

UNIVERSITY OF WASHINGTON DEPARTMENT OF

# Geography



# Self Study

1996

## Department of Geography Self-Study Report, 1996

### Table of Contents

I. Geography of Life: The Discipline and Societal Need.....	1
II. Descriptions of the Unit	
a. Program Mission and Goals	
<i>Undergraduate Program</i> .....	3
<i>Graduate Program</i> .....	7
b. Basic Program and Unit Data.....	11
c. Demand for Our Graduates	
<i>Regional Demand</i> .....	11
<i>National Demand</i> .....	12
III. Faculty	
a. Visiting, Part-time, and other Faculty.....	13
b. Faculty Distribution and Staffing.....	14
c. Underrepresented Groups: Faculty.....	15
IV. Students	
a. Undergraduate Students: Strategies for Meeting and Shaping Increased Demand.....	15
<i>Short-term Solutions</i> .....	22
<i>Long-term Solutions</i> .....	23
<i>Summer</i> .....	24
b. Placement of Undergraduates.....	25
c. Underrepresented and Nontraditional Students: Undergraduates .....	27
d. Graduate Students: Improving the Quality of Our Program.....	28
e. Underrepresented Groups and Nontraditional Students.....	31
V. Curriculum and Instruction	
a. Undergraduate Degree Program and Concentrations.....	32
b. General and Service Education.....	34
c. Interdisciplinary Programs.....	36
d. Curricular Change: Undergraduate Program Modification and Enhancements.....	36
e. Graduate Degree Programs: MA and Ph.D.	
<i>Masters Degree Program</i> .....	39
<i>Ph.D. Program</i> .....	41
f. Instructional Relationship to Other Programs.....	43
g. Teaching Participation.....	43
h. Participation in Research Activities.....	44
i. Funding the Graduate Students.....	45
j. Curricular Change: Graduate Program Modifications and Enhancements.....	45
VI. Research: Accountability to Place and Community.....	49
a. Collaborations with the Private Sector and Government.....	52

b. Funding.....	53
c. Research Development.....	53
VII. Service to Campus, Regional and National Communities	
a. University Service.....	56
b. National Service.....	57
VIII. Evaluation	
a. Faculty.....	60
b. Students	
<i>Undergraduates</i> .....	62
<i>Graduate Students</i> .....	64
c. Evaluation of Curriculum and Instruction.....	65
IX. Resources.....	69
X. Summary	
a. Present Condition.....	71
b. Plans Currently Being Implemented.....	73
XI. Future Goals and Needs	
a. Future Goals.....	78
b. Resource Needs.....	80
c. Anticipated Results.....	81
Appendix D.....	82

## Preface

This study is the result of the combined efforts of the entire University of Washington Department of Geography including faculty, staff, and graduate and undergraduate students. The effort was led by a committee chaired by Vicky Lawson and composed of the following members: Bill Beyers, Nick Chrisman, Matt Sparke, Rick Roth, and David Abernathy. This committee took the responsibility to organize and draft the study, and they deserve an enormous amount of credit for its creation.

We were given a charge by Associate Dean Dale Johnson and Dean Fred Campbell to use this self study to tackle as directly and creatively as possible three of the most pressing issues facing the University: increasing access for students, quality of programs, and accountability. To answer these questions, we ventured into the new territory provided by the new University Strategic Analysis Group database which permitted us the opportunity to better assess in quantitative terms what we are doing and to compare our measures with the rest of the social sciences. We are especially grateful to Phil Hoffman and Andrew Hummel for their support in accessing the database and to John Drew for providing Graduate School statistics. We have done our best to verify these numbers and to identify any and all qualifiers to specific values, but it may well be that there are a few instances where the numbers will need to be modified.

We have taken the charge to examine accountability especially seriously. Indeed, it has become the central theme of this study. In particular, we have attempted to show how both the intellectual roots of our discipline and the practice of geography in this department merge with traditional meanings of accountability. We have come to view "accountability to place" as a means to describe our role in a public research university with diverse missions.

As this study demonstrates, we feel that there are many good reasons to be proud of the quality of our program. But we have undertaken this self study with all of the energy we can because, quite simply, we want to be better. It is in that spirit, then, that we submit this self assessment of the changes over the past ten years, the current state of the department, and our visions of where we want to go.

## Department of Geography Self Study Report, 1996

**Unit authorized to offer degree programs:** Department of Geography; College of Arts and Sciences; Division of Social Sciences.

**Exact titles of degrees granted:** Bachelor of Arts, Master of Arts, Doctor of Philosophy.

Please note: because of the argument we wish to construct, we have moved the description of administrative structure to Appendix D.

### I. GEOGRAPHY FOR LIFE: THE DISCIPLINE AND SOCIETAL NEED

Geography is the science of analyzing and understanding the webs of relationships among people, places and environments on the Earth. Its subject matter is the human and physical spatial relationships that make up the world's environments and places. Geography asks us to look at the world as a whole, to understand the connections between places, to recognize that the global affects the local and vice versa. As we approach the next century the planet Earth will be more crowded, the physical environment more threatened, natural resources more stressed, the global economy more competitive, and societies, cities, and peoples more interconnected. Dealing effectively with all of these challenges requires a deep understanding of the knowledge and skills learned in Geography. The Department, like the discipline as a whole, researches greater global interconnectivity, increased use of information technologies, and ecological change as reflected in changing human-environment relations. These dynamics affect phenomena as diverse as the diffusion and appearance of a new disease to the structure of cities in the global economy.

As a wide-ranging and intrinsically *integrative* discipline Geography enables its students to better synthesize solutions learned in other disciplines, encouraging them always to come to terms with the way diverse processes come together in place in particular spatial configurations. It is this persistent attention to place and space, to examining, mapping and understanding accountability to place, that gives Geography its disciplinary distinction. Crossing disciplinary divides without ever losing sight of this geographical understanding of accountability, geographers constantly help other scholars and citizens to come to terms with how a vast range of social, political, environmental, cultural, economic relations occur in particular places -- being shaped by particular spatial configurations. This larger geographical vision of 'accountability to place' is complementary to other notions of 'output performance' and in this report we will constantly address both senses of accountability. As we shall show Geography measures up very well in terms of output performance criteria. But, more than this, we are presenting here a vision of Geography as a discipline that provides further critical tools for examining accountability, a discipline that, in short, extends what we as educators understand accountability to require. Stretching it to encompass the larger issues of civic responsibility, Geography asks us and

enables us to better articulate the wider educational mission of the university as an institution with a profound accountability to place.

This notion of accountability also shows up on the national level where Geography has become a focus of educational reform in the U.S. It was identified in the early nineties as one of five core subjects (along with English, mathematics, science, and history) in the national education reform act Goals 2000. The discipline is characterized by the following subject matter and analytical skills: (i) understanding of the human systems of settlement, economies, and cultures that shape the Earth's surface; (ii) measurement, representation and analysis of the relationships and transactions between people, organizations, places, and environments; (iii) examining how the identities of individuals and societies are rooted in particular places; (iv) analyzing nature-society relationships; and (v) understanding physical processes that shape the Earth's surface.

At the University of Washington, the Geography Department has historically developed a set of strong specializations in areas (i) through (iv). This emphasis began with the founding of the Department in 1935, when the Geography and Geology Department split into two units and Geography made a strategic decision to focus its expertise in areas of significant strength (see Velikonja, 1994 in the Association of Pacific Coast Geographers Yearbook). The roots of the Department go back to 1890 when geography classes were first identified in the University course schedule. In the period between 1935 and 1950 the Department was led by Dr. Howard Martin who positioned the Department (at the University and nationally) for the major impacts it was to have on the discipline. Dr. Donald Hudson assumed the chair in 1950 and made a series of faculty appointments and decisions about specializations that propelled Washington into the top ranks of doctoral programs in geography by the late 1950's. This period coincided with Dr. Charles Odegaard's presidency, in which major expansions in the graduate and research emphases of the University occurred. Graduate coursework began in the Department in 1922 with the first MA awarded in 1929 and the first Ph.D. in 1930. The department was ranked among the top 10 graduate departments in the field in 1965 and it has remained in this top tier of the ranking for the last 31 years. Hudson's key vision was to specialize the department in critically important emerging areas in human geography, rather than attempting to cover all areas of this diverse discipline. Ever since, Hudson's decision has guided the development of the department. As time has passed, the nature of the department's specializations has shifted to reflect intellectual and societal trends of more recent years, but it remains focused on human geography.

Historically, the Department has played a major role in developing and refining geographic theory and analytical methods, and has been a pioneer in the areas of economic geography, spatial analysis, cartography and GIS, and methodological innovation. There is both enormous coherence and complementarity among the faculty's research interests, approaches to both theoretical and empirical research, and commitment to working with the various communities affected by our research. A hallmark of the Department is our unique ability to create intellectual synergies around core interests in the workings of social power and decision-making, questions of social justice, and analysis of dynamic

processes of economic, social, environmental, and political change. Research and teaching in the department is particularly strong in its blending of both theoretical and empirical research, and is currently contributing to knowledge in important areas. These include:

- economic restructuring and the move towards a service economy in the United States
- migration between rural and urban areas in the U.S, Latin America, and China and impacts on employment, residential dynamics, and economic change
- international migration and struggles over political and cultural institutions
- changing dynamics of health care provision and disease ecology around the world
- the social implications of global restructuring in commercial agriculture
- community involvement in environmental risk assessment and collaborative environmental decision-making
- the impact of new transportation technologies on urban form
- analysis of environmental, energy and resource management problems and social and economic transformation processes in transitional economies such as Russia, Eastern Europe and China
- the development of transnational connections between Washington, Oregon, British Columbia and the Asia-Pacific Rim
- the role of information in locationally and environmentally significant decisions
- global change, including the emergence of new and resurgent diseases

The breadth and strength of these research foci explain the Department's consistently high national ranking and the continuing growth in demand for our courses and for our undergraduate and graduate degree programs.

## II. DESCRIPTION OF THE UNIT

### Program Mission and Goals

The Department offers three degrees: BA, MA and PhD.

#### *Undergraduate Program*

The undergraduate program in Geography is designed to connect social science and humanities analytical training with the substantive concerns of the discipline. Our program emphasizes student initiative. Students are asked to conceptualize and to articulate a set of interests, identify appropriate analytical skills and courses for becoming proficient in their chosen fields, and to make informed choices about their individual intellectual development and career path. The latter can include graduate school, jobs in the public sector or the private sector. In guiding our majors we emphasize the connections between the curriculum and the community, the workplace, and current global socio-economic change.

Geography as a discipline tries to link analyses carried out at various scales (local, regional, national, global) in order to create accountability to places and communities, and

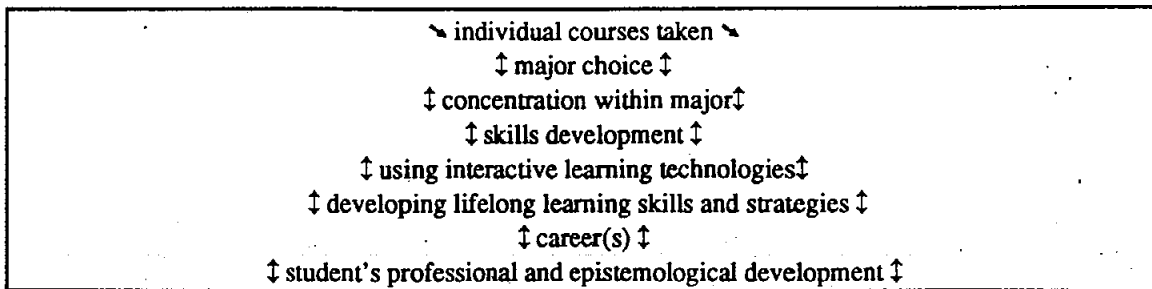
offers unique spatial perspectives and research tools to aid in public policy decision making. In the same way, our undergraduate program works to help link curriculum, intellectual and professional development, and community work in order to create interlocking accountabilities among students, the department, the university, and the community and state. We ask our majors to think actively about their future goals, the skills they would like to have in hand when they graduate, and what they are passionate about as people. We seek to invest our majors with a sense of ownership of their education and through this, to develop a learning contract in which both the student and the department identify expectations, stages of progress, core competencies, and desired outcomes, and then work to assure that both the department's and the student's resources and abilities are used in the most efficient ways to produce these outcomes. These linkages are designed to mutually reinforce and underline several focal messages, with the aim of producing :

- students capable of both entering and shaping public policy debates. This entails helping students learn to locate and use data, make effective written and oral arguments, develop meaningful and realistic career plans, and learn to work collaboratively. It also means encouraging them to engage in service learning and other vehicles for becoming aware of the extent of their responsibilities and opportunities as members of larger communities.
- students capable of being critical media users and early adopters of information technology. We want all of our graduates to be fluent in (that is, able to use as tools): spreadsheets, relational data bases, GIS software, statistical software, and the Internet and World Wide Web. We also work hard to prepare them to read print media critically, to carefully analyze arguments and the sources of data presented as evidence, and to see unfolding policy debates as part of larger, connected social, economic and political forces. In a sense we try to teach them to think globally as they analyze locally, and to be able to both gather and analyze data, turning raw data into usable information.
- students with the confidence, initiative, self-definition, and skill sets which will enable them to pursue varied—and multiple—career paths. Armed with the awareness that they have analytical skills, conceptual frameworks, and methodological and technical versatility, students are far more likely to be successful and satisfied in their work, and make more lasting contributions to society.

Given these goals, we have worked to enable students to actively shape an education that coheres and makes sense to them in terms of what they want to do with their lives. We have worked hard to move students beyond being passive consumers or bystanders of their own education to being reflective shapers—customizers, in a sense—of their own professional and epistemological development, as the catalyzing “value added” factor in their own education, as illustrated in the model below:



### New Model: Students link choices and outcomes



### Old Model: Students as passive consumers

Old model: isolated choices, accidental outcomes	Decision-making criteria	Outcome
courses	whatever fits into schedule	overly-broad general education lacking focus or direction
major	often based more on grades, vague "interests," accessibility, or perceived "easiness" than informed vision of professional and intellectual development	haphazard collection of distantly-related courses
skills development	often based on random or forced course choice, rather than seen as major criteria driving course choice	piecemeal and isolated-skill sets not developed in complementary, logical manner
career	not proactive strategy for planned sequence of career research, skills development, internships, informational interviews, etc.	either unqualified for jobs applied for or winding up under-employed and unequipped for multiple lifetime career paths

As the boxes indicate, whereas in the past each specific student choice (for example, which classes to take), was approached as a stand-alone problem, the emphasis now is on how the parts add up to a whole—with the student's own active shaping as the key ingredient that makes the whole greater than the sum of the parts. Student purpose is a constant presence in our planning: What sequence of skills will planners, etc. need to develop? Does our curriculum offer such a sequence? What new technologies will best further an individual course's aims and help prepare students professionally? What Service Learning or internship opportunities will best help students understand the "real world" context of their coursework? What non-Geography courses are essential to their professional and intellectual development?

We passionately believe that our most successful students will be those who reflect on their undergraduate education and turn their knowledge to use in society, thus matching their educational *ends* with near-term *means*, such as course planning and skills development. Thus our undergraduate program is rooted in a) clearly labeled outcomes,

b) the relevance of these outcomes to social needs, and, c) a developmental view of the undergraduate student.

