track initially and concentrate on taking the core courses. As they take the core courses, which are required in all the tracks, this should provide a sounder basis for deciding which track they want to pursue. To improve student advising, students are encouraged to select a primary advisor who is more involved in offering courses in the track they select.

***Education Degrees:*** The Geography and Geology Department is involved in four majors or emphases in the College of Education leading to Bachelor of Science in Education (BSE) degrees. These majors/emphases include 1) a major in geography leading to a BSE degree, 2) a General Science-Broadfield Earth Science Emphasis, 3) a Social Studies-Broadfield Geography I Emphasis, and 4) a Social Studies-Broadfield Geography II Emphasis. The department's involvement is noted in *italics*. These required and elective courses in these majors/emphases are listed in Table 2.

Table 2: Geography Majors and Geography and Geology Emphases in Education

**Geography (BSE)**

Licensure: 42-43 credits  
 Geography Major: 34 credits  
 21 credits required: 210, 230, 250, 270, 340, 480  
 3 cr. regional course (362, 363, 364, 365, 366, 368)  
 10 cr. from Geography in consultation with advisor

**General Science--**

**Broadfield Earth Science Emphasis (BSE)**

Licensure: 40 credits  
 Major: 58 credits  
 24 credits from Earth Science courses from Physical Geography, Geology and Astronomy  
 GEOL 100, 204, 205, 300, 301, 314 thru 319, 490 thru 498, ASTR 112, 114, GEOG 210, 310, 320, 410  
 14 credits from Chemistry OR Biology OR Physics  
 20 credits from 2 groups listed below  
 Select 10 credits from Biology  
 Select 10 credits from Chemistry  
 Select 10 credits from Physics

**Social Studies--**

**Broadfield Geography I Emphasis (BSE)**

Licensure: 42-43 credits  
 Major: 54 credits  
 Geography Emphasis: 34 credits  
 15 credits geography required: 210, 230, 270, 480  
 3 cr. regional course (362, 363, 364, 365, 366, 368)  
 16 credits Geography in consultation with advisor  
 20 credits from Anthropology, Economics, History  
 Political Science, Psychology and Sociology,  
 from at least two departments

**Social Studies--**

**Broadfield Geography II Emphasis (BSE)**

Licensure: 42-43 credits  
 Major: 54 credits  
 Geography Emphasis: 22 credits  
 11 credits geography required: 210, 230, 270  
 3 cr. regional courses (362, 363, 364, 365, 366, 368)  
 8 cr. from Geography courses  
 32 credits in 3 other social sciences: Anthropology,  
 Economic, History, Political Science,  
 Psychology, and Sociology

***Fischer Scholarship:*** Of special interest to students in the College of Education, the Department of Geography and Geology administers the Fischer Scholarship Program. The scholarship fund was established through the generosity of Warren and Rose Fischer in 1978. Warren was a geography professor at UW-Whitewater from the 1920s until his retirement in the 1950s and Rose was an elementary school teacher. The scholarship serves as a strong and lasting testimony to the Fischer's dual commitment to geography and education. A number of years ago in a survey of alumni Warren was rated as one of ten outstanding professors at UW-Whitewater. Warren and Rose Fischer wanted to assist students who were pursuing majors and minors in geography and planning for careers in education to disseminate their knowledge of geography to others. In the last five years, 212 semester long scholarships were awarded totaling approximately \$140,000. Many students have scholarships renewed each semester as long as they remain in good standing and make steady progress toward their geography major or minor and degree program.

***Department Minors:*** The department administers the five minors outlined in Table 3. There are two geography minors, geology minor, and two interdisciplinary minors with substantial course input and faculty involvement from geography and geology. In the two interdisciplinary minors, the department's contributions are highlighted in *italics*.

**Department Minors**

**Geography**  
**Geography (Elementary Ed. Emphasis)**  
**Geology**

**Interdisciplinary Minors**

**Urban & Area Development**  
**Environmental Studies**

**Table 3: Department Minors**

**Geography & Geology Minors**

**Geography (23 credits)**

- 11 cr. geography core (210, 230, 270)
- 3 cr. regional course (362 thru 368)
- 3 cr. systematic course (320, 323, 332, 334, 337, 340, 344, 350)
- 6 cr. electives (at least 3 cr. 300 or 400 level)

**Geography-Elem. Ed (23 credits)**

- 14 cr. geography core (210 230, 250, 275)
- 3 cr. regional course (261, 362 thru 368)
- 3 cr. systematic course (320, 323, 332, 334, 337, 340, 344, 350)
- 3 cr. geography electives

**Geology (23 credits)**

- 21 cr. geology core (100, 204, 204, 205, 315, 316 and 318)
- 2 cr. geology electives (300, 301, 314, 317, 310, 492 or Geog. 310)

**Interdisciplinary Minors**

**Urban & Area Development (24 credits)**

- 15 cr. core (Economics 438, *Geography 344 and 350*, Political Science 446 and Sociology 352)
- 9 cr. electives from list of over 30 courses from 10 different departments

**Environmental Studies (24 credits)**

- 6 cr. core (Biology 214 and *Geography 252*)
- 6-9 cr. from physical environment courses (*Geology 300 and 301, Geography 323, 420 and 496 (Environmental Hazards), Biology 467, Chemistry 102 and 104*)
- 3-6 cr. from environment courses (*Geography 337 and 452*), Economics 471, Safety Studies 420, 457 and 484, Sociology 362)
- 6-9 cr. from technical courses (English 372, Biology 303, Mathematics 230, *Geography 377 and 475*, Safety Studies 480, or appropriate internship.

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**General Studies:** Since the department's course offerings span the natural and social sciences, geography and geology make major contributions to and are committed to the goals of General Education. Every faculty member in the department teaches General Studies' classes. It is especially important to the program that faculty do an effective job in teaching General Studies courses because very few students come to the university planning to take a geography major or geography and geology minors. Virtually all geography majors and geography and geology minors are recruited based on their favorable impression of the subject matter and effective teaching to which they were exposed in one or more General Studies courses they have taken to fulfill university requirements. In this sense, General Studies' courses are the lifeblood of the department, because majors and minors are recruited in these courses as they are exposed to the geographic perspective. Therefore, putting the very best instructors possible in such courses is the highest priority. The fact that the department, according to *Guide to Programs in Geography in the United States and Canada, 1999-2000*, has the largest number of undergraduate geography majors in the UW-System, including Madison and Milwaukee, attests to the effectiveness of the faculty in recruiting majors.

**Contributions to other Colleges and Programs:** In addition to major and minor programs and its contribution to degree programs in two colleges, the department provides a range of curricular offerings that contribute to programs conducted by other colleges and departments. For example, the *Geography of Asia* course is required in the interdisciplinary Asian Studies minor. *Human Geography* is a required course and other geography electives are optional in the various categories a student must fulfill in the interdisciplinary International Studies major. Courses such as *Human Environmental Problems* fulfill not only General Studies' requirements, but also licensure requirements for students in the College of Education. To cite but three examples, students majoring in economics, history and political science are well served by the department's *Economic Geography, Historical Geography, and Political Geography* courses. Students in the

College of Business and Economics are well served by the *Economic Geography* course, which deals extensively with geographic theories and models providing insight and applied solutions to business problems. In *Applied GIS: Applications for Business and Industry*, student can pursue the application of spatial theories and GIS problem solving at greater depths.

2. Highlight any new academic assessment initiatives you anticipate for the upcoming review period.

In addition to maintaining a diverse and up-to-date curriculum, the department is committed to offering an array of non-traditional learning opportunities, such as field courses, travel study programs, field trips, internships, and undergraduate research. The department is currently discussing and investigating the feasibility of an "International Initiative" to involve as many faculty and students as possible over the next audit and review period. The department also will be attempting to develop income-generating GIS workshops and initiating income-generating contract work to expand the scope of paid internship opportunities. Expansion of internships will be problematic, however, since all internship credits to date are offered as uncompensated overloads. Expansion and strengthening of the internship program will necessitate some internship credit being offered as part of load. To date, all supervision of internships involving faculty visiting internship agencies to develop new opportunities and check on ongoing internships involves out-of-pocket travel expenses for faculty that have not been reimbursed. Enhancing the department budget to reimburse faculty for such expenses will encourage more of this activity.

In addition, to better fund the growing needs of the program, the department needs to develop revenue-generating GIS workshops and contract work for agencies and firms in our region. Since many internships will involve some GIS components, a new Academic Staff GIS instructor/computer laboratory manager position will need to be established to expand the number of paid off-campus and in-house internships and provide supervision of the contract work and internships as part of this position's duties. The ability to offer a sufficient number and variety of income-generating workshops will also depend on this new position. The development of a GIS certificate will also call for another staff member offering relevant courses and workshops. Without this position the department will not be able to take full advantage of the space expansion and facility upgrade in the upcoming renovation and expansion of Upham Hall in the 2002-2004 biennium.

## **B. Educational Objectives and Assessment Techniques**

1. State the subject matter, cognitive development, and skill objectives for the program, indicating what students will know and be able to do upon completion of the program.

**Individual Courses:** The importance of student performance in individual courses must be recognized as the best measure of student achievement as related to the subject matter, cognitive development and skill objectives established in each course. For this reason, grades are a good quantitative and qualitative measure of the degree to which students achieve the educational objectives of individual courses. The degree to which the collection of courses students take in pursuit of the major achieves these educational objectives is more difficult to establish. The fact that about one-quarter of geography majors in recent semesters has attained overall grade point averages to make the university honor roll, indicates that these students, to the degree grades reflect such, are achieving high standards in the academic program.

Given the diverse nature of the discipline and the various tracks students can choose in the major, the department generally favors qualitative over quantitative measures to assess student

performance and program achievements. The department, therefore, places great emphasis on students applying and demonstrating their command of subject matter, use of appropriate skills, and analytical abilities. All geography courses, especially upper level geography courses and the required *Applied Research Methods* course, set high qualitative standards and assist students in reaching these standards. The crucial assessment role played by *Applied Research Methods* is highlighted and detailed below.