The links between curriculum, advising, and affective and intellectual development are by no means automatic. Even if they can be articulated and built into a program, they will not work unless there is some underlying consistency of purpose and sense of desired outcomes. Form—the design of the undergraduate program—follows function in the sense that our individual courses, advising materials, and career preparation efforts all stress the consistent development of skills and resources that foster **critical thinking skills**, including the ability to:

- frame questions
- identify and locate appropriate and usable data
- qualify data (and) weigh evidence
- describe and account for contemporary urban, social, political processes, patterns, and practices
- interpret and apply data to current processes, patterns, practices
- employ maps and databases to represent and model real-life situations
- critique opposing arguments/present counter arguments
- communicate arguments cartographically and graphically as well as in written and spoken presentations

Whether our students are making maps, measuring economic growth, analyzing land use patterns, or applying quality of life criteria to developing nations, they are learning to make arguments, using whatever skills (ability to organize thoughts and write clearly; ability to use maps, charts, tables, spreadsheets, etc.) necessary. We believe that this combination of self-confidence and specific skill sets will best prepare them for productive lives after graduation, and will enable them to make a difference in their workplaces and communities.

Indeed, with so many of our alumni now working in key decision-making roles throughout local, regional and state government, as well as in the private sector, we can claim that this department is already helping shape the public policy debates in this state. In the future, we hope to play an even greater role in preparing students to lead these debates by teaching them first to ask the hard questions, then to find ways to answer them thoroughly.

In 1995 the Department adopted a new set of requirements for the undergraduate major. This curriculum which developed from several years of committee work, is now being implemented and evaluated. The new major establishes core requirements and a scheme of four 'options' or tracks in the undergraduate curriculum. A new course, *Geography 397: Tutorial for Majors*, was first offered in Winter 1996 to provide a common basis for incoming majors. We use class time to orient students to the discipline and the major and to establish individual mentoring relationships between students and faculty. Instead of thinking exclusively in terms of courses, there is now a list of skills that we expect to

foster in each student. These are grouped in the broad categories of "Critical Thinking and Analysis Skills," "Technical Skills," and "Research and Presentation Skills" (Table 1). In addition, we now require our undergraduate majors to take a "capstone experience". There are several options for the capstone, such as a student working individually on a thesis or a final project, or a workshop collaborative experience as implemented in the Geography 463 GIS Workshop.

The undergraduate program also has been highly successful at drawing students into the community via: **Internships:** nearly 150 students have had internships in either the private or public sectors since 1990, at tasks ranging from SeaTac Airport planning intern to commercial real estate analyst to Microsoft cartography programmer; **Service Learning:** at least 8 Geography courses now offer a SL component. In concert with the Carlson Office, the department has built strong ties to many local community service organizations. **Course projects:** Several courses have focused on group projects related to such regional concerns as the Seattle Commons, the Regional Transit Authority's ballot initiatives, the Seattle Mariner's baseball economic feasibility studies, and the Duwamish Coalition.

### *Graduate Program*

The graduate programs in Geography are designed to educate geographers for academic research and teaching at research universities and colleges, and for careers in government agencies, research institutes, consulting firms and international organizations. Students are prepared for conducting theoretically informed geographical research on contemporary problems and trends with both global and local significance. The program offers a relatively unique opportunity in American geography, educating graduate students to the most advanced levels in a complementary range of both quantitative and qualitative research methodologies. Techniques ranging from econometric spatial analysis and GIS to fieldwork ethnography and critical media analysis are taught in tandem, with no methodology being institutionally elevated as the only source of academic insight. Instead, we encourage our students to appreciate the seriousness and significance of philosophical debates over epistemology by both educating them in the actual debates and by privileging research as the place where method itself becomes accountable to the geographies of place.

Fostering a climate of collegiality and collaboration (including collaboration on faculty research projects), the department tries to turn what elsewhere become entrenched tensions between techniques into productive debates that tease out new research options and innovations. This emphasis on research effectiveness is also supported in a variety of more material ways ranging from introductory seminars on faculty research and publishing practices to courses on proposal writing. Overall, we seek to enable our students to be excellent but self-questioning researchers: skilled practitioners of a variety of techniques, but also theoretically sophisticated analysts of their own particular positioning in the social relations of research, students who understand the privileges, possibilities, and, ultimately, the responsibilities of research in our globally interconnected world.

While the department encourages wide debates over approaches to research, we also expect graduate research to contribute to specialized and cutting-edge fields of knowledge production. We therefore work from the basis of faculty specializations to foster new research in the following key areas:

- economic development and geographical restructuring
- urban development and politics
- national identity and boundary struggles
- resource allocation and land use
- computer cartography and geographic representation
- goods and services distribution and geographical equity
- migration and population change
- ecology and diffusion of diseases

The depth of specialization in one or more of these key areas depends in turn on the degree program in which students enroll.

The Master's program mission is to provide professional training for students intending to work in occupations requiring the development of liberal arts educational skills at a level beyond that obtained in baccalaureate program. The MA degree also serves as preparatory to students entering the Ph.D. program. As a professional degree geared to preparing students for careers in a wide range of jobs from government agencies to communications services to planning and environmental management, the MA degree does not demand the level of specialization sought from our Ph.D. students. Nevertheless, by combining an advanced liberal arts training with the techniques and knowledge necessary for particular fields of research, the MA program is still predicated on a research driven model. For those students continuing on into the Ph.D. and for those who come to work specifically in the doctoral program, a far more profound level of specialization is required. The primary aim of the Ph.D. program is to educate students for future positions as faculty in research universities, as college teachers, and as highly-skilled workers in some of the most competitive sectors of the contemporary economy. As such, we strive to go on producing scholars and researchers who will continue to be recognized as of the highest quality by their peers. Our vision of the department is that it will increasingly be seen as one of the top five graduate programs in the country, a department and a community of scholarship that will attract the very best graduate students from around the world.

*Autumn orientation* Each autumn quarter we have a program to assist our new graduate students transition into our program. We couple teaching-assistant training sessions with a general introduction to the department, including discussions with faculty and graduate students of program requirements and mechanics, and several social sessions with returning graduate students and faculty to help in the "bonding" process for the new students.

*Graduate Student Handbook* We prepare a handbook for majors which describes program requirements, course registration strategies, typical jobs obtained by majors, and a wide variety of other factors, including a discussion of criteria used by faculty in evaluating the performance of graduate students, and a timeline of the typical graduate student's progress. This document is intended to answer "nuts and bolts" questions that students typically have, as well as providing some strategic advice about graduate program articulation.

*Colloquium* The department comes together each week on Friday afternoons for our Colloquium. This one-hour session (for which students who enroll receive 1 credit; enrollment for at least 3 quarters is required) includes presentations by visiting scholars, faculty in the department and the university, and by our graduate students. It is organized by the graduate students, who work in consultation with the faculty to develop a schedule which contains a variety of offerings over the course of the quarter. Modest support from the Graduate School helps us fund visitors to the Colloquium. On an average Friday about 35 people attend the colloquium, which is followed by a social session with cookies, snacks, and soft drinks. The format in the typical Colloquium session is a presentation for about 40 minutes, and then the balance of the hour devoted to discussion.

*Interdisciplinary Training* We encourage our graduate students to participate in courses outside the department, and to engage in professional meetings as attendees and paper presenters. Our approach to graduate education invites our students to undertake interdisciplinary work. In each of our areas of concentration, in both the Masters and the Ph.D. program, students are encouraged to identify and register for key, substantive courses in related fields. In the doctoral program we have a foreign language or cognate field requirement. Students engaged in foreign area studies often take a number of years of language training to obtain the skills needed to conduct thesis and/or dissertation research in the field. Doctoral students who do not pursue a foreign language training program are required to articulate, in conjunction with their supervisory committee, a cognate field. This requirement provides training in areas such as natural resource economics, computer science, demography and ecology, epidemiology and community medicine, or history, and serves to give added depth to the students primary research specialization in geography.

*Geography 511* All graduate students enroll in Geography 511, Philosophy and Method. In this course they are exposed to aspects of the history of the discipline, major theoretical debates, and emerging conceptual areas. We are currently rethinking the nature of this course, as discussed in section V. The students write a research paper in this course that is intended to help them articulate their research interests, or to become more familiar with an important methodological or theoretical area in the discipline.

*Independent Study* Our program also encourages Independent Study in a variety of circumstances. Some students register for this number and do work in courses numbered 300 or less as remedial work (many of our graduate students come from undergraduate or graduate backgrounds outside geography it is necessary for them to "catch up," and this is

one vehicle to accomplish this goal). In addition, and more common, is the use of independent study to pursue a topic already started in a term paper or in which the student is interested, but is not the subject of a course or seminar. Frequently registrations of this type are related to the articulation of thesis or dissertation topics.

*Mentoring* The faculty and graduate students work in a one-on-one environment on a frequent basis. This interaction is critically important to the success of our graduate program, providing advice on all aspects of life as a graduate student, including curriculum, timing of examinations, articulation of long-run academic and professional goals, definition of thesis and dissertation topics, and providing feedback on work in progress. These sessions provide an opportunity for the faculty to serve as mentors for our graduate students; they are in many ways the core of our graduate program, because they allow for creativity, innovation of ideas, and the personalized articulation of directions for our diverse student body.

*Committee formation & assessment of progress* Graduate student committees are established as soon as practicable. Tentative advisory responsibility is often evident at the time of admission, given our need to manage carefully the admissions numbers with our very high number of applicants. One way we get the students to know the faculty and their interests is through a section of Geog 598 in autumn quarter in which have a "parade of faculty." Each week one or more members of the faculty speak to their research, teaching, and service interests. The Graduate Program Coordinator helps facilitate initial committee and supervisory committee responsibility, and the students are pressed to help flesh out committee composition by the second term. Each February the faculty meets and discusses the progress of each individual student. We review an updated statement of objectives from each student, their course work accomplishments, teaching evaluations, grades, and other evidence regarding their performance. This meeting serves several purposes. First, it helps us flag cases where students need assistance. Second, it gives us benchmark information which can be used in an annual evaluation of teaching assistant applicants. After this meeting we rate the in-house applicants for TA's for the coming academic year; this rating is used by the Chair and Executive Committee when making TA assignments as new positions become available. Third, in specific instances this review leads to student committee meetings, and other actions that are deemed necessary to keep the student's program moving forward.

*Support and Awards* The department provides modest support for students to travel to meetings to present papers, as discussed in section V. We also give graduate students modest financial recognition for their accomplishments at our departmental commencement ceremony each June. We give the Outstanding Teaching Assistant Award, based on undergraduate student nominations and faculty evaluation of TA performance. We also give the Ullman Awards to Master's and doctoral students. The Master's award is given for overall performance, while the doctoral student award is given for written scholarly accomplishment (typically given for journal articles accepted in top peer-refereed journals).

*Faculty-Student Advising and Instructional Relationships* The core of our classes taken by graduate students are offered at the 400 level, in courses with a mixed population of undergraduate and graduate students. An historical tradition in this department is an integrated senior-level and graduate student pattern of registration in courses at the 400 level, as opposed to a separate graduate curriculum at the 500 level as is found in many units at this university and across the country in graduate programs in geography. Our small size has simply not made it practicable to have separate undergraduate and graduate course tracks. At the 500 level we have several courses, in the traditional sense, such as Geog 511 and 526, but most numbers are research seminars. Thus, the most common instructional relationship found between our graduate students and the faculty has been in 400-level courses. We have relied upon individualized student-faculty advising environments to define registrations in courses in the department, in related fields, and at the graduate level. This structure leads to individualized instructional experiences, and while it increases the administrative involvement of faculty, students, and staff, we believe that it leads to a superior graduate (and undergraduate) education over that which would be delivered if we were to have each faculty member offer a substantive course in their area of expertise at the 500 level, and then also have a series of seminars. This would push the faculty course-load to unacceptably high levels, given current resources.

This section has detailed the broad structure and philosophy of the graduate programs in the department. More detail is provided in Section V.

#### **Basic Program and Unit Data:**

These data are presented in Appendix A and discussed in all sections of this report. In addition as we discuss these data, we compare Geography with the social sciences overall.

#### **Demand for Our Graduates:**

*Regional Demand:* A study commissioned by the Provost's Office in June 1988, and carried out by Prof. Beyers of our Department, surveyed employers in the Puget Sound region regarding their demand for college educated employees. This survey found that employers in all sectors expect a larger proportion of their workforce to be college educated in the near future. The majority of college educated workers are hired locally and of these, demand is divided equally between people with a liberal arts education and those with health, engineering, or other professional training. Employers in all sectors want college educated workers with writing and communications skills, the ability to reason and solve problems, a range of research design and analysis skills, and the ability to work well with others. Further, employers desire to use more interns in their businesses. The Department has emphasized these kinds of skills in our degree programs and furthermore, has been very successful in placing graduates in a broad spectrum of jobs across the major sectors of the regional and national economy. Further, our majors are engaged in a wide variety of internships, despite a relative lack of support to develop better contacts with local businesses. The Department could be more engaged in outreach

in order to develop a more comprehensive set of relationships and listings of internship opportunities. This is a crucial area that would devolve onto our Assistant to the Chair if we had more support for routine advising. Appendix E lists the kinds of skilled internship positions taken by our majors. It is notable that in the majority of these cases, our students are uniquely qualified to perform these jobs, indicating that we are teaching skills that are in demand in the work place. We discuss the placement of our graduates from all three degree programs in section V of this report titled 'Students'.

Employing several forecasting techniques, Beyers' study indicates that the educational profile of the Puget Sound workforce will continue to have a growing share of college educated workers. This trend has persisted for decades and current estimates are that between 1988 and 2010, more than 10,000 jobs demanding bachelors degrees and 3,500 jobs demanding advanced degrees will appear in the region annually. As noted above, the Geography Department is positioned to continue supplying employees that dovetail with this demand profile.

*National Demand:* A study commissioned by the National Academy of Sciences and published in the *Professional Geographer* in 1995 (Gober et.al., 1995), illustrates trends in both the supply of, and demand for, geography graduates. There has been a dramatic increase in graduate enrollments in geography in the eighties and early nineties, outstripping other social sciences. At the undergraduate level, enrollments in geography programs in the Western region of the U.S. increased by 52.9% between 1986 and 1994. These trends, coupled with the widespread implementation of Geography National Standards in the K-12 system will mean more incoming geography majors with heightened awareness of this field of study.

The study by Gober et. al. surveyed graduates at all degree levels about their current employment status. This study found that geography graduates enter a somewhat different labor market than the typical social science graduate. Specifically at the national level, whereas for social sciences overall only 16% are employed in jobs closely related to their field of study one year after graduation, this number is 38% for recent geography graduates. These graduates are frequently employed in jobs such as environmental manager, urban and regional planner, teacher, cartographer, or GIS specialist. In addition, geographers are employed extensively in the private sector, using their skills in business, even though not working in areas conventionally associated with the field. Looking at students with advanced degrees, the authors find a strong association between GIS and other technical expertise and entry into the non academic workplace. Private sector employers are especially interested in geographers with graduate degrees involving strong technical skills such as cartography, remote sensing, GIS, statistics, and mathematical modeling -- all areas of traditional and ongoing strength for our Department. The latter findings correspond with trends noted in the regional study by Beyers in which employers demanded graduates with social science training and abilities in writing, analytical thinking, technical skills, and ability to work with others. All of these are areas emphasized in the Geography program at the University of Washington.



Several issues emerge in looking at future demand conditions for geography graduates. First, Gober et.al. (1995) note that positions at the collegiate level for geographers with advanced degrees will be primarily replacement lines. Further, and depending on the success of the National Geography Standards Initiative, there may be growing demand for geographers at the K-12 levels. Another challenge facing geographers in the job market are trends towards privatization of government jobs, and the displacement of aerospace workers with skills similar to many geographers, and economic globalization, which takes employment overseas. In order to address these challenges, geography must continue to provide a top quality educational that is accountable to places and communities. We must continue to graduate people with both a broad based liberal arts background combined with strong technical skills since this differentiates the discipline from many other fields of study. The Geography Department at the University of Washington has been out ahead of these trends, balancing field-based technical skill training with competence in writing, numerical analysis, decision-making, problem-solving and critical thinking. We have examined these national and regional trends in employment demand and have designed our program to respond to these labor market needs. See our discussion of student placement in section V.

### **III. FACULTY**

See Appendix B for both a list of faculty members, graduate committees chaired and graduated and also their abbreviated curriculum vitae.

#### **Visiting, Part-time, and other Faculty**

Visiting and part-time faculty have been an element of the Department's programs over the last several years. We annually receive between ten and twenty requests from faculty members in Geography Department's around the world for visiting research appointments. The majority of these requests are from scholars who wish to come to our Department on sabbatical to interact with members of our faculty.

In addition, as a small department of fourteen faculty with heavy student demand both from majors and non-majors across campus we have enhanced our curriculum at all levels by bringing in visiting faculty. This has occurred under a variety of mechanisms including; using sabbatical recapture funds to bring in visitors; covering the teaching of faculty with heavy administrative responsibilities; bringing in members of our Emeritus Faculty to offer high demand courses; and earning external grants to fund visiting professors. For example, Victoria Lawson earned a Ford Foundation Grant to bring in visiting Professors for a week-long visit to enhance graduate research training. These visitors included Dr. S. Radcliffe, University College London; Prof. C. Katz, City University of New York; Dr. G. Pratt, University of British Columbia; Dr. J.P. Jones, University of Kentucky; and Dr. A. Morrison, Tulane University. These types of arrangements have brought visiting faculty who have enhanced both our undergraduate and graduate curriculum by their presence. These colleagues include Dr. Brian Holly, Kent State University; Dr. M. Meade University

of North Carolina; Dr. J. Agnew of Syracuse University, Dr. Audrey Clarke, Northern Illinois University; and Dr. Stephen Frenkel, University of Oregon. One of the problems facing the Department is a severe shortage of office space and other academic support services for our visiting scholars and teachers.

Faculty from other units on campus and also other organizations also enhance the activities of the Department. Specifically, we have two adjunct faculty members, Dr. Avery Guest from the Department of Sociology and Dr. G. Hart from the School of Medicine. In addition, we have three affiliate faculty members Dr. Kathleen Braden of Seattle Pacific University, Dr. Richard Conway of Conway Associates and Dr. Michael Hayes of Simon Fraser University. These faculty play a variety of important roles in support of the department including teaching graduate and undergraduate classes, serving on graduate student committees, and presenting and discussing their research with members of the Department through our weekly colloquium series.

### **Faculty Distribution and Staffing**

As noted in the history of our program, the Department specializes in human geography themes within our discipline. The Department has continued to build on its ongoing strengths across the breadth of human geography since our last self-study in 1985. Specifically, under Morgan Thomas' leadership, the Department has hired a number of highly productive and innovative faculty -- Nyerges (1985), Lawson (1986), Chrisman (1987), Chan (1991), and Jarosz (1990) and who have strengthened the following areas i) understanding human settlement systems, economies, and cultures, ii) measurement, representation, and analysis of the relationships between people, places and environments, and iii) examining how the identities of individuals and societies are rooted in particular places. The considerable changes represented by these hires prompted the Department to conduct an interim study on program direction and faculty hiring needs in 1990. This study recommended that future hires should be capable of working in one or other of a set of critically important approaches or substantive areas in the discipline (i.e. GIS, trade and transportation, human-environment interactions, gender and ethnicity studies, political-economy, history, philosophy, and methods in geography, and/or local knowledge and regional approaches).

Since this time the faculty has made two hires that have filled some of these priorities -- Katharyne Mitchell (1993) who works on international economic dynamics, the Pacific Rim and intraurban social and economic change, and Matthew Sparke (1995, appointed jointly with the Jackson School) who works on philosophy and method in geography, and on political-economic dynamics in Canada and the U.S. under globalization. The faculty are currently engaged in a job search to fill the further needs of the Department as they continue to be articulated. While the position descriptions are broadly defined, the faculty feel that we have urgent staffing needs in the areas of nature-society relationships, trade and transportation, and analytical methods.

### **Underrepresented Groups: Faculty**

Three of our faculty are women (23.1% of total faculty), one at Assistant, one at Associate and one at Full Professor ranks. This compares favorably with national data where for the discipline as a whole 16.7% of faculty are women (as computed over the last 25 years during which our current faculty was hired). One of our faculty is Asian and is classified as a minority (7% of total faculty). We have been aggressive in seeking qualified minority candidates for faculty positions. The commitment of the Department to this end is evidenced by our current effort to recruit a senior African-American scholar as a member of our faculty. In order to continue to improve diversity on our faculty, we ensure that underrepresented groups serve on search committees and that our graduate students have considerable voice in the hiring selection process. We also take seriously the process of faculty mentoring. All faculty at the ranks of Assistant and Associate have a mentoring committee, chosen by that faculty member in conjunction with the chair. These committees typically meet twice per year with the junior colleague in constructive discussions about professional achievement. As a Department, we have been committed to protecting our junior colleagues from excessive service and graduate student advising responsibilities.

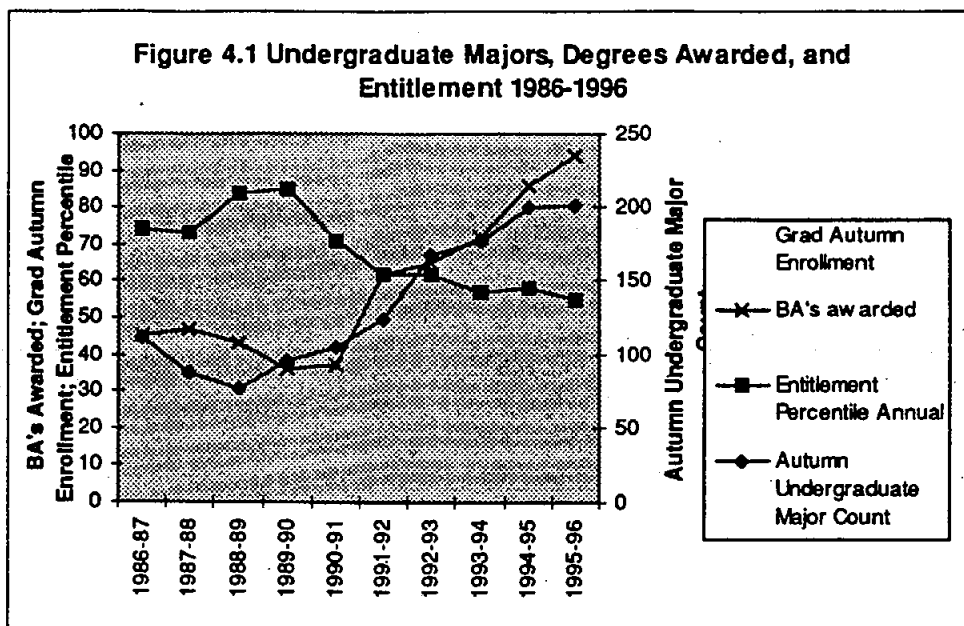
## **IV. STUDENTS**

### **Undergraduate Students: Strategies for Meeting and Shaping Increased Demand and Graduation Patterns in Undergraduate Programs**

The baseline data reflect daunting challenges Geography has faced over the past ten years as a result of:

- more twice as many majors (up from the 85-90 range to the 200 -225 range),
- 40 percent higher faculty productivity, as measured by the department's FTE entitlement percentile and SCH generated per faculty FTE.
- increased class size, and
- 30-50 percent more BA degrees, and

these trends are represented in Figure 4-1:



Our response to this demand has been strategic and successful, directly translating into more student credit hours (SCH, despite fewer faculty), and one-third more SCH/faculty. Moreover, our entitlement percentile—perhaps the truest measure of faculty teaching productivity-- has been nearly cut in half (note that percentile is comprised of both undergraduate and graduate enrollments). However, these increases in enrollment reflect a considerable challenge to us as educators. The Department has yet to fully address the ways in which we will deal with these enrollment increases without compromising educational outcomes. This will involve serious attention to the use of educational technologies and creative pedagogies to maintain educational quality and to meet our learning goals in the face of increasingly large classes.

We instituted entrance requirements beginning Autumn Quarter, 1995, and cannot yet fully analyze their impact, except to say that we attribute the 10% drop in our major count for 1995/96 over 1994/95 to the delayed entrance caused by these new requirements.

Given our linking of curriculum, analytical skills, software tools, and career and professional development, we measure our success with undergraduates in terms of *accountability* (both greater faculty productivity and more self-conscious and cohesive development of analytical skills in the majors), and *access* (more majors, larger classes, more key courses linked to skills development, higher graduation rates, lower attrition rates, faster-than-average time to degree):

*Major count.* By this measure, we have succeeded to the point of having to add more faculty and TAs to reduce our burgeoning class size.

*Faculty Productivity and Utilization.* One significant qualitative measure of faculty utilization is the percentage of SCH taught by ranked faculty. By this measure, Geography faculty, who teach an average of 95.2% of all departmental SCH, rank the

highest in the social sciences, and well above the social science average of 86% on this measure.

Our increase in entitlement percentile from 83.6% in 1989/90 to 55% in 1995/96,<sup>1</sup> is one indicator of our increased faculty productivity. As noted on Table 8.1 (comparing social science departments' productivity), our credit hours per faculty FTE count is approximately 40% higher than the social science average, and, in 1995-96, was actually the highest in the university for programs with over 7,000 SCH/year.

*Increased Graduation Numbers and Faster Time to Degree*. As Figure 4.1 indicates, our production of BA degrees has increased dramatically, from an average of 41 per year from 1986-91, to an average of 75.8, from 1991-96, with a regular increase of 15-20% over that period. Nearly half of our majors in 1995-96 (94 out of an average of 192), earned BA degrees in 1995-96. Streamlined course requirements and more careful course planning, both hallmarks of the newly-revised major, are expected to increase this graduation rate in coming years. Moreover, as reflected in Table 4.1, our time-to-degree rates compare favorably with those of both the UW as a whole and with the other social sciences:

**Table 4.1 Average Time To Degree, 1993-96**  
(in calendar years)

	Geography	U.W.	Other Social Sciences
<b>Bachelor of Arts:</b>			
<i>Transfer students</i>	3.4	3.6	4.0
<i>Non-transfer students</i>	4.9	4.9	5.1
<b>MA</b>	2.3	2.6	2.7
<b>Ph.D.</b>	5.7	6.9	8.0

*High retention rate.* Over the past four years, we have consistently retained between 80-83% of our majors, retention being defined as the percent of Autumn Quarter majors in 1992, 1993, 1994, and 1995 who either had graduated or were still enrolled in Autumn, 1996. These attrition rates are comparable with those of the UW in general and the Social

<sup>1</sup> (SCH/FTE in the College of Arts and Sciences weighted formula: weighted FTE/SCH, where  
1 faculty=50 SCH at courses numbered 600+  
70 SCH at 500  
165 SCH 300/400 level  
300 SCH 100/200 level).

Thus a 5-credit 400-level course with 60 students generates 300 SCH.....165/300=.55 percentile, whereas a 5-credit 200-level course with 60 students also generates 300 SCH, but 300/300=a percentile of 1.00. Thus the LOWER the percentile, the HIGHER the faculty productivity, since they are producing that many more weighted SCH than what is considered the equivalent of one FTE faculty appointment.

Sciences in particular.

*Re-allocation of enrollments.* Having to accommodate this many more majors with 20% fewer faculty has required some strategic marshaling of faculty resources and curricular emphases, especially with reference to our obligation to produce students who can meet future social needs, and have marketable analytical skills. We have addressed these future labor market and social needs by dedicating our resources into four main core competencies, each with its distinctive set of issues, problems, analytical approaches, and connections:

- **Geographic Information Systems (GIS).** The view of maps as data bases and information systems, with emphasis on data sources and quality assessment. Specific applications for land use planning, urban development, location analysis, transportation planning, migration analysis, and resource analysis (linked to environmental risk analysis)
- **urban/economic processes and patterns:** social trends and demographic patterns; housing patterns; inequality of income, social services and transportation resources, etc; land use, growth management and economic development; urban mass transportation systems, location analysis, regional and rural development, location theory, and the political geography of settlement, etc.
- **regional geography and international development studies:** globalization processes; the political economy of development; nationalism and political identity and allegiances; migration patterns; labor markets; gender roles; and structural changes in national and regional economies.
- **medical geography:** epidemiological patterns; disease ecology; differing patterns and models of health care .

as Table 4.2 'Shifting Curricular Emphases' shows, we have shifted our enrollment into the main foci indicated above. We believe that these key skill areas will best prepare our students for a lifetime of critical citizenship and professional development.

Table 4.2: Changing Enrollment Patterns

## Medical

Course	Autumn 1987- Spring 1991	Autumn 1991- Spring 1996
Geography of Health and Health care		98
Patterns of Health and Disease	40	101
<b>Totals</b>	<b>40</b>	<b>199</b>
		397% increase

## Cartography and GIS

Course	Autumn 1987- Spring 1991	Autumn 1987- Spring 1996
Principles of Cartography	292	614
Map Sources and Errors	8	53
GIS Analysis	81	282
Urban GIS		267
Problems in Map Compilation and Design	18	
GIS Workshop	24	114
Problems in Map Reproduction	26	
Computer Cartographics	48	45
GIS Colloquium		57
<b>Totals</b>	<b>497</b>	<b>1432</b>
		188% increase

## Urban Processes and Patterns

Course	Autumn 1987- Spring 1991	Autumn 1991- Spring 1996
Urbanization in Developing Nations	229	437
Geography of Cities	391	983
Geography and Inequality in the US	168	189
Local Economies and Market Areas	30	65
Regional Analysis	72	101
Social Geography	53	16
Location Models	104	116
Population Distribution and Migration	38	183
Theories of Location	62	58
Intraurban Spatial Patterns	70	123
<b>Totals</b>	<b>988</b>	<b>1834</b>
		85% increase

**International Development and Economic Globalization**

	Autumn 1987 - Spring 1991	Autumn 1991 - Spring 1996
Urbanization in Developing Nations	229	437
The Pacific Northwest	203	411
Eastern Europe	36	28
Canada	29	113
East Asia	115	30
Latin America: Landscapes of Change		187
Russia's Changing Landscapes	29	46
The Developing World	57	56
China	13	102
Geography of International Trade	362	253
Regional Development	15	27
World Hunger and Resource Development		233
Geopolitics		32
Eastern Europe	42	15
South Asia		9
Contempor. Dvlp. Latin America	99	125
Geography & Gender		141
Russian Population & Urbanization	38	69
Resource Use Russia	19	43
Industrializ & Urbaniz. China	31	93
Geography & Industrial Change	30	34
Central Asia		17
Total Increase	1347	2501 86%

As Table 4.2 indicates, we have dramatically increased enrollments in these core areas since 1991. We pick this year as a watershed because 1) new courses (boldfaced--e.g., Geo. 461, 463, 230, 330, 371, 431) were coming fully into our offerings by then, especially those offered by newly-hired faculty; 2) we spent the 1988-90 period assessing our future and planning these directions; 3) it falls more or less in the middle of the 10-year review period, thus allowing us to show dramatic changes of direction over this time span. We realize that there are more courses being counted in the 1991-96 period than in the 1987-91 period, thus somewhat exaggerating the comparison. But we argue that these new courses do represent new directions for the department, so we believe the comparison to be illustrative of crucial directions of growth in our program. By thus re-positioning our curriculum to both anticipate and shape our projected ever-increasing demand, we feel we can meet higher demand with assurance, especially with the resource adjustments suggested in Section XI

*Increased Class Size.* The Department has large class sizes across all of our undergraduate offerings as compared with the social sciences overall. In addition, class sizes have increased dramatically in our upper division courses since the late 80s.