***Preparation for Graduate School and Careers:*** The Department of Geography and Geology prepares students for graduate school, while recognizing that many graduates will not attend graduate school. Therefore, the assessment approach preferred by the department is to determine if students can apply what they have learned and in the process convey their command of subject matter, think, write and communicate analytically, and demonstrate quantitative and technical skills in an appropriate manner. For this reason, the department faculty requires assignments and projects in individual courses that require students to effectively convey their understanding of pertinent subject matter in written and oral form. The *Applied Research Methods* core course required of all majors is especially important in this regard. In this course, each geography major must identify a geographic topic appropriate to the track he or she has selected, develop and implement a research design, collect and analyze data, prepare a research report, and deliver an oral presentation of their results. This capstone course challenges and requires all majors to demonstrate subject matter, cognitive development, technical skills, and effective written and oral communication of such. Students use the research report, in addition to other items in their student portfolios, for job interviews upon graduation, since the report and portfolio showcase their writing, analytical abilities and technical competency skills. (See further discussion of *Applied Research Methods* and student portfolios below in Section B. 2.)

***Subject Matter Objectives:*** Given the broad and diverse nature of the discipline and five different tracks geography majors may pursue, the overall subject matter objectives are broad.

1. Develop basic understanding of physical geography patterns and processes relating to landforms, soils, vegetation and climate. (5 credit Physical Geography)
2. Develop basic understanding of human geography patterns and processes relating to population, cultural attributes, human settlement, and economic and political organization. (3 credit Human Geography and other social science General Studies courses)
3. Develop a basic understanding of the physical and human geography of a particular region of the world and a basic understanding of one or more topical areas of geography. (300 level regional course and upper level systematic course requirement)

***Cognitive Development Objectives:***

1. Develop critical thinking and analytical skills, be able to integrate and synthesize knowledge and draw conclusions from complex information. (210 Physical Geography, 230 Human Geography and 480 Applied Research Methods capstone course requirement; all courses stress critical thinking skills.)

***Skill Objectives:***

1. Develop a basic understanding of how to use mathematical, computing, and mapping skills appropriate to geographic analysis and inquiry. (270 Introduction to Mapping)
  2. Demonstrate the ability to utilize mathematical, computing, and mapping skills in other courses and circumstances. (270 Introduction to Mapping, second required technical course, 480 Applied Research Methods, and other upper level courses.)
2. Describe the data collection techniques used to determine if the program has been successful in achieving the desired outcome for each objective above.

**Assessment Techniques:** The department employs a number of different data collection techniques to assess student achievement and the program's efforts and effectiveness in achieving its educational goals. The different data collection techniques will be listed and then discussed individually.

- Mid-Program Assessment of Geography Majors
- Applied Research Methods Course
- Student Portfolios
- Geography Alumni Survey
- Written and Oral Interviews with Graduating Majors
- Assessment of Geography Interns by Agencies Providing Internships
- Evaluations by Agencies Employing Geography Graduates
- Evaluations by Graduate Programs Accepting Geography Graduates
- UWW Survey of Graduating Seniors

***Mid-Program Assessment of Geography Majors:*** Periodically, the department identifies a group of majors who have completed less than half of their 34 credit major and, as a department, evaluates each student individually. In the process, faculty members are able to both offer an initial assessment of student performance and detect strengths and weaknesses in the program or overall student performance based on recurring themes and observations in the assessment process. Any major can volunteer to be evaluated as part of this assessment process. Both positive department feedback and suggested areas for improvement are then conveyed to the assessed students for their consideration by the department chair or their major faculty advisor.

For example, if faculty consensus is that a student would do well in graduate school, this is conveyed to the student and more detailed information related to the Graduate Record Exam (GRE) and other aspects of graduate school and applying to graduate schools are discussed. If faculty concur that a student is not performing to her or his potential, this is also conveyed to the student with suggestions for improvement. Students have expressed appreciation of the mid-program assessment process in the past. They are impressed that the department takes the time to focus on their progress in the program and offers suggestions as to how they might improve and planning their academic and career paths more effectively.

***Applied Research Methods Course:*** This capstone course required of all majors in their last or second to last semester is extremely important because no other single course addresses overall educational goals as effectively. Students are urged to prepare for this course well before they sign up for it. They are told that they should pin down their research topic and have it cleared by their major advisor and by the faculty member teaching the course the semester before they take the course. In this course, each student is required to:

1. Identify an appropriate research topic consistent with the major track selected;
2. Develop a research design and data gathering procedure appropriate for the project;
3. Conduct the necessary background research;
4. Conduct the necessary fieldwork;
5. Analyze data in a critical and thoughtful manner;
6. Appropriately incorporate and integrate statistical techniques and computer-based maps, figures, and graphs as part of the paper;
7. Have their final research report bound; and
8. Present their research results orally to other students and faculty.

***Student Portfolios:*** The purpose of student portfolios is first and foremost to help and challenge students to chart their academic growth and technical competency as they advance through the program. It is a way for students to assess their progress, but also serves as a way for the department and advisors to periodically review a student's progress by reviewing portfolio materials during advising sessions. The *Introduction to Geography* course introduces the importance of student portfolios as a way for student to:

1. Save examples of their work in courses that demonstrate their achievement of subject matter, cognitive development and skill objectives in the course;
2. Evaluate their intellectual development and maturity as they progress in the program by replacing older examples of their work with more recent and better examples;
3. Present their portfolio to advisors and in selected classes for comment and feedback; and
4. Display quality examples of their work for internship agencies and employers to review.

Other geography courses require geography majors to present their portfolios, have assignments related to portfolios, and make suggestions as to what items students may want to add to their portfolios. *Applied Research Methods*, in particular, stresses the portfolio, as students are nearing graduation in this course and must be preparing themselves for conveying their knowledge and skills to graduate programs and potential employers in an effective and professional manner.

***Geography Alumni Survey:*** Periodically, geography alumni are surveyed formally and asked to reflect on their program and make suggestions for maintaining and strengthening the program. More informal feedback is enlisted at regularly scheduled geography alumni picnics and other activities involving alumni. Each faculty member also maintains regular contact with a smaller number of alumni and receives pertinent feedback, which they share with colleagues.

***Written and Oral Interviews of Graduating Majors:*** All graduating seniors are asked to complete a written evaluation of the program. They may complete the survey anonymously if they so desire. They numerically rate various aspects of the program and are invited to provide written comments regarding strengths and weaknesses of the program. The chair or major advisor conducts informal face-to-face interviews with graduating seniors to elicit their opinions about the program and ways to improve the program.

***Assessment of Geography Interns by Agencies Providing Internships:*** Given the importance in the department of students being able to apply their knowledge and skills to real world issues, feedback from agencies employing geography interns is especially valuable. Since virtually all geography internships are paid and not free like many other undergraduate internships, the department is confident that agencies are very diligent in filling out the intern evaluation form, since interns are in effect part-time or full-time employees for the duration of the internship.

***Evaluations by Agencies Employing Geography Graduates:*** Such evaluations are especially relevant and more typically ascertained in those years shortly after a student graduates. The best evaluation is when agencies, upon experiencing the contributions made by our graduates, seek and hire new graduates.

***Evaluations by Graduate Programs Accepting Geography Graduates:*** Some students demonstrating high academic performance levels proceed to graduate school. However, many such students for a host of reasons do not choose to attend graduate school. By the same token, the department is impressed with the number of majors over the years who were good, but not necessarily outstanding, undergraduate students, who do go on to graduate school, do very well, and are highly respected professionals in their career fields. The best evaluation is when graduate schools accepting our students', noting their excellent training and performance, request that faculty encourage more geography graduates to consider their graduate programs.

***UWW Survey of Graduating Seniors:*** The university conducted a survey of graduating seniors, which it provided to the department. Eight geography majors and two students with the interdisciplinary Urban and Area Development minor completed this survey.

3. Explain how individual courses are related to the student outcomes that are part of the program's assessment plan.

Given the existence of five tracks in the major and the wide array of minors from which a student can select, individual courses and the selection of courses vary considerably. Appendix B provides a list of individual courses.

4. List any dual-level courses and indicate how course content, pedagogical processes, assignments, etc. create different educational experiences for graduate and undergraduate students. Appendix B1 provides a list of individual courses.

Occasionally, the department will offer dual-level courses. Whereas a good term paper may be acceptable from undergraduates in the course, graduate students are expected to produce and longer and in-depth research paper in which fieldwork or original research builds on traditional library research. Graduate students usually have additional readings and are expected to participate more effectively in class discussion and seminar formats.

### **C. Assessment Data**

1. Summarize the assessment data gathered during the review period. If it is helpful to include data from previous years for comparison purposes, then do so. (Use tables where necessary)

***Mid-Program Assessment of Geography Majors:*** In conducting assessments of individual students in the mid-program review process, individual evaluations by faculty are generally similar. The department arrives at qualitative and not quantitative assessments during this process and only conveys observations and suggestions to individual students when there is a consensus among faculty possessing the greatest direct knowledge of student performance in their classes. In reviewing a number of students in a systematic fashion and discussing each student with the entire faculty present, recurring observations and concerns emerge; concerns which require faculty to reflect on current strengths and possible weaknesses in the program and where improvements may be needed. For example, a common observation of many majors is that they are very quiet and do not actively participate in classes to the degree they should. As a

result, each faculty member is making additional efforts to encourage more student participation in classroom discussion and requiring more oral presentations of research results and reports on internship and other non-traditional learning experiences in classes.

**Applied Research Methods Course:** The written research paper and oral report in this course requires students to demonstrate demand of subject matter, effectively demonstrate their analytical abilities, and utilize and integrate GIS and other technical competency skills. Four examples of research reports completed in this course are included in Appendix J. The one by Dean Munn, entitled "Bicycle and Pedestrian Master Plan, Janesville, Wisconsin," was purchased by the City of Janesville for \$2,000 and Dean was employed the summer after he graduated, while he awaited entering graduate school at Indiana University. Kurt Wheeler's paper, "The Effect of Land Use on Runoff in the Greenbelt Drainage Area of Janesville, Wisconsin," focuses on a resource and environmental impact issue of relevance to many localities and demonstrates the integration of GIS, air photos, graphs and other analytical tools to address the research question. Tom Young's paper, "Wisconsin Elections: A Geographic Analysis," employs GIS to analyze voting patterns over a 15-year period and their implications for the 1998 election of governor. Trent Blank's research paper for the course, entitled "The Industrialization of Smaller Cities in Wisconsin and Its Resulting Influence on Urban Heat Island Intensities," was turned into a co-authored article with Dr. David Travis. The article has recently been published in *The Wisconsin Geographer*, 1999-2000. The research paper is also part of the final student portfolio, which a student then uses to showcase their abilities in applying to graduate schools and/or seeking employment after graduation.