**Table 4.3: Lower-Division (100/200) class size, 1993-96**

Year	GEOG Lectures	SocSci lectures	GEOG Quiz	SocSci Quiz
1993-94	200	53.5	28.7	25.8
1994-95	141.8	51	28.6	24.5
1995-96	121	51.9	28.6	23.7
<b>Averages:</b>	<b>154.4</b>	<b>52.2</b>	<b>28.7</b>	<b>24.4</b>

Our lower-division class size also continues to be significantly higher than the social science average--especially our lectures, which are at three times the social science norm for lecture courses. As with the large upper-division class size, we are concerned to maintain quality with ever-growing numbers of students. Over the past decade we have worked extensively with the Center For Instructional Development and Research (CIDR) to improve the quality of our 200-level courses by working on such issues as course design, assignment writing, holistic grading training for TAs, consistency between assignments, lectures, readings and exams, and clear articulation of course objectives and skills taught. Still, it is a challenge to offer an educational experience with sufficient depth, complexity and rigor to such large classes. While most of our increased TA allocation in the past year has gone into further expansion of large 100- and 200-level lecture courses (Geog 230, 277, 280), we hope to use any further TA allocation increases to develop a new smaller-scale model for general education courses to complement these key introductions to urban geography, development geography and medical geography. These courses would be taught by advanced doctoral students, and would offer more opportunity for class discussion, student-instructor contact, and writing and other assignments that are difficult to do well in a class of 150 or more.

**Table 4.4: Average upper-division class size, Geography and Other Social Sciences, 1987-96**

Year	Geography	Social Sciences
1987-1988	23.2	NA
1988-1989	22.2	NA
1989-1990	18.4	NA
1993-1994	39.1	29.3
1994-1995	35.6	29.6
1995-1996	37.8	29.9
<b>1993-96 average</b>	<b>37.5</b>	<b>29.6</b>

*Note: includes all 300/400 level courses, including those numbered 490-499, which typically are low enrollment courses in such formats as seminars, senior essays, internships, tutorials, and independent study)*

Of the courses summarized in this table, 44% of our upper division courses enrolled somewhere between 50-90 students, as follows: 23% had 50-60 students, 15% had 60-80 students, and 5% had more than 80 students. These statistics do not include

Evening Degree courses or small, independent study courses numbered 490-499).

*Are our advanced courses getting "too big"? What constitutes educational quality in advanced undergraduate courses, and what strategies do we employ to assure such quality?*

Success by the above criteria presents a challenge to the Department. This is particularly true with large enrollments in 300 and 400 level classes. Since our 400 level offerings are more theory oriented and empirically intensive (and in some cases technology intensive), we are faced with some difficult challenges in terms of continuing to ensure the quality of the education we provide. For example, we find it increasingly difficult to provide a first-rate "capstone" or senior-year educational experience to classes with such high student/faculty ratios. Such advanced work, in our experience, requires close mentoring and student/faculty interaction, frequent discussion of subtleties and nuances which cannot be appreciated by neophytes in the subject, and careful monitoring of the quality of student work. For example, because our GIS labs are now literally booked throughout the teaching day for lab sections, it is no longer possible to devote any "extra" attention to an individual student who may be struggling with an operation or analysis which she/he must learn in order to progress in the course. And the shortage of available lab time and access to the advanced GIS software also means the student cannot "make up" this work at a later date. Instead, students struggling with the material tend to fall further behind, while advanced students also lack the time and resources to go beyond course requirements and explore their own creative avenues of analysis and exploration. Moreover, many of these 300/400 level courses which are designed as "W" courses find themselves at the breaking point with insufficient resources (TAs or readers) to ensure that recursion (that is, the opportunity for students to respond to comments on written drafts) is built into the writing process, thus defeating the purpose of a "W" designation. *In short, as class size increases, quality control is increasingly imperiled.* The Department is attempting to deal with these challenges through a series of short and long term solutions.

### Short-term Solutions

*Limit class sizes at the three and four hundred levels.* Classes such as Population Geography 445 and GIS 460 have had 75 to over 100 students enrolled. In both of these examples, there are real limits on further size increases -- limits include access to computer technology or due to the labor intensive writing and editing emphasis in these classes. The faculty believe that while certain accommodations for larger class sizes are possible, there are at present, real limits. Students in upper division courses at a quality university must have one-on-one access to the faculty, students must be exposed to the writing process of draft and peer review processes, and students must have opportunities to work on independent or group research projects.

*Breaking down the boundary between the classroom and other learning environments and media.* Our faculty is increasingly moving away from the traditional lecture format, toward diverse active learning strategies, including collaborative and small group research

opportunities; student panel discussions and role-playing; one-on-one mentoring; peer critiquing; independent research opportunities; the use of e-mail forums and question/answer sessions for interest groups within the major

*Breaking down the boundaries between the university and society.* Many of our students supplement large upper-division lecture class with Service Learning and internship experiences, and case-study/group project formats.

### **Long-term Solutions**

There are some longer term solutions to the quality versus access dilemma. These solutions will require the University to respond with additional faculty, resources and flexibility.

*Departmental learning intranet.* The development of such an intranet would foster a transfer of skills into a computer environment that should combine individual course webs (see Geo. 460 for an early example), curricular webs (as offered by the UW Psychology Dept.), and other programs which integrate and transcend individual courses. In addition, the intranet would include self-paced, stand-alone, computerized tutorials to both help students sharpen specific skills sets and to plug any gaps between our beginning and advanced courses in terms of necessary skills, backgrounds, contexts, and awareness of key questions and concepts surrounding a specific discourse. This would also include WWW hyperlinks and could include courses offered but not scheduled.

*Distance learning.* There are two meanings to distance learning currently in use on campus – correspondence coursework and incorporation of information technologies into pedagogy and course design. Both of these might improve access without compromising the quality of the education we offer.

Correspondence courses allow students to pursue coursework without any formal, face-to-face contact with the faculty. Currently the department offers two correspondence courses via University Extension, Geography 102, Geography of World Regions and 277 Geography of Cities. The World Regions course is among the most heavily enrolled in the distance learning program, usually enrolling 50 to 60 students. We are currently revising, updating, and rethinking this course to make more use of current video and computer technologies. We plan to upgrade and revise the student handbook and change the assignments in an effort to make the course more intellectually challenging and interactive. Our goal in this revision is to help foster critical and analytic thinking skills and replace the emphasis on information retention as the key objective of this course.

Partial distance learning is another manifestation. Courses can be redesigned to make fuller use of information technologies such as the internet. Two of our undergraduate offerings exemplify the possibilities here, and signal a direction in which the Department is currently moving.

*Geog 460* class has evolved from a set of paper lecture notes to a web-based resource that points the student to resources around the world. Many readings that had to be placed on reserve (and thus limited in access) have been replaced by documents freely accessible on the network. By this mechanism, the course can remain more current in the development of the technology, and more rooted in actual applications. This transition does not imply some radical conversion to a completely 'distance learning' model, but it leads in the direction of supporting access. In the Winter of 1997, the *Geog 560* seminar will join with a dozen other campuses to offer a collaborative discussion of the ten issues of the research agenda agreed by the members of the University Consortium for Information Science (UCGIS). This experience will still include the class contact hours, enriched with internet-based discussion and sharing of documents.

*Geog 207*, as given by Professor Krumme, has been restructured around web-based resources and discussions. The University resource center UWIREN provides significant assistance in this process. As the Collaboratory comes into full use, we expect other classes to develop their own resources. These will enhance the value of our class time and open access to a wider audience. The current web resources of Krumme and Chrisman receive substantial use from off-campus, without any efforts to publicize them or to package them for this kind of use.

*Use of Collaboratory* to break large classes into smaller, collaborative learning communities with focused problem-solving and case studies as focal points of modeling and analysis in these small group sessions. For example, the Department has taken an important step in this regard, by developing the Collaboratory to allow students to work in teams using computer technology to access internet resources and to pursue the learning innovations being developed under the UWIREN program. This model may lead to a different style of course, where many of the resources are on the internet and faculty are less involved in formal lecturing and more involved in facilitating active learning and collaboration. The Collaboratory will be employed in both of the class models described above.

*Skill and curricular articulation.* To emphasize the entire process of skills development and intellectual growth throughout the undergraduate years and beyond, we have tried (see section 5.C.1., below, on Curriculum and Program Changes) to enable students to better articulate and develop those sets of interests and skills that will best prepare them for citizenship after college and for various (and multiple) career paths. Through these means, we feel we are providing the means to help students succeed in the three critical areas outlined at the outset of this study: a) ability to engage in and shape a variety of public policy debates; b) ability to be critical media users; and c) ability to purposefully develop and articulate methodological and technical versatility.

## Summer

We have averaged about 1,600 SCH per summer quarter, as represented by approximately 340 students. Summer classes help our students either begin their work in the major or

“catch up” on required fundamentals courses so they can progress through the curriculum during the September—June academic year. Typically, 40% of these enrollments have been in lower-division courses, and another 25% in courses required for all majors. These enrollments have remained steady over the past five years, despite the fact that fewer teachers take these courses than was the case 10 years ago, as a result of changes in teacher certification and continuing education requirements. We have emphasized three main course clusterings during summer, in addition to our lower-division courses: the geography of transportation and international trade, cartography, and environmental/resource analysis, and would dedicate any increase in summer resources to continuing to develop the summer curriculum in those directions.

### **Placement of Undergraduates**

We addressed overall employment patterns and our role in meeting future regional labor market demands in Section II above. We have worked strategically to align these demands with our curriculum, our advising, and our attempts to enable students to become aware of, articulate, and plan the systematic development of necessary skills. However, the shortage of staff to assist in career development, career placement, or alumni tracking has made it extremely difficult to systematically develop a full set of data in this key area. We are confident in our graduate student data, but at this point must rely on anecdotal information for our undergraduates.

In looking at the placement of our undergraduate alumni, we find them working in planning offices at all levels of government. In addition, many are employed in the private sector as land use, environmental, or economic development analysts; as route planners for airlines; as international trade and logistics managers; as GIS specialists, and as health care researchers. We have an alumni network best tracked through an organization called The Professional Geographers of Puget Sound. Piecing together their roster with our collective informal knowledge of where our alumni work, we offer the following cross-section of alumni jobs, from 1991-1996:

### **Table 4.5** **Selected Places of employment for graduates of UW Geography Department, 1991-96**

Administrative Specialist III (Sewer/Drainage Project), City of Seattle-2  
 Administrative Assistant/Sales, Brook Brothers  
 Assistant Director, Carlson Office at UW for Leadership and Service  
 Assistant Planner, City of Shoreline planning department  
 Assistant Planner, Dept. of Planning and Urban Development, Boulder, CO  
 Associate Appraiser, Property Counselors  
 Associate Transportation Planner, TDA Inc.  
 Aviation Planning Consultant, Port of Seattle  
 Business Geographics consultant, Benchmark & Associates  
 Cartographer, Snohomish County  
 Cartographer/Field Data Capture Specialist, ETAK  
 Cartography Software Specialist, ESRI, Redlands, Calif.

Commissioned Officer, Air Force (2)  
 Commissioned Officer, Marines (2)  
 Commissioned Officer, US Navy (3)  
 Computer Graphics Designer, Microsoft  
 Curriculum Development Manager, Lakeside School  
 Data Analyst, Vasey Engineering  
 Demographer, King County  
 Director of Operations, US Northwest Express  
 Econ, Market, and Valuation Analyst, Mundy and Associates  
 Economist, City of Seattle  
 Environmental Analyst- Project. Parametrix Inc  
 Environmental Planner/Regulatory Specialist, Harza Northwest Inc  
 Geographer, U.S. Dept. of Commerce  
 Geographic Positioning Systems Specialist (navigation), Bremerton  
 Geomodeler, Microsoft (6)  
 Geopolitical Specialist, Microsoft  
 GIS Analyst, City of Bellevue  
 GIS Analyst, City of Seattle and King County  
 GIS Analyst, Eco-logic GIS Consultant Firm  
 GIS Manager, City of Seattle  
 GIS Specialist, City of Seattle, City Light (3)  
 GIS Specialist, Sprint Spectrum  
 GIS technician, Microsoft  
 GIS Technician, Sverdrup Corporation  
 GIS/Planning Dept, Cities of Lake Stevens and Marysville  
 Greater Downtown Spokane Partnership, Analyst and Econ. Development Specialist  
 Immigration Specialist, Canadian Embassy  
 Import Traffic Manager, US Northwest Express Int'l Transport  
 Information Specialist, First City Bancorporation of Texas  
 Int'l Sales Manager, Weyerhaeuser Inc.  
 Lead Cartographer, Microsoft  
 Management Analyst, King County Solid Waste Division  
 Manager, John L. Scott Real Estate  
 Manager, Ocean Chartering Tower Group Int'l  
 Market Analyst, Chase Development  
 Market Analyst, John L. Scott Real Estate, Kent  
 North Corridor Project Manager, Regional Transit Authority  
 Office Manager, The Collins Group  
 Pharmacist's Assistant/Bookkeeper, Mission Pharmacy  
 Planner, Puget Sound Regional Council  
 Planner/GIS Specialist, Snohomish County  
 Planning Assistant, Snohomish County-2  
 Planning Associate, City of Kirkland  
 Planning Information Specialist, City of Kirkland  
 Planning Support Technician, King County  
 Planning Technician Snohomish County -3  
 Program Analyst, King County  
 Program Manager, Microsoft  
 Project Analyst, The Walter Group  
 Project Analyst/Public Information Specialist, Federal Reserve Bank of San Francisco  
 Property Manager, SLF Properties  
 Quality Assurance Manager, Genasys II Inc.  
 Real Estate Appraiser, Lori Safer Appraisal Inc.  
 Regional Manager, IBM, Bellevue

Research Analyst, Mundy and Associates  
 Research Analyst, US West Communications  
 Research and Evaluation Assistant, City of Seattle (2)  
 Research and Evaluation Assistant, Geographic Systems, City of Seattle-Engineering  
 Researcher, Mundy and Associates  
 Sales Agent, Caldwell Banker  
 Senior Planner, City of Lynnwood  
 Senior Planner, Snohomish County  
 Senior Systems Analyst, City of Seattle-2  
 Technology Specialist, DMR Group Inc.  
 Transportation Planner, UW Transportation Office  
 Transportation/Trade Specialist, Ace Hardware, Chicago  
 Urban Economist, City of Seattle  
 Urban Planner, City of Seattle  
 Vice President and Manager, Washington Mutual Savings Bank  
 Wetlands Management Specialist, Washington State Dept. Of Ecology

### Underrepresented and Nontraditional Students: Undergraduates

As indicated by Table 4.6, our undergraduate numbers are unsatisfactory in terms of minority representation since we lag behind numbers both locally and nationally. We have attempted to attract these populations by speaking to various minority groups, and working with the Office of Minority Affairs (especially its Early Identification Program) to increase awareness of Geography among undergraduates of color. Moreover, we have consciously stressed the many curricular tie-ins that speak to the quality of life of minorities in the US, including courses or major course units on inequality (of housing, income, transportation availability and affordability, medical care, etc.), poverty, migration patterns, economic mobility, and the effects of economic globalization on labor markets and employment patterns. However, we have to date no overt recruitment or retention programs for minorities and this is a major gap in our program. In section XI we address these issues in terms of a request for a re-allocation of UW resources to enable us to develop outreach and retention programs for both underrepresented groups and nontraditional students.

**Table 4.6: Underrepresented, Nontraditional and Minority Undergraduate Geography Majors, 1993-1996**

<i>Students Enrolled</i>	<b>UW Geography</b>	<b>National Geography</b>	<b>UW Overall</b>	<b>UW Social Sciences</b>
<i>Male</i>	67.8%	N/A	49.7%	46.5%
<i>Female</i>	32.2%	N/A	50.3%	53.5%
<i>Minority</i>	25.0%	N/A	28.5%	25.9%
<i>Percent of students age ≥ 30</i>				
<i>Overall</i>	12.5%	N/A	16.8%	11.0%
<i>Female</i>	19.4%	N/A	19.7%	12.8%
<i>Male</i>	9.2%	N/A	12.5%	9.1%

<b>BA's Granted</b>				
<i>Male</i>	63.5%	64.0%	46.2%	N/A
<i>Female</i>	36.5%	36.0%	53.8%	N/A
<i>(Minority)</i>	(17.8%)	(7.9%)	24.0%	N/A
<i>Total</i>	100.0%	100.0%		

Notes: "Minority" includes African-American, American Indian, Asian-American, and Hispanic American. International students are not included in the "minority" count. Social science figures *exclude* Geography.

A more positive trend is an increase in the representation of women age 30 and over in our undergraduate program - currently between 25-35% of our female undergraduates are aged 30 or over. These numbers are approximately 50% higher than those for the entire university (16-20% over the same period). We attribute this to our ability to attract many mid-career female students looking to change careers, attracted to the major for the marketability of the major based on the analytical, statistical, and cartographic skills learned in the major.

### **Graduate Students: Improving the Quality of Our Program**

The most striking trend in our Graduate Program baseline data is the steep increase in applicants—nearly a doubling from 88 in 1990 to 158 in 1994-5. We attribute this increase to both our traditional strengths in economic, population, medical, urban/social and regional geography and quantitative methodology, as well as growing recognition of more recent additions of faculty teaching GIS, development geography, social theory and feminism.

Although applicants' GPAs and GRE scores have remained consistent over this period, we have been much more selective in our admissions process, increasing our denial rate from 58% to 80%. We have worked hard to match student research interests and academic training with that of our faculty, having made a "good fit" with our expertise one of the primary criteria for admission, provided the applicant was qualified by an impressive prior academic record. In turn, this idea of looking for a "good fit" has served our successful applicants well in terms of their ability to work with faculty in securing outside research posts, grants, and fellowships (see Table 5.2 below).

Except for the 1993-94 academic year, our enrollments have remained stable, in the lower 60s -- a cap set by the graduate school. We have shown marked increases in full-time students (up from 66% in 1991-2 to 80% in 1994-95), in female students (up from 21% in 1986 to 42% in 1996), and in Continuing Students (62% in 1993, 80% in 1995). The implications of the increases in full-time and continuing students are addressed in the section below.

### **Graduation Patterns**

The number of degrees granted has stayed around 15 per quarter since 1986, and we note



	Development	
MA	no information	
MA	Planning services for the elderly	Good Samaritan Hospital, Puyallup
Ph.D.	Researcher and instructor	Ecole Polytechnique Federal de Lausanne, Switzerland
MA	Middle School Director	Lakeside School, Seattle
MA	World Bank Analyst	Russia
Ph.D.	Instructor, Geography	Dartmouth College
Ph.D.	Senior analyst	Washington State DSHS, Olympia
Ph.D.	Assistant Professor	Singapore National University
Ph.D.	Co-Director, Rural Health Research Center	UW Dept. Family Medicine
MA	GIS Analyst & Researcher	Battelle, NW, Seattle
MA	College admissions officer	Los Angeles
MA	Middle school teacher	Seattle Public Schools
MA	Student advisor	College of Engineering at University of Washington
MA	Housing Department Planner	City of Seattle
MA	Program Analyst	Department of Social and Health Services, State of Washington
MA	Middle school teacher	Seattle Public Schools
Ph.D.	Assistant Professor, Geography	Univ. of Colorado
MA	counselor	Education Talent Search, UW Office Minority Affairs
Ph.D.	Research Associate	UW Dept. Family Medicine
not graduated	Assistant Professor, Geography	Florida Atlantic University
Ph.D.	Oil industry consultant	Phoenix, AZ & Houston, TX
MA	Planner	City of Shoreline
MA	Instructor	U.S. Coast Guard Academy
Ph.D.	Associate Professor, Geography	Univ. of Colorado
Ph.D.	Researcher	Wisconsin Transportation Dept.
MA	Ph.D. student, Geography	Penn State University
Ph.D.	Program director	United Nations Commission on Trade and Development, Geneva, Switzerland
MA	Associate Planner	City of Kirkland
MA	Environmental Planner	Snohomish County
MA	Cartography Lead	Microsoft
Ph.D.	Assistant Professor	Western Michigan University

that over this period we have admitted 158 students and granted 150 graduate degrees. We consider this to be a reasonable output and one indication that we have a productive graduate program. Our time to degree for MA students has declined significantly since 1985, while it has stayed the same for PhD students. Both numbers are higher than the overall UW average, but, in our opinion, reasonably satisfying in terms of the care it takes to produce a first-rate MA thesis or doctoral dissertation. One reason for the longer time to Ph.D. relates to foreign fieldwork undertaken by many of our students. Given our continued commitment to mentoring graduate students, and closely monitoring both the pace and quality of their work-in-progress, we are attempting to minimize time to degree. And the system seems to be working in terms of attrition rates: of the 64 graduate students who entered our program from Autumn of 1991 onward, 53 either earned degrees or are still enrolled. Moreover, the quality of our graduates, as indicated by fellowships, external funding sources, and subsequent career paths, seems quite encouraging.

As the table below indicates, we have been very successful at producing MA and Ph.D. students pursuing varied and challenging careers in university and college teaching, planning and public sector work, and private firms:

**Figure 4.2: Geography Graduate Students 1991-96, Career Paths**

not graduated	GIS manager	Colville Federated Tribes
Ph.D.	Strategic Planning and Consulting Firm	Seattle
not graduated	Cartographic Software Manager	Microsoft
MA	GIS manager	City of Spokane
MA	Research scientist, GIS specialist	NOAA, Seattle
MA	Network Manager	Norwegian Polar Research Institute
Ph.D.	Director, Global Trade, Transportation and Logistics	University of Washington
MA	Senior Associate & mediator	Triangle & Assoc., Seattle
MA	Regional GIS manager	National Parks Service, Seattle
Ph.D.	Assistant Professor, Geography	Colorado State University, Ft. Collins
MA	Geography instructor	Bellevue Community College
MA	Cartographic Software Designer	Microsoft
Ph.D.	Asst. Director, REEU Program,	JSIS, University of Washington
MA	Geography instructor	Seattle Central Community College
MA	GIS specialist	Gambrel & Associates, Seattle
MA	Researcher & GIS specialist	Battelle NW, Seattle
MA	Peace Corps Volunteer, Nutritional Program	Niger

This table indicates that many of our MA and Ph.D. graduates have found work in both the public and private sectors, in teaching at all educational levels, planning, research positions, and technical positions such as GIS. Many of our MA students during this period have graduated and then continued on in the post-MA program. It is also notable that several of our students are employed without graduating. In most cases, these are students who have been 'stolen away' by companies. While this is a problem that we seek to fix, this does demonstrate that the skills we provide in our graduate program are extremely marketable.

### Underrepresented Groups and Nontraditional Students

As indicated in Table 4.7, our graduate student population exceeds both national and UW numbers in terms of minority representation as well as the representation of women. The Department is engaged in strategies to attract more minorities into our graduate programs. The Admissions Committee is working with a committee of current graduate students called the GGSA Diversity Committee to improve our recruitment practices and successes. The Department provides the GGSA Committee with potential minority student names from the National and Western Name Exchange Consortia and the GGSA Committee sends flyers to approximately 100 students per year in hopes of attracting them to our program. In addition, the GGSA Committee sends letters to chairs of other Geography programs to encourage applications, and they supply flyers to the Minority Education Division of the Graduate School for distribution at recruitment fairs throughout the country. After minority students have been made an offer, the GGSA Committee makes personal contact with students as they decide between programs in an effort to inform them about our Department. The GGSA Committee is an ongoing activity of our graduate students, and they have identified a series of goals to still further improve our recruitment practices.

**Table 4.7 Underrepresented and Minority Students in Geography Graduate Programs, 1993-1996**

Students Enrolled	UW Geography	National Geography	UW Overall	UW Social Science
<i>Male</i>	58.0%	65.5%	50.5%	47.9%
<i>Female</i>	42.0%	34.5%	49.5%	52.1%
<i>Minority</i>	8.9%	5.6%	13.2%	10.9%
<i>Percent of students age ≥30</i>				
<i>Overall</i>	65.3%	N/A	49.0%	N/A
<i>Female</i>	51.5%	N/A	50.8%	N/A
<i>Male</i>	75.6%	N/A	47.8%	N/A
<b>MA's Granted</b>				
<i>Male</i>	64.0%	63.0%	46.0%	51.0%
<i>Female</i>	36.0%	37.0%	54.0%	49.0%
<i>Minority</i>	3.0%	5.60%	13.0%	9.0%

<b>Ph.D.'s Granted</b>				
<b>Male</b>	91.0%	70.0%	62.0%	65.0%
<b>Female</b>	9.0%	30.0%	38%	35.0%
<b>Minority</b>	0.0%	8.0%	8.0%	4.0%

Notes: Includes enrollment of graduate students in all courses. Minorities include African-American, American Indian, Asian-American, and Hispanic-American students. International students are not included in "minority" count. Social Science degree figures *include* Geography.

We have greatly increased the percentage of our MA degrees being awarded to women. While we have produced only one female Ph.D. since 1993, we have several near completion (or completed in Summer, 1996, beyond our reporting period), most of whom have won competitive national dissertation fellowships (see Table 5.2 below). Thus we anticipate much higher numbers for female Ph.D.'s in the next two years. We partially attribute the increase in female students to new faculty research interests centered on gender roles, feminist theory, and related questions of equality and spatial equity. The hiring of three female faculty members (up from none in 1985) has also surely contributed to this increase. Most importantly, perhaps, as indicated by the success of many of our female students in winning highly competitive national and international fellowships (see Section V), has been the careful mentoring of these students and their own steady intellectual development. In turn, they have begun to serve as role models for other female students. As noted below, but highly relevant in this discussion as well, it is also encouraging that 1/3 of the MAs and Ph.D.s (10 out of 30) granted by this department over the past two years have been earned by women, up from a historical norm of 10-15%. We attribute this success rate to several factors: the tenacity and academic skills of this group of emerging scholars; faculty mentoring; shifts in curricular emphasis, and our insistence on a "good fit" with our successful applicants.

We have no available numbers or any way to generate such numbers on non-traditional students. However, we can confidently state that given the wide range of backgrounds of our graduate students, and their relatively older age of entry into our program, that we have many older, employed and mid-career students.

## V. CURRICULUM AND INSTRUCTION

### Undergraduate Degree Program and Concentrations

The Geography undergraduate program requirements are as follows:

#### Admission Requirements (15 credits):

- (i) 10 lower-division credits in 100- and 200-level Geography courses, with no more than one course at the 100-level.

(ii) 5 lower-division credits in an environmental processes/earth science course (either GEOG 205 or certain courses in Geology, Atmospheric Sciences, Oceanography, Botany, etc.), to be selected from a list provided by Geography advisers.

(iii) Minimum grade of 2.0 in all courses used to fulfill these requirements; overall GPA for all three courses must be 2.5 or above.

### **Major Requirements (60 credits, including 15 admission requirements)**

#### ***Foundation Courses: (10 credits)***

**(5 credits) GEOG 326** (or equivalent course in research methods and statistical analysis) --must be taken within two quarters of admission to the major.

**(5 credits) GEOG 360-** (or equivalent course in principles of cartography)--must be taken within two quarters of admission to the major.

***Tutorial for majors. (1 credit)*** Within two quarters of admission to the major all students must take the 1 credit Major's Tutorial (Geog 397A), which includes both class sessions and a series of individual meetings with an appropriate faculty member and peer students to (1) review work already carried out in the major and (2) to identify student's concentration and cognate skills to be developed and emphasized during the final year in the major.

***(15 credits) Concentration:*** three upper-division (300- and 400-level) Geography courses, including two 400- level courses. Concentrations are the areas of primary expertise that majors develop in the course of their studies. Students' concentrations are a collection of courses that together provide specialization in a subfield of geography, combining systematic and analytical knowledge and skills (see advising for a list of options).

***(15 credits) Geography Electives:*** 10 of these credits should be upper division courses (300- and 400- level). 100-level Geography courses do not count toward this requirement.

***(4 credit minimum) Capstone Experience.*** Capstone experiences integrate material learned in the major in 400-level studies which emphasize individual (and/or collaborative) research and creative thinking by students. These studies emphasize active learning, reflective analysis by the student on the continuity and complementarity of geographic knowledge beyond individual courses, and the development of student's identity as geographers. May include any of the following: senior essay; senior seminars; Honors seminars; workshop courses, or other approved arrangements.

### **Additional Degree Conditions and Program Features**

(a) Transfer students are required to complete a minimum of 25 upper-division (300- and 400- level) credits in Geography in residence at the University of Washington.

(b) Individual Geography course grades must be 2.0 or above in order to count toward the major requirements; and the overall cumulative GPA in Geography courses must be 2.50 or above.

(c) Students are encouraged to take appropriate elective courses outside the Geography Department in fields which support their concentration. Such courses appropriate to various concentrations will be available on lists supplied by Geography advisers, or may be recommended by the Faculty Adviser. Students should be aware that 300- and 400-level courses in other departments are likely to have prerequisites.

(d) The department offers certificates for students interested in location studies, trade and transportation, etc. (information available through Geography Advising).

(e) The department offers an Honors program for students who are either participating in the College Honors Program or who are invited to participate in the Departmental Honors Program.

We offer four concentrations within the major.

### **Geography: Main Program Options**

#### *Geographic Information Systems:*

- GIS analysis
- map sources and map errors
- urban and transportation GIS analysis
- natural resource and environmental analysis
- GIS and health and disease patterns

#### *Economic Geography:*

- business and marketing geography
- regional development and location studies
- global trade and transportation
- economics of resource use and land use
- political economy of the developing world
- urban economic studies

#### *Regional Geography and International Development*

- population growth and migration
- development history, theory and practice
- urbanization processes
- economic development and global interdependencies
- resources, hunger, health, and poverty

### **General and Service Education**

Our lower division general education offerings play a predominant role in our undergraduate curriculum, comprising 55 percent of our total SCH, and utilizing approximately 75 percent of our TAs. Our 100/200-level course service to the undergraduate community is measurable in such terms as: 88% of all enrollees in these courses are non-majors, and these students generate 38% of all our departmental SCH.

Overall, 60% of our enrollees at all levels are non-majors. These numbers are essentially the mean within the social sciences.