**Student Portfolios:** Two examples of student portfolios are included in Appendix K. Also included are comments by a faculty member after reviewing a portfolio submitted by a student early in his senior year. The final student portfolio, along with the *Applied Research Methods* paper, should prove useful for students when seeking employment or during visits to graduate programs.

**Geography Alumni Survey:** The most current geography alumni survey results indicate that past graduates, upon reflection on their undergraduate program, rate the program favorably overall. Table 4 depicts tabulations from the last survey. Ratings of strongly agree and agree are most typical. The one rating close to neutral relates to whether additional writing projects would be beneficial.

<b>TABLE 4. GEOGRAPHY ALUMNI SURVEY RESULTS</b>	
<b>QUESTIONS</b>	<b>RATING</b>
<b>SKILLS AND KNOWLEDGE BENEFICIAL IN PURSUIT OF A CAREER.</b>	
<b>2.1</b>	
<b>ADDITIONAL WRITING PROJECTS WOULD HAVE BEEN BENEFICIAL.</b>	
<b>2.9</b>	
<b>FACULTY HELPFUL IN SELECTING A CAREER OR GRADUATE PROGRAM.</b>	
<b>2.2</b>	

**ADVISING IN DEPARTMENT WAS VERY GOOD.**

**2.1**

**UPPER DIVISION COURSES WERE ACADEMICALLY CHALLENGING.**

**2.2**

**DID MAJOR SATISFY YOUR GOALS AND OBJECTIVES.**

**2.0**

**THE CORE COURSES REQUIRED IN MAJOR WERE APPROPRIATE.**

**1.7**

**I WOULD STILL SELECT GEOGRAPHY AS A MAJOR.**

**2.0**

**(1) STRONGLY AGREE (2) AGREE (3) NEUTRAL (4) DISAGREE (5) STRONGLY DISAGREE**

*Written and Oral Interviews of Graduating Majors:* The most recent ratings by graduating seniors in 1999-2000 indicate that the already favorable ratings of the department have improved. The most recent ratings are generally even more favorable than the running average ratings from previous years (Table 5). The most recent ratings have moved closer to the strongly agree rating in most instances. Regarding the previous 1995-96 Audit and Review's specific suggestion, "continue to provide more information about career and graduate school opportunities for majors," the generally favorable and recently improving ratings for questions 7 and 8 indicate that the department is making progress in these areas.

**TABLE 5. GRADUATING GEOGRAPHY MAJOR SURVEY RESULTS.  
1999-2000 COMPARED WITH AVERAGE FROM PREVIOUS YEARS**

<b>PREVIOUS AVERAGE</b>	<b>QUESTION</b>	<b>1999-2000 AVERAGE</b>
<b>1.87</b>	<b>AVERAGE RATING FOR ALL TEN QUESTIONS</b>	<b>1.56 *</b>
<b>1.70</b>	<b>1) THE DEPARTMENT IS CONCERNED ABOUT MY PERSONAL GROWTH AND ACADEMIC PROGRESS.</b>	<b>1.56 *</b>
<b>2.33</b>	<b>2) THE DEPARTMENT WAS SENSITIVE TO GENDER ISSUES.</b>	<b>2.00 *</b>
<b>1.52</b>	<b>3) THE DEPARTMENT PROVIDED A SUPPORTIVE ENVIRONMENT FOR LEARNING.</b>	<b>1.13 *</b>
<b>1.52</b>	<b>4) THE DEPARTMENT'S FACULTY ARE DEDICATED TEACHERS.</b>	<b>1.27 *</b>

152 5) THE DEPARTMENT'S FACULTY WERE READILY AVAILABLE TO  
145 \*

STUDENTS OUTSIDE THE CLASSROOM.

243 6) THE DEPARTMENT PROVIDED A RANGE OF STUDENT ORIENTED  
200 \*

ACTIVITIES OUTSIDE THE CLASSROOM FOR GEOGRAPHY  
MAJORS.

219 7) THE DEPARTMENT INFORMED MAJORS OF GRADUATE  
SCHOOL 167 \*

OPPORTUNITIES.

239 8) THE DEPARTMENT PROVIDED USEFUL INFORMATION TO  
MAJORS 132 \*

SEEKING EMPLOYMENT AFTER GRADUATION.

157 9) I WOULD URGE FRIENDS OF MINE TO CONSIDER A  
GEOGRAPHY 154 \*

MAJOR AT UW-WHITEWATER.

130 10) I WOULD LIKE TO MAINTAIN SOME CONTACT WITH THE  
154 -

DEPARTMENT IN THE YEARS TO COME.

(1) STRONGLY AGREE (2) AGREE (3) NEUTRAL (4) DISAGREE (5)  
STRONGLY DISAGREE

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The even more favorable ratings regarding the department's concern with personal growth and academic progress, its sensitivity to gender issues, its dedicated faculty and staff, and in providing more student-oriented activities are also of note. In fact, some of the most recent numerical ratings are so favorable it is difficult to imagine how they might be improved upon in future ratings. *The department is especially pleased with the very favorable rating for providing a supportive learning environment (Item 3), since the faculty believes such a climate is so important in achieving the educational goals of the department.*

Led by Dr. Howard Botts' diligent efforts in preparing students for and assisting many of them in securing paid internships and excellent employment positions after graduation, the department's emphasis on applying geographic knowledge and technical skills to real world issues and problem solving is appreciated by students. The email message below from a recent graduate indicating appreciation in the job search area is testimony to the department's endeavors in this area.

"To All,

Well, I signed with Kemper Insurance for \$42,000 and a \$2000 relocation bonus. I'm so happy, I could just sh#!. Thank you all for your help and encouragement. You each know the contribution you have made to my experience at Whitewater. I am UWW's biggest fan! I plan on coming to Whitewater Mon or Tues to drop off my project for the file.

Euphorically,

Kurt Wheeler"

Despite periodic geography nights, bulletin board postings, and other special efforts sponsored by the department to convey pertinent information to majors, written evaluations and oral interviews of graduating seniors revealed that the department was not providing them with enough information early in their program about the tracks in the major, internships, work opportunities in the department, career opportunities after graduation, and other special opportunities. This feedback from students was one of the reasons for developing the new 1 credit *Introduction to Geography* course so that such information might be conveyed more systematically to each new major early in their program.

**Assessment of Geography Interns by Agencies Providing Internships:** Various public and private agencies have employed paid geography interns and evaluated their performance in favorable terms. Average evaluations in Table 6 indicate that most geography interns performed above average regarding their job performance and contributions to the agencies. Since virtually all geography interns are paid, the department is certain that agencies evaluate performance more critically than they might if the interns were free.

<u>Criteria</u>	<u>Average Rating</u>
<b>9 questions rating quality of intern's job performance</b>	<b>1.9</b>
<b>These questions deal with overall knowledge, following instructions, showing initiative, working with staff, performing routine tasks, working with minimal supervision, and professional demeanor.</b>	
<b>9 questions rating quality of intern's overall contributions</b>	<b>1.8</b>
<b>These questions deal with quality of work, ability to work with others, adapting to various tasks, understanding instructions, working without supervision, dependability, punctuality, writing ability, and cartographic ability.</b>	
<b>(1) exceptional (2) above average (3) average (4) below average (5) poor</b>	

**Evaluations by Agencies Employing Geography Graduates:** The fact that certain agencies are growing increasingly dependent on geography graduates speaks to the quality of the program. For example, Kemper Insurance hired a geography major, Gina Zagrodnick, several years ago to head up the company's GIS section. As Gina has moved up even higher in the organization, Kurt Wheeler, a recent geography graduate, was hired by Kemper Insurance because of his GIS capabilities. When Kurt accepted a position in his hometown, Janesville, as the head GIS Manager/Planner for Rock County, Keith Lawler, another recent geography graduate, who had been employed by another firm, was recruited to fill the GIS position at Kemper Insurance. This trend indicates one insurance company's satisfaction with the caliber of UW-Whitewater geography graduates.

Owing to the department's excellent reputation, Thompson Associates, a leading location analysis and marketing consulting firm, came to campus specifically to interview geography seniors approaching graduation. Thompson's traditionally goes to graduate programs in geography to recruit. The fact that they came to UW-Whitewater speaks to their evaluation of the geography program in preparing students with the academic background and technical

competencies to succeed in their corporate environment. Three spring 2000 graduates, Kyle Bingham, Jim Finn and Ryan Shulander, are now working for Thompson's in Ann Arbor.

***Evaluation of Graduate Programs:*** The department has received favorable review of its graduates from various graduate programs, which have accepted our majors in the past. Most recently, chairs and faculty of the University of Northern Iowa, University of North Carolina--Charlotte, University of Akron, East Carolina University, and UW-Milwaukee have expressed their positive assessment of UW-Whitewater geography graduates. They have requested that the department encourage other geography graduates to apply to their programs. For example, Patricia Stadelman, a double major in business and geography, received the prestigious Kmart Fellowship this fall in pursuit of her master's degree in geography and the University of North Carolina-Charlotte.

***UWW Survey of Graduating Seniors:*** Since only eight geography majors completed the university survey, it is difficult to draw firm conclusions from this survey. On a seven-point scale with seven being very well prepared and one being very poorly prepared, average ratings ranged from 5.0 to 6.3 on the eighteen survey items indicating the extent to which UW-Whitewater had prepared them in these areas. The relevance of this survey to the geography program is also unclear since many questions involve the broader university experience. However, the highest rating (6.3) was on item 6, "ability to enthusiastically enjoy your major." This rating is consistent with the high graduating geography senior ratings of the program.

#### **D. Program Improvement Resulting from Assessment Efforts**

1. Highlight some of the important changes to the curriculum, the assessment objectives, and/or the data collection techniques/processes that have occurred during the review period. Make sure to link the changes to the data collected during the review period.

***Curriculum Changes:*** A combination of program assessments by faculty, geography graduates, geography alumni, agencies employing geography interns, and employers of geography graduates contributed to the curricular changes and modifications discussed below. However, the professional knowledge and judgment of geography and geology faculty plays the largest role in determining curricular priorities. The importance of students being able to apply their knowledge and skills, identified in Section B (1) above, also plays a significant role in recent curricular changes. Since the last audit and review report, the major curricular changes and program improvements include:

1. development of a new 1 credit *Introduction to Geography* course;
2. revision of 4 credit *Cartography* to 3 credit *Introduction to Mapping*; 3 credit *Computer Mapping and Analysis* to 3 credit *Geographic Information Systems*; and 3 credit *Remote Sensing and Spatial Analysis* to 3 credit *Remote Sensing of the Environment*;
3. addition of new courses--290 *Spatial Analysis*, 300 *Soil Science*, 330 *Biogeography*, 420 *Human and Climate Interactions*, 440 *Applied GIS: Applications for Business and Industry*, 450 *Advanced Methods in Physical Geography*--contribute to a broader program array;
4. revision of all five tracks in the geography major, in particular the addition of a second technical competency course;
5. greater emphasis on non-traditional learning opportunities; and

6. participation in and administration of new interdisciplinary Environmental Studies minor.

**1. Development of 1 credit Introduction to Geography course:** Written program evaluations and oral interviews with graduating seniors and geography faculty concern regarding the effectiveness with which certain program information was being dispensed by the department led to the establishment of this new one credit course. Despite the department's efforts to provide pertinent information about program options and opportunities via "Geography Nights," handouts, bulletin board announcements, email messages, and announcements in classes, interviews with graduating seniors revealed they did not think they received enough information early in their program. This 1 credit course is the department's formal attempt to provide as much information about faculty, tracks, minors, internships, career possibilities, and other opportunities right after a person declares a geography major so that they will have better and more complete information on which to base their academic decisions and career planning.

**2. Revision of 4 credit Cartography to 3 credit Introduction to Mapping:** Since the department decided to require a second technical course in all five tracks in the major, it dropped the introductory technical course from 4 to 3 credits and changed the name from Cartography to *Introduction to Mapping*. This also permitted adding the new 1 credit *Introduction to Geography* without increase the core geography credits or credits in the major. *Computer Mapping and Analysis* was revised and renamed *Geographic Information Systems (GIS)*, because basic GIS skills are requisite for academic success in many upper level courses, especially those emphasizing applied geography. *Remote Sensing and Spatial Analysis* was revised and renamed *Remote Sensing of the Environment*, since a new Spatial Analysis course was developed and in order to better reflect the content of the course.

2. **New Courses:** *290 Spatial Analysis*. A course emphasizing quantitative methods and spatial analysis techniques was needed to strengthen the major and better prepare geography graduates' analytical skills for graduate school and the job market. *300 Soil Science*. This course further strengthens the Physical/Environmental track in the major and provides a fine elective course for the new interdisciplinary Environmental Studies minor. *330 Biogeography*. This course further strengthens the Physical/Environmental track in the major and provides a fine elective course for the new interdisciplinary Environmental Studies minor. It is also a desirable elective course for biology majors. *420 Human and Climate Interactions*. This course builds on the *320 Meteorology and Climate* course and strengthens the Physical/Environmental track in the major. *440 Applied GIS: Applications for Business and Industry*. This course builds on the applied aspects of *340 Economic Geography* and strengthens the major, especially the Techniques and Urban/Area Development tracks. In this course students will produce some excellent and professional quality examples for their portfolios. *450 Advanced Methods in Physical Geography*. This course provides students with data collection techniques utilized by physical geographers, familiarizes them with common field monitoring and testing equipment, exposes them to data analysis methods, and has students integrate their analysis of a local landscape in a research report. Anne Miller, a student in this course submitted a field report, which was selected as the outstanding example of student writing in the College of Letters and Sciences last year. *452 Cultural Ecology and Sustainable Development*. This course was developed and taught by a faculty member no longer employed by the university; however, an anticipated new hire is likely to have the expertise to teach this course. It is an excellent offering for the Physical/Environmental track and interdisciplinary Environmental Studies minor.

**4. Revision of five tracks in the geography major:** The revisions included adding new courses and entailed a strengthening of required and elective courses in each track. Given the importance

of technical competency for graduate school and real world employment, the addition of a second technique or applied course beyond 270 *Introduction to Mapping* is another substantial improvement in each track.

**5. Greater emphasis on non-traditional learning opportunities:** The department has maintained and expanded the number and range of field and travel study courses, expanded field trips in individual courses, expanded undergraduate research opportunities, and increased the number of internships. The department's efforts in developing and overseeing internships are especially commendable, since all internships have been in addition to load and not part of faculty load. Clearly, the department's ability to extend internships is hampered by this situation, since successful internships require considerable faculty effort and time. The department does not have a travel budget to reimburse faculty members supervising internships at various agencies; such travel has involved thousands of miles since the last audit and review and out-of-pocket travel expenses for involved faculty. Since several geography faculty routinely teach uncompensated credit loads in excess of 12 credits, and even more contact hours with physical geography and computer labs, there are limits to faculty commitment in sustaining and adding to non-traditional learning opportunities and the internship program. For example, during the coming Spring 2001 semester, three geographers will be teaching 13 credit loads and three will have 14 or more contact hours. When one considers that Internship in Geography and Independent Study credits are not counted as part of load, it is obvious that geography faculty members are stretched to the limit and frequently handling loads in excess of 12 credits.

**6. Participation in and administration of new interdisciplinary Environmental Studies minor:** Geography faculty, in collaboration with other science and social science faculty, was instrumental in proposing this new interdisciplinary minor. The department was also selected as the department to house and administer this new program. If necessary resources can be obtained, the department is supportive of establishing an interdisciplinary Environmental Studies major.

3. Indicate how the program has responded to recommendations relevant to assessment from the most recent Audit and Review Evaluation Report.

**Specific Actions Required** for Geography in 1995-96 Audit and Review:

- **Assess the viability of the emphases within the major in the spring of 1998.**

The growth in the number of majors (Table 7), a 55 percent increase between fall 1995 and fall 2000, and shifts toward various tracks has alleviated much of the concern expressed by the Audit and Review process in 1995-96. It is the judgment of the faculty that the availability of the five tracks in the major has played some role in contributing to the increase in the number of majors during a time when university enrollment has not increased owing to enrollment management. UW-Whitewater Department of Geography and Geology has the largest number of undergraduate geography majors in the UW System, including Madison and Milwaukee, according to *the Guide to Programs in Geography in the United States and Canada, 1999-2000*. The tracks more effectively communicate the range of intellectual interests and career paths available to students in geography. They also better inform non-geographers of the range of subject matter and career paths accommodated within such a diverse discipline.

**Table 7: Number of Geography and Geology Majors  
by Tracks and Emphases**

<u>Tracks and Emphases in Major</u>	<u>Fall 95</u>	<u>Fall 99</u>	<u>Fall 2000</u>
GEOGRAPHY: GENERAL	30	37	49
GEOGRAPHY: INTERNATIONAL/REGIONAL	3	2	2
GEOGRAPHY: PHYSICAL/ENVIRONMENTAL	23	35	25
GEOGRAPHY: TECHNIQUES	1	12	24
GEOGRAPHY URBAN & AREA DEVELOPMENT	15	15	13
BROADFIELD EARTH SCIENCE	4	9	7
GEOGRAPHY EDUCATION	5	1	3
SOCIAL STUDIES: GEOGRAPHY I	1	2	2
SOCIAL STUDIES: GEOGRAPHY II	1	3	1
<u>GEOGRAPHY as 2<sup>nd</sup> Major</u>		6	3
ALL GEOGRAPHY MAJORS	Total 83	122	129

Of the five tracks in the major, only the International/Regional (IR) track has a very small number of majors. The geography faculty does not view low enrollments in one or two tracks as an inherent problem. The courses required for the IR track will be offered whether the track exists or not because these courses are also sought by students in the General track as well as other tracks and students in other programs. If the IR track were utilizing staffing, facilities and equipment resources that were not benefiting other tracks and program goals, there would be reason to be concerned about this low enrollment, but this is not the case. In addition, even though very few majors have selected the IR track, several excellent students have selected and pursued this track in recent years. New and replacement hires anticipated in the coming years are likely to include faculty members with systematic and regional expertise that will contribute to strengthening this and other tracks. Just as the more recent tenure track hires have served to maintain and strengthen the Physical/Environmental track and more recently the Techniques track, future hires are likely to strengthen the other tracks, including International/Regional. All five tracks should be continued. The department is also considering an International Initiative, which, if implemented, is likely to lead to more majors selecting the IR track.

The number of minors in the department has grown more slowly since the last review and is provided in Table 8. Of particular note are the 30 minors in the new interdisciplinary Environmental Studies minor. The recent tenure track hire in Geology, after two years of temporary academic staff status, is expected to address the decline in the number of geology minors. The increase in the number of interdisciplinary Urban and Area Development (UAD) minors addresses, in part, a concern raised in the last Audit and Review about the small number of minors. This minor is another example of a program in which the small number of minors should not be a major concern because all of the core and elective courses in the minor are offered to serve programs in other departments and other educational goal and not this minor in particular. The Audit and Review Committee should understand that it would be necessary and even more time consuming to devise individualized UAD minors to address this curricular need if this minor did not exist. This minor should be continued.

**Table 8: Geography, Geology and Interdisciplinary Minors in Department**

<u>Emphases in Minor</u>	<u>Fall 95</u>	<u>Fall 99</u>	<u>Fall 2000</u>
Environmental Studies (NEW) (interdisciplinary)			30
Geography Elementary Education		8	9

Geography		43	16	13
Urban and Area Development (interdisciplinary)		7	20	17
Geology		15	9	7
Second Minor			1	1
GEOGRAPHY & GEOLOGY MINORS	Total	65	54	77

- ***Work with the college dean to modernize classrooms over the next four years.***

Much progress has been made in this endeavor. By working with the Dean of Letters and Sciences, the three major classrooms utilized by geography faculty, which must have state-of-the-art audiovisual capability for effective geographic instruction, have been upgraded and are very appropriately equipped to incorporate sophisticated technologies as part of instruction. In addition, the Dean's office assisted with the purchase of twenty new 800Mhz computers for the cartography/GIS lab, which is essential to maintain state-of-the-art level of instruction. A new computer and overhead projection system for a classroom (Upham 205) was installed in summer, 2000. The classroom (Upham 215) has a computer and overhead projection system a year and a half old, and the classroom (Upham 217) has a new computer and overhead projector. All three classrooms have slide projectors mounted in the back of the room for slide presentations, which are frequently used by geography faculty in both physical and human geography courses.