Our service to the university extends more broadly in several of our upper-division courses, as expressed in Table 5.1:

**Table 5.1: Geography Service Course Enrollments, 1993-96**

Course, Title	Non-Geog. Majors	Main Departments Served
Geog 302, Pacific NW	269	Econ, Business, Pol Sc, History
Geog 326, Intro To Geog Research	88	Quantitative and Symbolic Reasoning service course
Geog 330, Latin America: Landscapes of Change	90	Latin America Studies, Anth, Jackson School
Geog 342, Geography of Inequality	118	Soc, Am Ethnic Studies, History, Pol Sc
Geog 349, Geography of International Trade	149	Pol Sc, Business, Econ, Jackson School
Geog 360, Principles of Cartography	208	Civil Eng, College of Forest Resources, Urban Planning, Geology
Geog 370, Problems In Resource Management	76	Env Studies, College of Forest Resources, Geology,
Geog 371, World Hunger & Resource Development	159	Jackson School, Anthro, Pol Sc, Am Ethnic Studies, History
Geog 380, Geographical Patterns Health	125	Env Health, Nurs, Soc, Anthro
Geog 431, Geography and Gender	72	Women, Am Ethnic Studies, Soc, Jackson School, Anthro, Pol Sc
Geog 460, GIS Analysis	101	Civil Eng, College of Forest Resources, Urban Planning, Geology

The broad range of departments and colleges served by our courses is in part a reflection of the unique spatial perspective Geography offers, and the usefulness of several of the analytical tools and modeling techniques offered in these courses, and this list indicates that we provide support for many other programs. However, while the presence of non-majors greatly enhances the intellectual diversity within our courses, this accommodation is at the straining point in at least one area -- GIS. The combination of our increased major count and heavy demand from many other colleges and departments (Architecture, Forestry, Civil Engineering, Geology) has really pushed the enrollments in our 300- and 400-level GIS courses beyond the point where we can provide adequate individualized attention, or even adequate computer time at the specialized work stations dedicated to course software. As we hire more faculty and work carefully with faculty campus-wide on a GIS pedagogical and service-delivery strategy, we hope to address these problems, perhaps pooling resources with other units in joint offerings, and the kinds of strategies

described in the previous section.

### **Interdisciplinary Programs**

As noted in Appendix D, the faculty play integral roles in many other departments in terms of joint appointments, curricular planning and cross-listed courses. In fact, each faculty member has at least one joint appointment, and many of our courses are either core or enrichment courses in other units, including the Jackson School (Canadian Studies, Latin American Studies, SE Asian Studies, China Studies, Russian and East European and Central Asian Studies, African Studies), Urban Design and Planning, the Center for the Study of Demography and Ecology, Women Studies, Health Sciences, Environmental Health, the College of Forest Resources, and the College of Engineering (Civil Engineering, Computer Science). These interdisciplinary ties inform our undergraduate curriculum and teaching in seminal ways. For example, Chan draws upon both demographic material (developed through his CSDE connection) and current policy and economic development issues developed through his affiliation with the Jackson School. Similarly, Lawson's close work with the Latin American Studies program and Women Studies has greatly informed her development of subject areas and sections of her upper-division Latin American courses dealing with such subjects as gender roles, labor markets, economic restructuring, and regional economic dynamics. The same may be said of each faculty member's drawing directly from an interdisciplinary expertise: Sparke's Canadian nationalism and identity issues and trade policy material; Chrisman's use of forest resources data in GIS analysis; Beyers' and Krumme's use of microeconomic and macroeconomic principles, econometric modeling techniques, and marketing and location theory—all directly drawn from affiliations with Economics and Business, etc. The faculty not only draw upon these deep interdisciplinary roots, but also integrate them into the ways the discipline of Geography itself defines and produces knowledge. Thus these roots are central to what we teach.

### **Curricular Change: Undergraduate Program Modifications and Enhancements**

Over the last three years the Department has substantially reworked the major and is currently integrating these innovations into our program. Our new undergraduate major emphasizes a) systematic and explicit identification by students of learning goals and outcomes, and b) more flexible requirements emphasizing complementary and sequenced development of analytical skills across the curriculum. We believe the new major enables students to systematically develop their intellectual interests and technical/analytical skills, and better understand the interdependencies between content and skills. In turn, this matching of intellectual ends and means helps them better understand what research questions ought to look like, how to gather and display information, and how to analyze and interpret data for various purposes. The major's main features include:

- *A Curricular Inventory* (sample page attached) designed to help students navigate through the geography curriculum. Each course offered in the undergraduate



curriculum is described and analyzed in terms of its approaches, topics, skills, hardware and software used, and research methods taught, as well as graphically mapping course sequences, families, pairs, etc., both inside and outside the department. This is now available in hard copy and electronically, on a new undergraduate Geography majors' Home Page on the World Wide Web. This curricular guide is intended to also provides students with a breakdown of computer hardware and software used in the various courses, and will soon be written in hypertext to help students access it in various overlays and at various levels of inquiry and sophistication and refinement of approach.

- *A set of prerequisites and required courses* designed to ensure that students are better prepared in statistical and mapping/analytical skills necessary to flourish in our upper-division courses. Thus all students should complete the same basic building-block courses by the end of their second or third quarter in the major, with emphases on research design, statistical analysis and graphic displays of spatial data.
- A new "*Tutorial For Majors*" course, Geog 397, (syllabus and assignments attached), to be taken within two quarters of entering the major, and designed to familiarize students with methods and topics within the major, with career paths, and with curricular paths within the major. The course also aims to help students broaden and sharpen their academic focus by requiring them to meet with faculty during the course to write a **plan of studies** for their remaining time in the major. We believe this course and more careful course scheduling and career counseling will lead to a more explicit linking of analytical skills with courses, course content and career planning, and thus more efficient and coherent course selection. This heightened sense of purpose and direction is intended to produce both more timely graduations and more focused graduates.

Other features of this tutorial include: *appearances by each faculty member* to describe research interests, courses taught, teaching approaches, careers in their fields, etc.; *identification of curricular pathways* in the new Curricular Inventory ; a *poster project* in which students reflected on their evolving academic interests as they learned more about the curriculum, discipline, and faculty; and *faculty mentoring*, which included a minimum of two meetings with assigned faculty mentors during the quarter, during which students and faculty discussed student interests and study plans, career development (including graduate school), courses in other departments, and ways to combine Geography courses in the most systematic and efficient manner. Course evaluations and supplemental comments were quite positive and constructive, and we have already revised the course for its next offering.

- *Expansion of 200-level course access*: by developing a new course, The Geography of Health and Health Care (Geog 280), and creating more access to Geog 230

(Urbanization in the Developing World), and Geog 277 (The Geography of Cities), we have made it possible for students to satisfy major entrance and preliminary course requirements in a more timely fashion and, we hope, exposed them to more possible pathways through the curriculum at an earlier, more formative stage of their intellectual development as geographers. This earlier identification helps students connect the curriculum as a whole, do more systematic course planning, and be more efficient at identifying and systematically developing necessary analytical skills/tools/knowledge bases in order benefit from 400-level courses.

- *Expansion of our Service Learning program.* By adding several courses to our Service Learning offerings (now including: Geog 207, Geog 277, Geog 342, Geog 371, Geog 330, Geog 360, Geog 478, and Geog 460), we believe we have greatly strengthened the links of the discipline to the community, and helped students develop both an intellectual appreciation of the analytical power of the discipline and its applicability to social, economic, and political issues. Through a Carlson Office FIPSE grant, we also received an extra Service learning TA, who helped immeasurably in integrating the Service learning concept into course materials and goals.
- *Development of a departmental WWW site and e-mail ListServe.* Our emerging system of web sites includes both extensive resources and interactive pages such as our curricular compass, projected course offerings, faculty homepages, job-hunting and career-development sources and tips, internship information, and advising information and advice. Our departmental electronic discussion group, which each major is automatically added to, offers forums, job and internship openings, information about course changes and offerings, and a weekly newsletter highlighting student, faculty and staff accomplishments. In addition, our web sites are used to introduce software interfacing between GIS and the Internet into GIS Business Geographics classes. We are integrating new technologies (the WWW; our new collaboratory) into our curriculum in ways that allow interactive communication in Geography courses, collaborative exercises in labs, skill acquisition and outcome-based evaluation, hypertextual writing, access to information "on the ground" in different parts of the world, outreach programs, and developing full and partial distance learning programs in response to higher education demands in Washington State.
- *Expansion of our career guide, "What You Can Do With A Degree in Geography."* This volume, now in its fifth annual edition, contains 175 pages of recent job announcements, descriptions and employment application and exams; internship contacts and lists of where our students have had internships; a list of alumni jobs; sample resumes and advice on job hunting and how to develop and apply skills offered in our curriculum; WWW job-hunting sites, and articles on career trends. We see this

career guide as important link in our program development, and find it is often singled out in student exit surveys as an especially valuable resource.

In addition to these improvements to the major, we are making specific curriculum changes to the undergraduate program (which we are considering due to both the logic of our program development and stated student demand). These include:

- more courses on resources/land use analysis/environmental impact assessment, with special focus on society-nature interactions and the analysis of political debate on selected environmental issues
- more courses on international trade, transportation, and logistics, including an examination of global capital flows, production and consumption linkages, and the transformative role of technology and high-tech and service industries in world trading networks
- more courses on the role of technology on rapid economic, social and political change

*Additional collaboration with other units would be fruitful*, with especially promising avenues for exploration including: GIS technology and its social roles and uses (in conjunction with the colleges of Forestry, URBDP, and Engineering); a focus on social transformation, equity and gender issues (in conjunction with Anthro, Soc, Women Studies); a concentration on environmental and community planning (in conjunction with the CEP program in the College of Architecture); and full participation in emerging consortia clustered around the broad subject areas of international studies, and environmental studies.

## **Graduate Degree Programs: MA and Ph.D.**

### **Masters Degree Program**

*Entrance Requirements.* The Departmental Graduate Admissions Committee evaluates each application on its merits. We do not rely solely on standardized GPA or GRE scores for admission consideration. Students must provide at least three letters of recommendation from persons qualified to speak to their admissibility for our graduate program, provide copies of their GRE scores and grades, and write a statement of objectives indicating why they want to enter our graduate program. The committee evaluates these materials on a case-by-case basis, *and recommends to the faculty as a whole the admission of each student.* However, standardized scores are one important component of our evaluation and as illustrated in Appendix A, the average entering GPA our students ranges from 3.48 to 3.63 over the last three years. Faculty are given a specified time to comment on admission decisions, and in cases of dissent (for and against admission) cases can be brought for discussion with the faculty as a whole at faculty meetings. We have had substantial increases in numbers of applicants in recent years and

so we involve faculty beyond the admissions committee in the admissions process to balance the workload. (These same considerations are applied to Ph.D. applicants).

*Program Requirements* The Masters Degree Program in Geography is a thesis program with the same basic credit requirements as the Graduate School. A minimum of 36 credits must be presented, including 9 credits of Master's Thesis. As with the Graduate School requirements for the Masters degree a maximum of 9 credits of thesis may be used towards the degree. The department requires completion of Geography 511, and two additional departmental seminars as a requirement for the degree. We also require the achievement of a grade of 3.0 or higher in required courses for the degree.

*Review of student progress* In February of each year we review the progress of each graduate student. This meeting provides us with reports from faculty chairing committees as well as from those having students in their classes regarding the performance of individual students. Feedback from this meeting is often given to individual graduate students. The meeting plays an important role in our annual allocation of teaching assistantship resources. [This meeting evaluates both master's and doctoral students.] We also use this meeting to give us perspective on the performance of students-in-residence who have a TA/RA, and those who are new applicants or students in residence without an initial offer of support.<sup>2</sup>

*Theses* Graduate students often start their Masters Thesis as a seminar or course paper. They frequently use Geography 600 credit (Independent Study) to pursue thesis topics outside classes or seminars. Students not planning to pursue a Ph.D. degree often adopt a different strategy towards courses than those aiming to leave graduate school after their Master's degree, taking more courses that provide them with a broader base for their career aspirations.

*Committees* Supervisory committees are established for Master's students flexibly. Some students enter the program with very clearly defined graduate program targets, while others take some time to evolve their foci and relevant committee structures. We seek a balance between assignment of committees by the Graduate Program Coordinator at the time of entry into the program and the evolution of student interests that lead to student selection of committees. The Graduate Program Coordinator monitors this committee assignment process, with the help of the Assistant to the Chair.

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<sup>2</sup> The department recruits students through the use of various funds, including TA and RA positions with promises of support based on satisfactory progress through various degree levels. We distinguish between students given "initial offers," and those admitted without guaranteed financial support. For a Master's degree applicant, an initial offer is typically for two years. An incoming post-Master's student receiving an initial offer of support is given three years of funding. Both are contingent upon satisfactory progress. Students moving from the masters (with initial support) to the post- masters program are sometimes given continuations of their entry-level support, for a maximum of five years of departmental support. Other arrangements are sometimes made, but in general these terms are the most generous for support from the department. We also have a target of awarding one-third of our teaching assistantships to new students each year.

*The Masters Exam.* When a draft of the Masters thesis has been approved by the Supervisory Committee an examination is scheduled. Students have, of course, applied for the degree with the Graduate School. Typically three faculty have read the thesis and come together for an oral examination/discussion of the thesis and related matters. Students usually make a presentation of their results (sometimes also in our Colloquium), and we also often have questions on related areas. The typical examination lasts two hours.

*Time to Degree.* As a practical matter our Master's students typically have many more than 36 credits at the time they file their thesis with the Graduate School. The typical student takes three years to complete a Masters degree, and generally the minimum credit requirements are not a constraint on graduation. While we have reduced the average time to degree from 11 quarters in 1985 to 9.5 in 1995, we still feel that this number should come down further (see Appendix A and Table 4.1 for a comparison to the social sciences overall).

*Transition for Internal Masters Students* We ask our Masters students who wish to continue in our doctoral program to provide information similar to that provided by new applicants into the Post-Masters program for evaluation by the Graduate Admissions Committee. This includes a statement of Post-Masters program objectives, a statement of support by the MA supervisory committee supporting documentation, and a copy of the MA thesis.

### **Ph.D. program**

*Entry Pathways.* The department has students entering the doctoral program directly from our internal Master's program (an average of 38 % over the last 10 years) and as admissions as post-Master's students (an average of 62% over the last ten years). We have tried to "level the playing field" in this process of evaluation, giving external applicants equal standing with students wishing to transition from the MA to the Ph.D. program. The one exception to this principle has been for those students applying for entry into the MA program who have also earned an NSF graduate fellowship. For these exceptionally gifted students our department has gone an extra mile to provide them with up to five years of support--the norm for attaining a Ph.D. degree (when field work or language training has not been an additional requirement) to competitively attract these students to our program. This has been a very successful recruitment strategy, which has also been supported by the Graduate School in their management of our meager recruitment funds. In situations where we have been up against financially more competitive institutions, this type of flexibility/adaptability in support has been vital to maintaining the quality of our graduate program.

*Applications by Post-Masters Students from Other Institutions* We essentially ask for the same information as with students entering the Masters program, plus a sample of writing. This is often a copy of a seminar paper or a thesis. This written material is usually very

important in the admissions process, as it indicates to us the creativity of the student, and their potential for post-Masters training.

*The Departmental Preliminary Examination* The Department administers a written and oral examination to each post-Masters student as soon as practicable after their entry into the program. This examination serves a variety of purposes, including (a) ascertaining the current level of preparation of the student in fields that he or she intends to demonstrate competence in at the time of the General Examination, (b) gives us an early opportunity to work with the student in an examination environment to assess writing and reasoning skills, (c) it leads to advising on curriculum leading up to the General Examination, (d) usually helps to define the doctoral Supervisory Committee, and (e) it helps us define the cognate field and/or foreign language skills needed by the student. The cognate field entails a course of study in a complementary discipline that provides crucial expertise for that student's doctoral research program. Language study is typically dictated by the place in which the student intends to pursue research.

*The Typical Course of Studies* The typical post-Masters student takes two years of course work prior to their General Examination. This is generally a mixture of course work in the department and in related fields (usually the cognate field). Most students take seminars in addition to upper division course work, and independent study (Geography 600) with various faculty is common. Most students who move from our Master's program into our doctoral program have credits earned during their enrollment in the Master's program which they are able to utilize to satisfy credit requirements towards the doctorate.

*Annual Review of Progress* We utilize the same procedure to evaluate the progress of doctoral students as described for Masters students above.

*The General Examination* The General Examination is administered at the end of the course of studies. It is a written and oral examination, which is scheduled by the Graduate School at the request of the department. The oral portion of the examination is conducted in the presence of the Graduate School Representative appointed by the Dean of the Graduate School. Students typically have four or five questions which they write over the course of several days. The oral examination covers the written questions, but often includes evaluations of the competence of the student in other subject matter. Students may pass the examination and be admitted to Candidacy, or they can reexamined in particular areas or be failed and not recommended for reexamination. The latter outcome is very rare; most students are not scheduled for their General Examination until their Supervisory Committee feels as though they are well prepared to undertake the examination.

*Dissertation Proposals & the Dissertation* After passage of the General Examination the student prepares a dissertation proposal. The Supervisory Committee meets to discuss and approve the dissertation proposal, which often requires revision. Students usually take approximately one/two years to undertake the research for, and write the dissertation.

In cases where field work is required this time may be considerably longer, and may require external funding proposals to obtain funding to support the field research. The Department has been extremely successful in recent years in obtaining this type of funding from the National Science Foundation, the Fulbright Foundation, the Social Science Research Council and the Inter-American Foundation (see Table 5.2).

*The Final Examination* Upon completion of the dissertation a Reading Committee is established (usually three faculty) to provide the student with comments on the draft dissertation. Usually the chair of the Supervisory Committee will have read and made comments on the dissertation draft prior to its circulation to the Reading Committee and other committee members. When the Reading Committee approves the dissertation an oral Final Examination is scheduled by the Graduate School. In most cases the first part of this examination is "public," and graduate students and interested faculty may attend the presentation of the candidate. This is followed by a "closed" session in which committee members ask questions of the candidate; the examination usually ends with acceptance of the dissertation and the recommendation that the degree be awarded.

*Time to Degree.* The typical student takes 5.87 years to complete a Ph.D. degree. This number has held steady since the last self-study in 1985 (Appendix A). Given that many of our Ph.D. students engage in field research, which often involves overseas travel, we do not feel that this number is unusually high, and it is identical with the number for the social sciences overall (see Table 8.1). There are however, individuals who have been in our program for too long and they contribute to this high average number.

### **Instructional Relationship to Other Programs**

The graduate curriculum in geography stresses flexibility, allowing students to plan a course of study, in conjunction with their advisory committee, that incorporates coursework from other disciplines. Within our doctoral program, students either learn a language or pursue a cognate field of study which institutionalizes the breadth and interdisciplinarity of their studies. Our graduate students frequently take coursework, or pursue a cognate field in economics, the Jackson School, Women's Studies, the Business School, the Graduate School of Public Affairs, College of Forestry, Urban Design and Planning, Sociology, Political Science, Computer Science, Civil Engineering, or Health Sciences.

### **Teaching Participation**

Teaching preparation is an important part of our graduate program. TAs provide the largest funding source for graduate students in the department. Each quarter about 15-20 graduate students work as TAs for various undergraduate classes. An average MA student spends about 4 quarters as a TA; a doctoral student does more, on average about 7 quarters. TA work involves conducting tutorials, quiz or lab sessions, and grading assignments. Doctoral candidates may also teach undergraduate courses.

The department conducts a four-day orientation program each year for all new graduate students at the beginning of the new academic year. The program includes components on such aspects of teaching as lecturing, microteaching, using collaborative learning groups, assignment and exam design, using writing as a mode of critical thinking, active learning theory and pedagogies, and dealing with diverse learning styles. This is followed by a teaching workshop in the fall, Geog 599 "Effective Teaching in Geography" (one credit), which all TAs are required to enroll, and other graduate students interested in undergraduate education are encouraged to take in order to gain necessary skills to be effective TAs. The enrollment of this course averages around 20 each year. In this course, students meet for five 2-hour sessions to discuss various classroom and course management issues and share their experiences under the guidance of a CIDR consultant, the department's Lead TA, and relevant faculty and staff. Typical sessions mirror those gone over in the Autumn TA orientation, but delve into these subjects in more depth in a case-study, role-playing context.

Quarterly student evaluation for each TA are required, reviewed by the graduate program coordinator and department head, and filed permanently in the TAs file. Results of these evaluations are frequently used in making decisions about TA allocations.

### **Participation in Research Activities**

The Department stresses the professional preparation of students, and this is also an area we are currently working to improve. Graduate students are required to take a core course Contemporary Methodologies and Philosophies in Geography (Geog 511). This course introduces students to the history and current debates over the construction of geographic knowledge and major intellectual trends in the discipline. In addition, students are encouraged to take Research Methods in Geography (Geog 426) and GIS Analysis (Geog 460) critical thinking about GIS source materials and data ethics. Beyond these basic training courses, students may elect to take an advanced seminar in research methods (Geog 526), a professional writing course (Geog 501A) in which students produce a publishable paper and a seminar in funded proposal writing (Geog 501B) in which students are required to produce a proposal for field work funding or for their thesis of doctorate for defense in front of their committee. These are the basic skills fundamental to their professional training and effective participation in research.

In addition, graduate students are strongly encouraged to present papers at professional meetings and to publish refereed journal articles while in graduate school. As Table 5.2 (see below) indicates, over the last ten years, the trend has been towards more graduate student presentations with over twenty graduate student papers presented each year in the last two years. In addition, Table 5.2 indicates that students are quite active in publishing their research with over ten papers published per year in three of the last five years.



## Funding of Graduate Students

The Department is particularly proud of our record of graduate student funding in recent years. The Department has had 13 TA positions (with a lead TA added since 1991) each year and an average of 3 RA positions funded by faculty research grants. This academic year, our TA allocation has risen to 15 per year. Both students and faculty have worked hard to extend the funding opportunities beyond these state funded TA and faculty funded RA positions. In large part due to the excellence of our students, they have earned on-campus funding such as University of Washington Graduate School Dissertation Fellowships, FLAS Fellowships, and Graduate Recruitment Fellowships (see Table 5.2 below). Further, over a dozen of our students have been funded over the past ten years by the Department of Family Medicine, and two have received fellowships from the Department of Health Services in their prestigious Agency for Health Care Policy and Research Predoctoral Fellowship Program. Several other students have also been in the Department of Health Services' selective Doctoral Opportunities Program. In addition, our students have earned prestigious national level awards such as NSF Graduate Fellowships, NSF Doctoral Dissertation Fieldwork Grants, Fulbright Awards, Social Science Research Council Awards, InterAmerican Foundation Grants and Luce Fellowships. Since 1991, an average of four students per year have been supported by on-campus, non TA/RA awards and in the same period, an average of 13 students per year have been supported by national level awards. This is an area of distinction for our program on the national level.

## Curricular Change: Graduate Program Modifications and Enhancements

We continuously examine our graduate programs to identify ways in which we can improve their quality and productivity. This process of assessment is undertaken in several environments, including at our annual faculty retreat, and as a product of our annual review of each graduate student's progress. Currently there are several efforts underway in the department which speak to these concerns.

- *Improved resources in labs and the Collaboratory* The dramatic improvements in facilities in the department in recent years have had an important impact on the performance of our graduate students. These improvements will continue to be a major effort for us in the near future. Although we lost the Ullman Library to recent University budget cuts, we have been very successful in obtaining funds to develop the Collaboratory, and to otherwise improve our infrastructure. The continued growth of LAN resources give graduate students access to basic computing resources fundamental to scholarly performance in our field today, ranging from WEB access to word processing to support class participation, TA functions, service on committees, etc., to making maps and graphics for theses, conference papers, and class assignments. We are still in the process of realizing the potential of the Collaboratory, and the Sherman Lab, but graduate students will be among priority users of these new spaces in our department. A related area of ongoing improvement is in our relationship with CSSCR and the Government Publications unit in Suzzalo Library.

These units provide our graduate students technical support services in an ever richer way, and the department is continuing to help staff in these units define how we can continue to expand access and utilization of their resources.

- Improvements in Core Course Sequence* We have been engaged in an exploration of how we could revise our core course, Geography 511. This course has gone through various changes in focus and content over the past twenty years. Graduate students and faculty have been in a "love-hate" mode of reaction to its content over this time period, and we have not resolved how to change it. Two years ago we established a committee to rethink our offerings--the latest such reexamination precipitated by shifts in the faculty of the department, movements in the field, students shifts in interest, etc. As this self-study is written we are still evaluating what to do. We could frankly benefit from the input of the review committee as to our strategy. Our dilemma is this: in a very flexible graduate curriculum serving very divergent student interests should we devote one or two quarters to a core sequence? If one quarter, what content? If two, what content? The split we have discussed in a two quarter sequence is between the history of the discipline, and current philosophical and methodological issues. Resolution of this matter will most likely hinge on appointments we make in our current search process. It is also very much contingent on the current overall structure of our graduate program, which has a minimal number of graduate courses compared to many programs in the U.S. and Canada.
- Professionalization of Graduate Student Body.* We recognize that the Ph.D. marketplace has become more competitive, and that it is important for our doctoral students to have demonstrated professional accomplishments while in the doctoral program. In particular this means having given papers at national or international conferences, and having had papers accepted for publication in refereed journals while in graduate school. We have encouraged more of our students to attend and give papers at meetings such as the Association of American Geographers meetings. This initiative has been very successful (Table 5.2), with several of our students going further and earning awards for outstanding papers at national conferences. The Department has also tried to offset the expense of participation for students by attempting to increase the returns in the Ullman fund to be able to help defray some or all of the travel costs for students. In addition, grant funds have helped provide graduate student travel support. We are currently planning to expand the level of this support. As noted in the previous section, we have sponsored courses aimed at proposal writing, and have encouraged students to submit seminar papers, thesis and dissertation chapters for publication. We have encouraged more and more of our students to submit proposals for the funding of their doctoral dissertation research, and have been successful with programs such as the NSF Doctoral Dissertation Improvement Grants, Fulbright, and the SSRC. We have also discussed the possible resurrection of our Discussion Paper series, which nearly 40 years ago was a vibrant organ for the prepublication dissemination of graduate student ideas.

Table 5.2: Graduate Student Productivity, 1986-1996

	Sources of Funding			Papers	
	RA/TA <sup>3</sup>	On-Campus <sup>4</sup>	Off-Campus <sup>5</sup>	Presented	Published
1986-87	0	1	2	10	5
1987-88	0	3	2	5	10
1988-89	1	6	7	20	12
1989-90	0	3	2	4	5
1990-91	1	2	8	11	6
1991-92	3	4	14	19	13
1992-93	6	8	13	4*	1*
1993-94	23	7	18	12*	5*
1994-95	23	3	12	36	19
1995-96	24	1	10	21	10

- Colloquium** The departmental colloquium has continued to evolve, and is currently managed more strongly by the graduate students than it has been in the past. In the future we could have a more coherent vision for the colloquium, including possible draft copies of papers, a related discussion papers series, and other ways of making it a more formal experience. The colloquium serves us well as a regular vehicle for scholarly interaction--and it is amazing that on a typical Friday afternoon there is as high a level of attendance and participation as we typically experience. However, we could reconsider when it is scheduled in our evolving scheduling grid to place it earlier in the week at a mid-day time that might attract more undergraduate students, as well as even more faculty and graduate students (not directly enrolled in it).
- Seminars responsive to student demand** We have typically scheduled seminars by the faculty on the basis of *their* interests. Graduate students have clusters of interests that sometimes do not dovetail with faculty suggested offerings, and one way we can increase our seminar sizes is to tailor them more to student interests. For example, in Autumn 1996 two students led an effort to have a seminar offered around a theme - land - which drew a large number of registrants. Seminar registration is sound, but the issue of whether we can build across individual faculty interests and have intradepartmental equivalents of interdisciplinary associations has been very much brought into focus by this seminar on land--which brought students from outside geography and speakers from outside, as well as faculty in the department into this course taken by 15 students.
- WEB, Internet, and Electronic Library Resources** Thus far, the department has a mixed presence on the WEB from a faculty and graduate student perspective. This will be a very active area of development in the near future on many fronts, ranging

<sup>3</sup>Includes Research Assistantships through faculty grants, CSDE, SSRC, and the Dept. of Family Medicine; Teaching Assistantships in American Ethnic Studies and Women's Studies.

<sup>4</sup>Includes University of Washington Dissertation Fellowships, FLAS fellowships, Graduate Recruitment Fellowships

<sup>5</sup>NSF, Fulbright, SSRC, Inter-American Foundation, etc. When funding covers more than one year, it is counted for each of those years.

from the development of materials for graduate student applications to the delivery of instructional materials. We continue to develop our internal departmental network, and students will be more and more a part of this structure (they already have full access), helping to define out we evolve the departmental structure. As the Collaboratory comes on line and the University Libraries link into our departmental facility, we anticipate major new innovations in the way in which learning occurs in our department, and we expect that our graduate students will help the faculty determine how we should improve our performance in these new environments. For example, how will we utilize library databases such as Geoabstracts in our departmental network on a routine basis? The loss of the Geography Library branch two years ago has been a major negative impact on our program--as we forecast it would be at the time the Library Administration chose to close the Geography Library--but we are eager to participate in the development of 21st Century library services in our own space. The Collaboratory promises to such an opportunity for our graduate students, provided it has (1) ready access for all users to all the databases currently found in reference stations such as first-floor Suzzallo, (2) computer-systems available to all for Net searches, offloading of files, printing, and other support activities, (3) a flow of traffic which allows grad students to work alongside undergraduates on a regular basis.

- *Enhancing Research Experience through RA's.* The increased level of research support garnered by faculty in recent years has brought more opportunities for research assistantships to our graduate students. We are working to escalate this level of support, by inculcating a climate in which faculty are more aggressive in seeking funded research. The breadth of funded research has expanded in recent years, but we look to do more in this regard in the future, including being even more proactive in finding support for our students in related units at the University.
- *Effective Teaching* We are increasingly aware of the fact that teaching experiences for our Ph.D. students stand alongside their publications while in graduate school as a basis for being considered for top tenure-track jobs in the university job market. We have begun to think about how we can expand the number of independently offered student sections as a way of improving these opportunities in our department. As discussed in section IX, we see ways in which we could do far better in this area with adequate resources from the University administration.
- *Placement of Graduate Students.* We are continuing to improve placement in both academic and non-academic jobs -- the majority of our Ph.D.s over the last five years have excellent jobs. Our current performance is detailed in Figure 4.2 in Section IV on graduate students and it demonstrates that our students are employed in the Pacific Northwest, all across the nation and in Europe. Further, the survey by the Graduate School in 1996 titled 'Employment History of Recent Ph.D. Recipients' indicates that our Ph.D. graduates are employed in a diverse range of jobs from tenure track academic positions to both governmental and private sector jobs. Further, a

considerable proportion of our Ph.D.s remain, and are employed in Washington State. Specifically, 38% (15/39) are in Washington, contributing to the regional economy.