- ***Work with the college dean to attain appropriate service and supply funding and space for research and storage by July 1, 1997.***

Although the space for research and storage has yet to be resolved, the planned expansion of Upham Hall in the 2001-2003 biennium should address these concerns in a very adequate fashion. The University's and Dean's efforts to secure funding to employ more geography majors with the requisite computer-based skills, will greatly assist the department in supervising computer and teaching/research laboratories and thus strengthen the level of assistance provided to faculty and students by the department. If this student funding is continued in future years, it will favorably impact the department, especially in keeping computer laboratories open longer hours for student use, but under appropriate supervision and security arrangements. However, full utilization of the new facilities once completed will require hiring an Academic Staff Teaching/Computer Laboratory Manager position. This position is also needed to reduce the undue burden on the Program Assistant.

The Dean's office did augment the department's service and supply budget to provide some temporary relief; however, the unusual and growing costs of a dynamic geography/geology program make this a remaining area of concern. Table 9 compares Geography at UW-Whitewater with other UW System schools. The department is not as well funded as at other UW System schools, particularly in service and supply and student help budgets. The service and supply budget appears about \$5,000 under that of comparable programs in the UW System with even fewer majors. Notice also that two departments serving a smaller number of students have substantial LTE support as well. The duties and expectations of the Program Assistant are being stretched to an unreasonable degree. Additional LTE support should be considered, at least when the Upham Hall building expansion is completed. The periodic and important financial assistance from the Dean's office in Letters and Sciences is not included in Table 9 because there is no way of determining similar, non-regular budgetary sources of revenue for other geography programs in the UW System.

**Table 9: FTE, S&S, Student Help and LTE Budgets Figures for Other Geography Programs and UW-Whitewater Obtained from Online Red Book**

<b>School</b>	<b>FTE</b>	<b>S&amp;S</b>	<b>Student Help</b>	<b>LTE</b>	<b>Majors*</b>
<b>WHITEWATER</b>	<b>8.5</b>	<b>\$12,000</b>	<b>400</b>		<b>114</b>
<b>Eau Claire</b>	<b>9.0</b>	<b>\$16,950</b>	<b>\$6,270</b>	<b>\$5,000</b>	<b>90</b>
<b>La Crosse</b>	<b>10.0</b>	<b>\$21,000</b>	<b>\$16,500</b>		<b>64</b>
<b>Madison</b>					<b>99</b>
<b>Milwaukee</b>					<b>56</b>
<b>Oshkosh</b>	<b>10.5</b>	<b>\$16,580</b>	<b>\$2,200</b>		<b>82</b>
<b>Platteville</b>	<b>6.0</b>				<b>16</b>
<b>River Falls</b>	<b>4.0</b>	<b>\$15,193</b>	<b>217</b>		<b>30</b>
<b>Stevens Point</b>	<b>10.0</b>	<b>\$34,522</b>	<b>\$7,737</b>	<b>\$3,000</b>	<b>80</b>

\* Source: *Guide to Programs in Geography in the United States and Canada, 1999-2000.*

*Specific Actions Suggested* by 1995-96 Audit and Review.

- *Continue to increase the diversity of the faculty and staff as positions become available throughout the next five years.*

Recent tenure track searches have not resulted in increasing the diversity of the faculty and staff. In one instance, the top female candidate was not available once the department was in a position to interview and make an offer. Women occupied two one-year academic staff positions in recent years, Elaine Hanford in geology and Samantha Kaplan in geography.

- *Continue to provide more information about career and graduate school opportunities for majors over the next five years.*

The 1 credit *Introduction to Geography* was designed, in part, to address this concern, since it strives to provide pertinent information as early in a student's program as possible. For example, several of the classes in this introductory course discuss careers and graduate school opportunities and the paths that students may want to pursue. At least once in year in the last several years, one or more geography faculty have accompanied interested students to graduate programs at nearby schools, Northern Illinois University and UW-Milwaukee, for presentations by administrators and faculty at those campuses. Dr. Howard Botts, with his national reputation as an applied GIS expert, has been especially instrumental in preparing and assisting geography graduates in securing excellent positions after graduation. Improved ratings by graduating geography majors indicate that progress is being made. (See Table 5 on page 12)

*Specific Actions Required* for interdisciplinary Urban and Area Development Minor in 1995-96 Audit and Review:

- *Develop an assessment plan by December, 1996 for Urban and Area Development Minor*

- ***Develop a plan to revise, administer, and market the Urban and Area Development Minor by June, 1997***

Given the effort devoted to addressing the specific actions relating to the much larger and rapidly growing Geography Program and some special circumstances relative to the interdisciplinary Urban and Area Development (UAD) minor, not as much attention has been devoted to this relatively small interdisciplinary minor. Two other factors postponed any major revision of this minor. First, several faculty teaching core courses in this minor (faculty from Economics, Geography and Political Science) have either retired recently or have announced their retirement. Secondly, the Department of Economics was evaluating and considering revisions in its program and its commitment to its core course in the UAD minor, *Urban Economics*. The *Urban Economics* course has been revised and is now titled *Urban, Regional and Transportation Economics*. The faculty member in Political Science, who had been teaching *Politics of the Metropolis*, another required core course, has announced his retirement. Owing to other curricular pressures, Sociology has not been able in recent semesters to offer its required core course, *Urban Sociology*, as frequently as it once did. For these reasons, the plan to assess, revise, administer and market this minor, as suggested in the last Audit and Review, was postponed. Now that many of these key staffing and program issues relative to this minor have been addressed, revisions are being proposed and will be submitted for curriculum approval during 2000-2001. The proposed changes in the UAD minor, still in progress, are provided in Appendix C. Assessment, administration and marketing will also be addressed.

Several program weaknesses in the UAD minor identified in the previous review, specifically the small number of minors and graduates, have been partially addressed. Between 1995 and 2000 the number of minors increased from 7 to 17. This minor has and probably never will attract a large number of students. The Audit and Review Committee should understand that, if such a minor is eliminated because of the small number of minors, students will be devising Urban and Area Development individualized minors. This will use many of the same courses and consume even more faculty time and resources to design each of these individualized minors on a case by case basis.

#### **E. Information Shared with Constituencies**

1. Discuss how the assessment information has been shared with important constituencies, including students, staff, advisory boards, etc. In particular, indicate systematic efforts--e.g. regularly scheduled orientation meetings, departmental newsletters, etc.

The faculty considered the assessment, including program strengths, program weaknesses, specific actions required and specific actions suggested stemming from the last Audit and Review, 1995-96. Although the strengths identified outweighed the weaknesses, the faculty focused on addressing the weaknesses and recommendations. As noted throughout Section D, the department has addressed virtually every concern relating to the geography program. In addition to import curricular changes addressing important concerns, in most semesters the department hosts a "Geography Night" or some other activity in an effort to keep students abreast of pertinent matters and upcoming issues and respond to student questions and concerns. Printed check sheets, 4-year anticipated course offering schedule, and other pertinent materials are emailed to majors, sent via post, posted on bulletin boards, available upon request in the department office, and/or announced in all geography classes. The department is initiating a major improvement and update schedule for its homepage, which when completed will provide much more relevant information about many aspects of the program than is currently the case.

A regular newsletter has been sent to geography alumni and available to geography majors in the last four years, announcing important program changes and activities relating to faculty and students. Alumni are encouraged to provide announcements of potential interest for the newsletter and update their career and personal circumstances. Alumni often visit or are invited back to campus to share their reflections on their undergraduate days and careers with faculty and students. Special dinners and panel sessions are offered periodically to recognize student achievement and provide special forums for academic and career planning.

## **I. Strategic Purposes and Performance**

### **A. Centrality**

1. Describe the centrality of program to the mission and strategic plan of the University of Wisconsin-Whitewater.

The Department of Geography and Geology contributes to the select mission of UW-Whitewater by offering "an extensive range of undergraduate programs and degrees" and encouraging "scholarly activity, including research, scholarship and creative endeavor, that supports its programs." Geography is the *only* discipline on campus, for example, that contributes courses to both the natural science and social science categories of General Studies. Therefore, courses and faculty expertise in the department contribute to the advancement of knowledge in both the physical and social sciences. The fact that geography spans the physical and human dimensions of environmental issues is why the department was selected to coordinate the new interdisciplinary Environmental Studies minor and also explains its heavy involvement in ongoing efforts to establish an interdisciplinary Environmental Studies major.

2. Explain the relationship of the program to other programs at the University

In addition to supporting its growing number of majors in five different tracks, geography courses fulfill curricular needs, including certification requirements, in the College of Education, International Studies, the Asian Studies minor, and interdisciplinary minors in Urban and Area Development and now Environmental Studies. The department also coordinates and administers these two interdisciplinary minors. The department offers four majors or emphases satisfying BSE requirements in the College of Education and administers the Fischer Scholarship program assisting students pursuing education degrees and majors or minors in geography. *Human Environmental Problems*, for example, satisfies a certification requirement in the College of Education. Course work in the department, such as *Economic Geography* and *Applied GIS: Applications for Business and Industry*, are excellent electives for students pursuing degrees in the College of Business and Economics and have developed a fine reputation for students who have taken them. *Historical Geography* and *Political Geography* are just two examples of courses that complement programs in the History and Political Science departments. A significant number of geography majors initially pursued degrees in business but have switched to geography. Many of these students and take one of the Pre-professional Business minors available to students in the College of Letters and Sciences.

### **B. Goals and Objectives**

1. Describe the current (non-assessment) goals and objectives of the program, plus any stated mission for the program itself.

The department has been pursuing goals, most recently articulated in Chancellor Miller's Goals, related to creating international learning opportunities and experiential learning experiences for students. Via field courses, travel study opportunities, paid internships with public agencies and private businesses, field trips, and undergraduate research, department faculty have worked to expand the range of opportunities for student learning outside the traditional classroom setting.

2. Summarize the progress in fulfilling any stated goals and objectives for the program beyond the assessment program. Explain failure to fulfill specific goals and objectives.

A field course to a region within the United States and one to the borderlands between the U.S. and Mexico has been conducted each spring semester in the last five years. Two-week travel study opportunities to a region of Europe have been available the last five years. A travel study course to Europe is being offered for geography majors during the Spring 2001 semester. A special week travel study program to Hawaii to attend the national conference of the Association of American Geographers was provided for geography majors in 1999. The number and range of paid internship and other paid work opportunities for geography majors has expanded through the diligent above load efforts of faculty. Whereas internships with public agencies and governmental offices continue, the expansion of internship opportunities in firms operating in the private market and corporate world has been notable.

3. Describe how the program contributes to meeting specific state and societal needs.

Broadly trained geography graduates with technical skills address many diverse state and societal needs. Graduates go into planning and administrative positions in public agencies throughout the state and southeastern Wisconsin. Increasingly, recent graduates have been gravitating to the private sector, where GIS skills in particular are in high demand. Since employees with GIS skills has been identified as one of the fastest growing employment areas in the next decade, geography graduates will address need in the labor market.

4. Explain any changes in goals and objectives that have occurred since the previous audit and review, indicating how the program has responded to the recommendations listed in the previous audit and review report. Refer to Appendix C as necessary.

### **C. Trend Data**

1. Respond to the following data for the program:
  - a. Number of geography majors enrolled each fall for each of the past five years.

The number of geography majors in Table 11 has increased from 77 to 114 (83 to 122 by Registrar's Office fall major curriculum lists) from fall 1995 to fall 1999, for an average of 94 (99) each of the five years. It also represents a 48 percent increase (according to the University Handbook figures) and 55 percent increase by the Registrar's Office fall counts. The increase over this period has been quite steady and has moved geography from the 27<sup>th</sup> to 21<sup>st</sup> largest major on campus. Table 7 (Section I. D (2), page 17) provides a finer and slightly altered breakdown of majors. It also adds eight other geography majors to the 114 indicated in Table 11. The growth in the geography major in light of the level overall enrollment of the university owing to enrollment management is impressive. Increasing interest in geography, spurred by effective classroom instruction and a faculty ready to work with students inside and outside the classroom, account for this impressive growth. UW-Whitewater has the largest number of undergraduate geography majors in the UW-System, including Madison and Milwaukee.

**Table 11: Geography Major (BA, BS, BSE)**

	<u>94-95</u>	<u>95-96</u>	<u>96-97</u>	<u>97-98</u>	<u>98-99</u>	<u>99-00</u>	<u>00-01</u>
<b>Fall Enrollment*</b>	-	77*	90*	92*	98*	114*	122
<b>Degrees Granted</b>	29	20	29	35	26		
<b>Average Credit to Degree</b>	128	131	129				

\* These numbers are slightly lower than the numbers calculated from fall major curriculum lists provided by Registrar's Office that also include second majors and several education programs that entail the equivalent of a geography major.

b. Number of degrees granted each year for the past five years.

In Table 11 over this period, the department averaged 28 geography graduates each year from 1995 through 1999. This is consistent with the approximately 100 to 120 majors in recent years. For the most recent semester, Spring 2000, 23 students graduated with geography majors, while six students graduated with geography minors.

c. Average number of total credits completed by those earning degrees for each year of the past five years if the program is an undergraduate program. Undergraduate majors with a consistent pattern of students graduating with more than 120 credits should provide and explanation of the program elements that require credit accumulation in excess of that number.

For the three years depicted in Table 11, geography graduates have averaged 128, 131 and 129 credits at graduation. There is nothing inherent in the geography program that requires students to take more than the minimum 120 credits needed for graduation. The likely reasons for students taking more than the minimum number of credits to graduate include. 1) Many students do not declare geography as a major until their junior year. 2) Many students are slow in selecting a required minor. 3) Many students had been pursuing other programs in other colleges and have new requirements when they switch colleges. 4) Few students see taking some credits beyond the minimum of 120 as a problem. In fact, since students pay the same tuition whether they take 12 or 18 credits, there is no financial incentive to limit the number of courses they take.

d. SCH/FTE for the department, if relevant, for each of the past five years.

Since the Geography Department was merged with the Geology Program in 1999-2000, it is necessary to treat geography and geology separately from 1995 to 1999 in Table 12. Both Geography and Geology consistently carried very high SCH/FTE loads in their respective courses. Since many courses in the department have enrollment caps related to science laboratory space restrictions and limited seats in computer laboratories, and the educational goals of the Department attempt to limit enrollment in upper level courses to 30 or less, the high SCH/FTE is especially impressive. Geography and Geology combined ranked 4<sup>th</sup> highest in terms of SCH/FTE in four of the last five years in the College of Letters and Sciences. The only departments with regularly higher SCH/FTE were Political Science, Sociology and Women's Studies and Anthropology. Unlike Geography and Geology with many science lab courses and

computer lab enrollment restrictions, these other departments generally offer lecture courses, which can accommodate more students than science and computer intensive courses.

**Table 12**  
**Student Credit Hours (SCH) Per Full-Time Equivalent (FTE)**  
**from Fall 1994 through Spring 2000**

	F95	S96	F96	S97	F97	S98	F98	S99	95-99 Avg.	F99*	S00*
<b>Geography</b>	<b>499</b>	<b>440</b>	<b>532</b>	<b>421</b>	<b>451</b>	<b>438</b>	<b>479</b>	<b>414</b>	<b>459</b>	<b>440*</b>	<b>349*</b>
Arts & Communication	288	246	281	266	291	282	307	263	277	209	198
Business & Economics	280	267	283	284	295	282	313	311	286		
Education	256	240	243	237	242	246	243	239	245		
Letters & Sciences	380	340	397	342	387	325	388	339	360	376	327
<b>Geology</b>	<b>521</b>	<b>347</b>	<b>328</b>	<b>261</b>	<b>542</b>	<b>375</b>	<b>315</b>	<b>299</b>	<b>384</b>		

\* Geography and Geology combined.

e. Student placement information. (Data to be provided by department/program)

The placement of geography graduates has been good over the period of review, in large part because of the growing need for employees with geography backgrounds and GIS skills in the work force. Unlike during the last review period, many graduates are turning down attractive job offers for even better ones. Employment prospects for geography graduates are very good, as indicated in Table 13. The generally good economy and the fact that many employers in the public and private sectors are seeking employees with Geographic Information Systems (GIS) training and technical skills has provided the best employment prospects for geography graduates in years. Entry level positions for undergraduate majors in the last two years have been ranging from \$30,000 to \$45,000. It is gratifying, yet somewhat demoralizing, to note that undergraduate geography majors are commanding salaries at or above what a newly hired Ph.D. at UW-Whitewater is receiving.

**Table 13: Placement of Geography Graduates in Career Services Annual Reports**

1996-97			1998-99*		
Number Reporting	% Placed	% Related Jobs	Number Reporting	% Placed	% Related Job
17	100 %	83%	14	86 %	79%

\*In checking several of those students who did not report their status to Placement Services, Trent Blank was immediately employed by American Family Insurance; Todd Majewski was immediately employed by a consulting firm in Birmingham, Alabama; Ray Phillips was employed immediately by a consulting firm in Orlando, Florida; Jeremy Soika was immediately employed by a consulting firm in Birmingham, Alabama; and Thomas Goodwin was working for the Wisconsin Department of Transportation. All of these graduates were working with firms and agencies utilizing their GIS technical skills in various ways.

**D. Demand for Graduates**

1. Identify career opportunities available for graduates of the program. Placement statistics to be considered may include:

As indicated earlier in this report, employment prospects for geography majors are very good, especially for those possessing GIS and other technical proficiency skills and able to employ these skills in analyzing and offering solutions to real world problems. As indicated earlier, the Bureau of Labor Statistics has identified jobs employing GIS skills as among the most rapidly increasing employment field in the next ten years. As noted previously, geography graduates have made very good impressions on recent graduate programs accepting them. Faculty and chairs from the University of Akron, the University of Colorado, the University of Northern Iowa, East Carolina University, the University of North Carolina-Charlotte, and UW-Milwaukee have contacted the chair of the department and other faculty and expressed their high opinion and favorable assessment of UW-Whitewater geography majors.

#### **E. Accreditation**

1. Identify the role of program accreditation for employment of graduates or program continuation.

Accreditation is not an issue for the program.

2. If accreditation is not required for graduates' employment or program continuation, but provides a competitive edge for the program, provide a brief explanation of the advantages of holding this accreditation.

Given the importance of GIS, and the ease with which geography graduates with GIS skills are getting hired, the ability to offer GIS workshops for employees of firms and agencies in our service area could serve and attract new and non-traditional students. Giving other demands on current faculty, however, the department believes that a new GIS teaching/computer laboratory administrator position, discussed earlier, is necessary. This position will be necessary to effectively staff additional technical course sections, offer a range of GIS workshops serving different audiences (land use planners, retail and marketing specialist, environmental analysts, elementary and secondary teachers, etc.).

The department is considering the feasibility of offering a GIS Certificate, which could be conferred after traditional and non-traditional students take a required number of technical and applied GIS course credits. Again, to offer such a certificate and the necessary array of courses the new GIS Instructor/Computer Laboratory Manager position is crucial.

#### **F. Location Advantage**

1. Explain any advantage the program has due to the location of the University of Wisconsin-Whitewater and its access to opportunities and resources in the region.

Clearly, the university and department's location near Chicago, Milwaukee and Madison provides a wider array of internship opportunities and enhances our potential market for new initiatives, such as income-generating GIS workshops. The GIS Certificate, if developed, would also do well with the large potential market nearby.

#### **G. Comparative Advantage**

1. Identify any unique features that set the program apart from other competing programs and/or elements that contribute to the program having a competitive edge. Factors to discuss may include:

a. The program's content or special emphases

The applied geography emphasis of UW-Whitewater's geography program and the high level of technical competency provided its graduates are strong features of the program. The labor market demand for employees possessing geographic knowledge and proficient GIS technical and application skills is likely to have the greatest impact on the program in the next five years. With the building expansion of Upham Hall, the improvement in department facilities, the new Instructor/Computer Laboratory Manager position, and an enhanced budget, the department will be able to move aggressively in developing income-generating workshops, contract work, and other new initiatives aimed at enhancing its reputation and level of service to the surrounding region.

b. Its focus on a specific population

Although traditional students will remain the focus of the program, many public agencies and private firms in the university's service area have the need to train existing and future employees in GIS, remote sensing, and other technical areas requiring additional courses or workshops offered by geography faculty. The department can better serve this new market if strategic investments, as identified elsewhere in this report, are made.

c. The expertise of the faculty and staff in specific areas

Geography faculty possesses the content background, theoretical knowledge, technical skills and ability to apply problem-solving skills to real world problems. Dr. Howard Botts is a nationally recognized expert in GIS applications in addressing economic and location questions in the business world.

Recent hires in physical geography and geology (Drs. David Goldblum in biogeography, Peter Jacobs in soil science, David Travis in meteorology and climatology, and Rex Hanger in stratigraphy and paleontology) have resulted in this program having perhaps the strongest undergraduate physical geography program in the system. All four are excellent classroom teachers and accomplished researchers. They have also worked cooperatively with colleagues in the other sciences to establish the new interdisciplinary Environmental Studies minor. Dr. Frank Luther, the senior geologist, provides expertise in mineralogy, petrology and structural geology.

The recent hire of Mr. Tom Jeffery, a GIS/Remote Sensing specialist, to teach our suite of technical courses has strengthened the program. Unfortunately, his plate is so full offering the technical courses required in our growing undergraduate program that, without the additional support of the Instructor/Computer Laboratory Manager position, it will be difficult to serve new markets and move as aggressively in developing income-generating workshops and contract work.

Drs. Jayati Ghosh, John Patterson, Don Rambadt and Carol Rosen bring international perspectives and experience to the program. Drs. Patterson and Rambadt have conducted five travel study programs for traditional and non-traditional student groups the last five years to various European countries. Dr. Ghosh has conducted research recently in India, Canada and the United States and brings this breadth of experience to her teaching. Dr. Rosen has traveled recently to Cuba and participated in a cultural immersion experience in

Guatemala in order to bring more firsthand experiences and knowledge to the Geography of Middle America course.

d. The availability of internship experiences

The quality of the paid internship program in the department and other work opportunities are noteworthy. Since virtually all geography internships are paid, the money students earn during these paid internships represents revenue generated by geography faculty from outside sources. Since the average geography internship has paid approximately \$8.00 an hour and involved 16 to 20 hours a week for 15 weeks during the semester, the average intern has earned for \$2,000 to \$2,400 for a 3-credit internship. Summer internships, which are full-time, pay even more, ranging from \$3,000 to \$4,000 depending on compensation. Over the last five years, in excess of \$100,000 in internship compensation has been secured from extramural sources for geography majors. It is important to note that all internship credits are handled as uncompensated overloads by involved faculty.

e. The lack of duplication of the program at other institutions in the UW-System

Other geography programs pursue educational goals similar to those at UW-Whitewater. However, given the staffing strengths identified above and UW-Whitewater's location advantage relative to other UW System schools, this program can distinguish itself even further in the physical/environmental, applied geography and technical competency areas. The scheduled expansion and improvement of Upham Hall will increase the facilities and capabilities of the department. With strategic new hires and investments over the next five years, this already fine program can become the premier undergraduate geography program in the state, even in the Midwest.

## **H. Community Impact**

1. Discuss the impact that the program has on the community and/or region. Factors to discuss may include:

a. The involvement of students and/or faculty in the region

Geography and geology faculty are regularly invited by service groups in surrounding communities to speak on topics in their areas of expertise. Several geography faculty (Ghosh, Patterson and Rosen) have regularly presented special topic talks at Fairhaven Retirement Center, a senior citizen community in Whitewater. David Travis has assisted local high schools in setting up weather stations and utilizing the department's weather page.

b. The utilization of the program by consumers

Geography and geology faculty members periodically receive calls and email messages from community groups and individual citizens requesting information. For example, David Travis frequently receives information requests relative to weather conditions and episodes. Many people on campus and in surrounding communities access the weather data from the homepage supervised by Dr. Travis and a geography student.

## **I. Strategic Planning**

1. Discuss potential revisions to the curriculum (e.g., the development of new academic emphases, new courses, etc.) that you foresee over the next review period in view of projected trends in employment and the development of new technologies, etc.

Minor revisions are anticipated in the five tracks in the geography major over the next review period. In considering only current staff positions, the development of new courses is unlikely. However, the development of several new income-generating workshops, especially during the summer, is anticipated. The department is preparing several grants, that if successful, will commence an International Initiative for the department.

## **II. Resource Availability and Development**

### **A. Faculty and Staff Characteristics**

1. Discuss the characteristics of the faculty and staff responsible for the program. Factors to be discussed include levels of professional preparation; appropriateness of expertise to the needs of the program; unit cohesiveness in enhancing program quality; and success in meeting affirmative action goals.
2. Indicate the courses in the curriculum for which each faculty and staff member is responsible.
3. Identify anticipated staffing changes or areas of need, and the projected impact of these changes and needs on the program.

The narrative below addresses the three concerns identified above. All geography faculty either possess the required terminal degree or, in the case of one faculty member, in the process of completing it. Individual faculty dedication and unit cohesiveness are requisites for an effective, flexible, and productive academic department. Given the importance and scope of academic freedom and reliance on self-motivation, each faculty member should and must be responsible and take pride in his or her own achievements and contributions. However, in successful departments individual faculty advance their interests while always keeping the broader departmental goals and interests in mind. In unsuccessful departments, individuals too frequently advance their own interests at the expense of departmental interests and cohesion. The Geography and Geology Department has been diligent and fortunate in attracting productive independent contractors who also are enthusiastic, cognizant and supportive of department endeavors. The department has been successful because it has recruited good people, trusted their professional judgment, and supported them as much as possible in advancing their professional goals. In return, individual faculty members have not let their individual professional goals distract them from devoting their energies to department initiatives. Collegiality is the oil that lubricates the operation of a successful academic department striving to maintain and improve its teaching, research and service performance.

With human geographers, physical geographers, and geologists as members, the department brings together professionals of diverse topical interests and with diverse academic backgrounds. These diverse backgrounds and levels of expertise produce a faculty capable of and, in fact, offering an excellent undergraduate program. In replacement or new hires, the goal is always to seek a colleague who shows the potential to be an effective teacher/mentor of undergraduate students. In a relatively small department, it is also very important that each faculty member possess systematic, regional and/or technical competencies different from other colleagues so that the academic depth and breadth of the program can be enhanced.

Most geography and geology faculty members routinely have teaching loads above the expected 12-credit teaching load. With science and computer labs, contact hours are well in excess of 12 credits, often at 15 or more contact hours. Teaching loads of 13 credit in a semester are common for some teachers with extra lab sections and several 4-credit courses. In addition, all internship credits and individual study credits are handled as uncompensated overloads. These facts are not offered as a complaint, but merely as evidence that department faculty are working very hard and that new program initiatives and directions will be difficult to accomplish without additional resources or reducing current workloads.

**Professor Howard Botts** (Tenured Geography with Ph.D. University of Wisconsin-Madison) teaches Geography of Canada and the United States, Economic Geography, Applied GIS: Applications for Business and Industry, Applied Research Methods, and Field Courses on a regular basis. He is very qualified to teach Historical Geography, but does not teach it regularly. He develops and supervises paid internships with businesses and corporations and is very active in assisting graduates to secure employment when they graduate. The applied emphasis in the geography program depends very heavily on his special talents and vast experience in devising geographic solutions to real world problems. He regularly handles internships as an uncompensated overload.

**Patricia Dresang** (Program Assistant I, although an upgrade to Program Assistant II is being reviewed and should be approved) is responsible for providing a wide array of clerical and administrative assistance in our rapidly expanding program. In fact, the workload in this growing program is such that another upgrade of the position is warranted, and/or an extra LTE assistance should be considered, and/or the half-time appointment during the summer needs to be reconsidered in light of the directions the department is moving.

**Lecturer Jayati Ghosh** (Academic Staff Geography with Ph.D. University of Waterloo) teaches Global Perspectives, Human Geography, Urban Geography, and Geography of Asia on a regular basis. She has taught the International Studies Seminar, as well and Political Geography. Without the courses she teaches, the department could not have coped with the increase in the number of majors in the last five years. Geography of Asia is her unique curricular specialty. She intends to apply for the tenure track position in Human Geography being conducted during the 2000-01 school year.

**Assistant Professor David Goldblum** (Tenure Track Geography with Ph.D. University of Colorado) teaches Human Environmental Problems, Physical Geography, *Spatial Analysis*, *Biogeography*, and *Advanced Methods in Physical Geography* on a regular basis. He developed the three new courses in *italics*. His courses strengthen the popular Physical/Environmental track in the geography major. He is coordinator of the new interdisciplinary Environmental Studies minor and working with colleagues in other departments to develop an Environmental Studies major in the future.

**Assistant Professor Rex Hanger** (Tenure Track Geology with Ph.D. University of California-Berkeley) teaches or will be teaching Principles of Geology, Principles of Oceanography, Historical Geology, Environmental Geology, Paleontology, and Stratigraphy and Sedimentation. He is the first tenure track hire in Geology in twenty-five years and was recruited because of his demonstrated effectiveness as a teacher/scholar to increase the visibility and enrollments in geology. The offering of the Geology minor would be impossible without these courses.

**Associate Professor Peter Jacobs** (Tenured Geography Ph.D. University of Wisconsin-Madison) teaches *Introduction to Geography*, Physical Geography, *Soil Science*,

Geomorphology, Water Resources, and *Advanced Methods in Physical Geography* on a regular basis. He has also taught Physiography of North America. He developed the three new courses in *italics*. His courses strengthen the popular Physical/Environmental track in the Geography major and provide a broader array of field sampling and laboratory analysis opportunities for students.

**Lecturer Thomas Jeffery** (Academic Staff to convert to Tenure Track once Ph.D. is completed, ABD University of Nebraska-Lincoln) teaches Human Environmental Problems, Introduction to Mapping, Geographic Information Systems, and Remote Sensing of the Environment on a regular basis. As the person solely responsible for teaching the three technical courses in the department, this is a crucial position, especially since technical competency is becoming increasingly important for majors securing employment after graduation. Supervision of paid internships utilizing GIS skills is handled as an uncompensated overload.

**Associate Professor Frank Luther** (Tenured Geology Ph.D. Lehigh University) teaches Principles of Geology, Introduction to Mineralogy, Petrology, and Structural Geology on a regular basis. He also regularly offers Field Studies in Geology for qualified and interested students. The offering of the Geology minor would be impossible without these courses.

**Professor John Patterson** (Tenured Geography Ph.D. University of Florida) has been chair the last eight years and teaches Global Perspectives and Urban Land Use Planning on a regular basis. Once chair duties are over, he will return to Urban Geography, and Geography of Europe. He supervises paid internships with planning agencies as an uncompensated overload responsibility. He has co-led travel study courses to Europe the last five years. He is also coordinator of the interdisciplinary Urban and Area Development minor.

**Lecturer Donald Rambadt** (Part-time Academic Staff Ed.D. University of Wisconsin-Milwaukee) teaches Global Perspectives, Human Environmental Problems, and Geography of Europe on a regular basis. He has taught Geography of the Former Soviet Union and has co-led travel study courses to Europe the last five years.

**Professor Carol Rosen** (Tenured Geography Ph.D. University of Wisconsin-Milwaukee) teaches Geography of Wisconsin, Human Geography, Historical Geography, Geography of Middle America, and Geography of Race and Ethnicity in the United States on a regular basis. Her offerings are especially supportive of the General and International/Regional tracks in the major. Her Geography of Race and Ethnicity in the United States is also designated as a course satisfying the diversity requirement.

**Associate Professor David Travis** (Tenured Geography Ph.D. Indiana University) teaches Physical Geography, Human Environmental Problems, Meteorology and Climate, and *Human and Climate Interactions*. In addition to the new course in *italics*, he introduced *the Remote Sensing and Spatial Analysis* course before it was revised and taken over by another faculty member. The popular Physical/Environmental track in the major and interdisciplinary Environmental Studies minor benefit from his expertise. He has periodically handled internship credit as an uncompensated overload.

### Anticipated Staffing Changes

**Tenure Track Human Geographer:** The department is conducting a tenure track search for a conversion of an Academic Staff position in 2000-01. A human geographer capable of teaching Global Perspectives, Human Geography, which is a core course in the geography major, and selected upper level systematic (Political Geography and others) and regional (Asia, Africa or Latin America) courses in new areas of expertise is being sought. This hire will strengthen the program, in particular the International/Regional and General tracks.

**Tenure Track Environmental Geographer Search:** The department is conducting a tenure track search for a new position. An environmental geographer capable of teaching Global Perspectives, Human Environmental Problems, and upper level systematic courses (cultural ecology, environmental policy/planning, resource management, recreation, and/or tourism) in new areas of expertise is being sought. This individual will make major contributions to the Physical/Environmental track in the major, the interdisciplinary Environmental Studies minor, and an anticipated Environmental Studies major.

**Possible Retirement of Dr. Frank Luther:** This retirement will have the greatest impact on the Geology minor. The department anticipates that it will be given a part-time Academic Staff position in Geology, if Dr. Luther decides to teach half-time (a possibility he has been discussing with the Dean of Letters and Sciences and the Chair).

**Possible Retirement of Dr. Howard Botts:** Given his national reputation and high demand as a consultant, it is possible that Dr. Botts could retire and/or decide to pursue a non-teaching career. This exigency is indeed troubling, since Dr. Botts has added so much to the program in the applied GIS area and has been so instrumental in preparing and assisting many geography majors in securing valuable paid internships and high-paying jobs when they graduate. To find someone with his experience, knowledge of the business world, effectiveness as a teacher, especially in recruiting new majors, and showing students how their geographic knowledge and technical skills address real world problem solving, will be extremely difficult.

**Academic Staff Instructor/Computer Laboratory Manager (12 months):** With the upcoming expansion of Upham Hall resulting in new, larger computer labs and additional space and facilities for the department, there is a growing need for an additional staff member to handle some of the technical course load. Administrative duties will include supervising a growing number of student assistants, developing and administering revenue-generating contract work, conducting and assisting in staffing income-generating workshops, and supervising paid in-house internships. This individual will also be responsible for maintaining server and protocols in computer laboratories. Although the position is envisioned as half teaching and half administration, it may be necessary to adjust the balance between teaching and research as the amount of contract work, number of internship, number of student assistants, etc. fluctuate. Clearly, this position will alleviate some of the payroll supervision, employee supervision, and computer laboratory oversight duties of the Program Assistant.

**Program Assistant I (upgrade to II in process):** Given the growth in the program and the additional work load anticipated by new initiatives, serious consideration must be given to both upgrading this position and providing additional LTE staffing. This issue is of less, but still some concern, if the Instructor/Computer Laboratory Manager position discussed above is funded. Of special concern was the reduction of the current program assistant position to half time in the summer. Although this was not an unreasonable decision when it was made a number of years ago, it is a poor decision for the current and the future health of the program. It is especially unwise in light of the goal of developing income-generating workshops and contract work projects, many of which will be conducted in the summer.

## **B. Teaching and Learning Enhancement**

1. Summarize faculty and staff activities in the areas of teaching and learning enhancement since the previous audit and review. Factors to discuss may include:
  - a. Participation in on-campus and off-campus teaching enhancement activities;
  - b. Involvement in academic advising and efforts to maintain or improve advising performance;
  - c. Work with undergraduate students on research projects;
  - d. Initiatives in student-learning based outcomes;
  - e. New course development;
  - f. Involvement with interdisciplinary course development and/or delivery.

The tables in Appendix F summarize the range of activities and involvement of a productive faculty.

## **C. Research and Other Scholarly/Creative Activities**

1. Summarize the research and other scholarly/creative activities of the faculty and staff since the previous audit and review. Delineate participation in professional meetings, exhibits, performances, presentations and publications as means of presenting original basic and applied research initiatives.

(See table of faculty and staff in Appendix F for tabulation of these activities.)

## **D. External Funding**

1. Summarize the efforts and successes of the program to generate funding through grants, contracts, and/or gifts. Indicate sources, requested dollar amounts, and current status of such requests.

All teaching and research grants, contract work, gifts and paid internships generated by geography faculty over the last five years approach a total of \$900,000. The department has been successful in securing external funding. Of special note, two faculty members, Drs. Jacobs and Travis, received prestigious National Science Foundation Research grants, each for about \$80,000 (\$160,000). Other department faculty members have obtained smaller teaching and research grants, totaling in excess of \$175,000. Another important feature of the research grants is that they employ students as research assistants and involve them heavily in undergraduate research projects. For example, Dr. David Travis has employed ten students, Dr. David Goldblum has employed three students, and Dr. Peter Jacobs has employed two students with their research grants. Dr. Howard Botts is responsible for over \$455,000 of GIS software donated to the department by ESRI and Claritas. Since all geography for credit internships in the last five years have been paid, this represents in excess of \$100,000 provided to students by participating private firms and public agencies. See table in Appendix F.

## **E. Professional and Public Service**

1. Summarize the professional and public service activities of the faculty and staff since the previous audit and review. Discuss such activities as:

- a. Service involvement in professional organizations at state, regional, national, or international level.

Both Drs. Carol Rosen and David Travis have served as officers in state, regional and national professional organizations. Dr. Jayati Ghosh has been actively involved in special sessions and committees of professional geography organizations. The department hosted the meeting of the Wisconsin Geographical Society several years ago.

- b. Editing or reviewing for professional publications within the discipline.

Drs. Ghosh, Goldblum, Jacobs, Hanger, Rosen and Travis have served as reviewers for professional publications, published book reviews, and served as editors of professional journals.

- c. Non-compensated consulting or intervention activities related to the discipline.

Dr. Peter Jacobs is consulting with the Land Conservation Society in Jefferson County. Both Drs. Goldblum and Jacobs have assisted with land restoration efforts on campus.

- d. Roles and memberships in university, college and departmental committees.

All faculty are actively involved in department, college and university service.

#### **F. Resources for Students in the Program**

1. Discuss the number of students in the program in relation to resources available in the program. Factors which may be analyzed include:

- a. The number of students per faculty member.
- b. The amount budgeted to student help, capital, supplies/services, etc.

The Red Book comparisons with other UW System geography programs cited in Table 9, especially since UW-Whitewater has the highest number of majors, indicate that the program is underfunded. Other programs with fewer majors tend to have significantly higher service and supply, student help, and LTE budgets. The service and supply budget would appear to be at least \$5,000 below other comparable departments, regular student help from \$2,000 to \$15,000 less, and LTE \$3,000 to \$5,000 less. The Dean's Office of the College of Letters and Sciences has done much to address budgetary deficiencies and fund special and critical needs; however, the regular departmental budget has not been raised sufficiently to reflect routine costs and resource needs.

Many of the resources for students, for example paid internships and paid research assistants on grants, have been secured by faculty initiative. In the case of internships, internship credits are presently been offered as uncompensated faculty overloads.

#### **G. Facilities, Equipment, and Library Holdings**

1. Discuss the adequacy of the facilities, equipment and library holdings available for the purposes of supporting a high quality program. Identify any deficiencies and describe plans to remedy them.

As noted in previous sections, classroom and laboratory modernization projects have resulted in adequate facilities. The space constraints of a growing program should be adequately addressed in the upcoming renovation and expansion of Upham Hall, which will almost double the department's current space allocation. Library holdings are adequate for an undergraduate program.

## **Appendices**

**Appendix A:** Program APR(s)

**Appendix B:** List Linking Courses to Assessment Objectives

**Appendix B1:** List of Dual-Listed Courses and Graduate Requirements (if any)

**Appendix C:** Audit and Review Evaluation Report from Last Review

**Appendix D:** Trend Data included from University's Fact Book

**Appendix E:** Accreditation Report (if relevant)

**Appendix F:** Table of Faculty and Staff

**Appendix G:** Examples of Applied Research Methods papers

**Appendix H:** Examples of Geography Major Student Portfolios