- *Minority Representation.* Minority representation in our graduate student body is not as strong as we would like it to be as discussed in Section IV on graduate students (see Table 4.7). We have stepped up our efforts at identifying prospective students by utilizing Graduate School leads. In addition, we have used the rosters of minority students who have attended the AAG summer training institutes at Hunter College, Louisiana State University and University of North Carolina.

## VI. RESEARCH: ACCOUNTABILITY TO PLACE AND COMMUNITY

A hallmark of this Department's research is productive collaboration with government, the private sector, and other universities. In addition, our research is intimately bound up with our graduate and undergraduate teaching missions. The following vignettes of recent and high profile research in the Department illustrates the ways in which our faculty, graduate and undergraduate students are engaged in research that breaks basic research ground, provides intellectual leadership to various units on campus, community members, and researchers from other universities across the United States, and that is accountable to the communities and places in which they carry out their research. The Department has considerable strength in theoretically strong and empirically grounded research. The following highlights some of our exemplary research accomplishments over the last five years.

*Towards Environmental Consensus: the Duwamish Coalition Study:* Tim Nyerges has developed an integral connection between his research and teaching through his work on environmental problems on the Duwamish Corridor of southern King County. Specifically, he has created working relationships with members of the Duwamish Coalition, King County, the City of Seattle, the NOAA (National Oceanic and Atmospheric Administration) and the Elliot Bay/Duwamish Restoration Panel to help foster the exchange of computer based information and to facilitate community decision-making around environmental cleanup. The Duwamish Corridor covers approximately 8,500 acres along the Duwamish Waterway from the Southern end of Elliot Bay and downtown Seattle and in a southeasterly direction into Tukwila, Renton and portions of unincorporated King County. This region is home to a wide variety of industrial and other urban activities. The region is vital to the local and state economy with Boeing and the Port of Seattle. Unfortunately, industrial and urban development of this region over the last 150 years has degraded the quality of the environment. The region currently faces two challenges i) maintaining and increasing the competitiveness of the area in a dynamic and globalizing world economy and ii) protecting and improving the quality of the environment. The Duwamish Coalition is a public-private partnership with representatives from residential communities, local, state, and federal governments, businesses, Native American tribes, labor unions, environmental organizations, the banking industry and legal firms. In addition to his scholarly research on collaborative environmental decision-making, Nyerges incorporates this project into his capstone 400 level class.

Representatives from the coalition present in class, and students develop their research projects based on data and information from the issues facing the coalition. Students develop their projects in collaboration with coalition members and at the end of the quarter, coalition members attend student presentations to learn of their findings. The coursework exposes students to group projects, planning and management issues, researching data and performing analyses and application of geographic knowledge to contemporary problems. Furthermore, the Coalition benefits from the information and new perspectives presented by the students.

*Heritage of Deception: geographic reconstruction of Hanford nuclear releases:* Richard Morrill worked for the past seven years on the Hanford Environmental Dose Reconstruction Project, funded by the United States Department of Energy. The project sought to reconstruct the geography of exposure to radionuclide releases from Hanford between 1944 and 1952. Morrill worked as a member of a team of scientists representing nuclear physics, health/dosimetry, atmospheric sciences, hydrology, agricultural economics, anthropology, and demography/population geography, representatives from the states of Oregon, Washington and Idaho, representatives of the Native American tribes, and a public member. This team of scientists were nominated by the Graduate Deans of the four research universities in Oregon and Washington. The major objective of the project was to provide reasonable estimates of doses to people who had been living in the area at the time of these releases and who might have been exposed to excessive levels of radioactivity. This involved Morrill in historical reconstruction research which sought to identify the populations at risk of exposure to radiation and the geographic structure of dominant food paths by which humans were exposed. This project deals with an extremely sensitive and highly controversial issue, which has been subject to intense public scrutiny, and which is of great importance to the people of the Pacific Northwest. Understanding spatial differences in exposure levels is one of the ways in which our research has brought about an accountability to places and communities. Professors Morrill and Nyerges, along with several graduate students, are engaging in a related study of future use of the Hanford Reservation as part of the CRESO project coordinated by the UW School of Public Health.

*Lone Eagles & High Fliers: the rise of the new service economy in the rural West.* William Beyers has led two research projects focused on the growth of business services which have attracted considerable attention from the press, communities, and other scholars interested in regional development in rural economies. With core funding from the National Science Foundation, and supplemental funding from the Economic Research Service he and graduate student David Lindahl were responsible for developing a survey that was conducted on the development of business service enterprises in the United States. Writers from publications such as the Wall Street Journal--and at an opposite place on the national media perspective--John Deere Manufacturing's organ The Furrow, have reported work from this project. Beyers and Lindahl have made presentations in the United States to a wide variety of organizations on their findings that extend beyond the normal academic outlets--such as the Montana Competitiveness Council and the Western Agricultural Economics Association meetings. The interest in the rural aspect of this

project has been widespread, and has pushed Beyers into seeking new support for research that would broaden the base of understanding related to regional development trends in the West. The Royalty Research Fund Grant he obtained is providing seed money for this effort. A conference in February will address these opportunities in more detail, and it is hoped that a major new survey-research project will emerge as a result of these initiatives with funding from a source such as NSF or an interested foundation.

*Working in the Global Agro-industrial Fruit System: A Comparative Study of South Africa and the United States:* In this project Lucy Jarosz examines how people and localities are integrated into the global food order. This comparative study of labor relations in agro-industrial fruit production examines and compares regions in Washington State and the Western Cape. Jarosz will conduct this research in collaboration with Prof. A. du Toit of the Agrarian Studies Program at the University of the Western Cape, South Africa. A major focus of this research is to understand how the particularities of history and geography enable and constrain each locale's integration into the world food order, and in particular the forms of labor relations that are emerging in each site. The project explores how class, gender and ethnicity have shaped the division of labor in these two regions through a comparative research design. The project examines how farm worker labor is controlled and disciplined and looks at how that control is contested, and compares the differences in the labor practices in these two regions that both face globalization of their production systems. The project has led to a new collaboration between Geography, the Center for Labor Studies and the United Farmworkers Union which promises to yield both results of value both in the academy and in the local community. Further, this research is directly linked with Jarosz's teaching in that undergraduate students in Geography and Labor Studies will be able to take service learning coursework, researching basic issues concerned with union organizing in the Yakima Valley.

*Moving Homes, Changing Households: gendered migration in Latin America:* in this National Science Foundation funded project Vicky Lawson examines the role of household structures and power relations in shaping gendered migration decisions and patterns of labor market participation for women and men migrants in their destinations. The study brings together an interdisciplinary collaboration of faculty at University of North Carolina (R. Bilsborrow, biostatistician), Tulane University (A. Morrison, economist), the University of Washington (V. Lawson, geographer), Columbia University (E. Katz, economist) and CIUDAD a research institute in Quito, Ecuador (Silvana Ruiz, economist). This project is being realized through field work in Ecuador involving both survey and in-depth data collection. The project is making theoretical contributions to our understanding of gendered migration by focusing attention on household structures and gender dynamics as crucial to understanding who migrates, why, and with what consequences. Further, the study is making methodological contributions to migration studies by exemplifying the utility of layered methods employing both quantitative and qualitative data sources and analytical techniques and considering individual, household, and community levels of analysis. The next phase of the research is also being funded by the United Nations Population Council in Quito. This project has been highlighted by the

National Science Foundation as exemplary of the Human Capital Initiative which brings basic research to bear on questions of population movement and labor force participation dynamics.

*Fair Fares, Transit Performance, and the Uncertain Promise of New Technology.* David Hodge has long been interested in issues related to equity and transportation with his earlier work funded by an NSF grant. In 1991 he was asked by the Washington State Transportation Department (WSDOT) to undertake an assessment of the two "fair free" transit systems in the state in the context of national experience. As a result of this study, Washington State now has three more systems that have decided to become "fair free". One of the critical issues that emerged from this study was the question of how the performance of a transit agency should be evaluated, especially if the traditional measure of the fare box recovery ratio could not be used. This launched Hodge into another set of studies for WSDOT and the USDOT dealing with performance measures. This research provided the foundation on which the new State Public Transportation Plan was created. Simultaneously Hodge served on the Expert Review Panel overseeing the development of the regional transit authority transportation plan. As a result of these activities, Hodge, along with Morrill, was asked by the Congressional Office of Technology Assessment to provide a summary evaluation of the impact of intelligent transportation systems on the future of urban form in the U.S. Finally, Hodge was invited to participate in a joint U.S.-European effort to generate collaborative and comparative research on transportation with his emphasis being the impact of information technologies on the common and separate experiences of the U.S. and Europe.

#### **Collaborations with the Private Sector and Government:**

This kind of interdisciplinary and empirically grounded research undertaken by the faculty (of which the above are just a few examples) frequently generates interactions between geography faculty and private or government sectors. These interactions are not consulting arrangements, rather, they illustrate the kinds of service we are involved with, and the kinds of accountability to place and community that our research promulgates. In addition to the examples from the previous section our faculty are involved in activities such as:

- Prof. Beyers serves on the Forecasting Committee for the Northwest Power Planning Council.
- Prof. Mayer, a medical geographer, served as Head of the Ethics Consult Service at Northwest Hospital. This body developed policy for issues such as the continuation of life support. In addition, Mayer was involved with individual case consultations.
- Prof. Mayer served as a volunteer for suicide prevention and crisis hotline in the Emergency Department at Northwest Hospital.
- Prof. Hodge served on the Puget Sound High Capacity Transit Expert Review Panel, 1990-1996.
- Prof. Morrill served on the Boundary Review Board of King County (see additional details under community service).



- Prof. Chrisman served on the National Academy of Sciences review panel for the NASA Global Change Data and Information System

### Funding:

The Department has an exceptional record of funding within the social sciences, with our median grant and contract \$/FTE at \$20,440 compared to \$7,441 for the other social sciences. We use median numbers because within the other social sciences, the Jackson School brings in large amounts of Department of Education funding, whereas other Departments have no grants and contracts funding. Our research grants activity has been on a steady increase over the last ten years as reflected in Appendix A: in 1985-1986 the Department earned \$50,187 in grant and contract funding and this number climbs to \$200,334 in 1993-1994 and again to \$223,491 in 1994-1995. Much of the funding for faculty research comes from the National Science Foundation and this is significant since there are strict limits on the size of award given (\$250,000 is the maximum grant size except under unusual circumstances such as Lawson's collaborative grant noted above which came in at \$299,000). In addition, faculty have earned grants from the Ford Foundation, Social Science Research Council, USDA Economic Research Service and the National Institute of Health.

**Table 6.1: Grants and Contracts Awards, 1993-1996, Geography and Other Social Sciences**

	Geography	Other Social Sciences
Mean Annual Grants & Contracts	\$242,209	\$453,186
Median Annual Grants & Contracts	\$229,104	\$179,075
Median Faculty FTE	11.5	24
Median Grants & Contract \$/FTE	\$20,440	\$7,461

Notes: Social Sciences, excluding Women's Studies and Society & Justice. Median used rather than mean due to skewness in data associated with a small number of units with very high levels of funding compared to the typical social science unit.

### Research Development:

The faculty take research and creative activity to be one of their highest priorities and this reflects our belief that strong research is intrinsically important to the advancement of knowledge and also foundational to the teaching and service missions of the University. As a result, we engage in a variety of practices to enhance the research careers of each faculty member. As noted above, for each faculty member below the rank of full professor, the Department operates a mentoring committee. Each year, the Department also has a faculty retreat, off-campus, and before the start of fall quarter. A significant proportion of time at the day-long retreat is devoted to hearing about each other's current research directions and accomplishments. These kinds of practices create a high level of engagement with each other's research. It is very common in our Department for

colleagues to circulate their work for rigorous, but constructive peer review by colleagues. We have succeeded in generating an environment of mutual respect and support for each other's research. There is a widespread feeling among the faculty that the success of each of us, is also a Departmental success.

In addition to this supportive and engaged environment within the Department faculty members remain in contact with research elsewhere in a variety of ways.

- *Publishing.* The faculty publish their research in scholarly journals in Geography and related disciplines, and the volume of publishing has trended upwards since our last review.

**Table 6.2: Faculty Publications**

	Average/faculty	Average/active faculty
1986-87	1.93	2.70
1987-88	2.64	3.36
1988-89	2.07	2.63
1989-90	2.75	4.40
1990-91	2.40	3.00
1991-92	2.53	3.80
1992-93	2.57	3.00
1993-94	3.00	3.46
1994-95	2.46	3.20
1995-96	3.21	4.09

- *National and International Conferences.* The majority of the faculty are heavily involved in professional conferences where they take leadership in organizing conferences and paper sessions as well as presenting papers and learning about other current research. Current examples of this involvement include Nicholas Chrisman's leadership as Director of the 13th annual International Symposium on Automation in Cartography. Chrisman also served as local organizer for a nationally visible NCGIA workshop 'Society and GIS' in 1994. Tim Nyerges organized an interdisciplinary conference dealing with Human-Computer Interaction for Geographic Information Systems sponsored by NATO. Craig ZumBrunnen served as a member of the program committee for the 1993 and 1997 American Association of Slavic Studies Annual Meetings. Kam Wing Chan organized two roundtable sessions for the 1997 AAG annual meetings 'Hong Kong Returning to China' in which both North American and international scholars will participate. Jonathan Mayer serves as organizer, chair and speaker at the American Association for the Advancement of Sciences annual meeting for a plenary session on 'Interdisciplinary Perspectives on New and Emerging Diseases'.

<sup>6</sup> Includes only those faculty who published in that year.

- *Grants and Contracts.* As noted under 'Funding' above, the faculty are very active in earning grants and contracts both at the University and on the national and international levels (see Table 6.1).
- *Editing and Reviewing Activities, Editorial Board Memberships.* David Hodge is editor of the *Professional Geographer*, one of the two scholarly journals published by our national professional association (The Association of American Geographers, AAG), Kam Wing Chan served as Associate Editor for the scholarly journal *Chinese Environment and Development* (1987-1991), Lucy Jarosz served as Associate Editor of *Society and Natural Resources* (1991-1994), Richard Morrill served as Associate Editor of the *Annals of the Association of American Geographers* (1993-1995), Craig ZumBrunnen served as book review editor for *Soviet Geography* (1980-1991), Jonathan Mayer serves as book review editor for the *Professional Geographer*, Kam Wing Chan serves as book review editor for *Chinese Environment and Development* and Nick Chrisman serves as Associate Editor of *Cartography and Geographic Information Systems* (current). In addition, many of our faculty serve on editorial boards of journals in Geography and in related disciplines, review grant proposals for the National Science Foundation, Social Science Research Council, and other similar foundations, and review book manuscripts for scholarly presses (see faculty vitas).
- *National Science Foundation Involvement.* Another crucial point of involvement with the national and international research scene is our work at the National Science Foundation (NSF) -- the major federal source of basic research funding in Geography. Specifically, Hodge served as Program Director for the Geography and Regional Science Division (1993-4). Beyers served as a member of the Committee of Visitors for the Geography and Regional Science Program which reviewed awards and declensions and provided policy advice to the program. Beyers and Hodge both served on review panels for the National Center for Geographic Information and Analysis. Beyers, Hodge, Lawson and Morrill have all served on the Geography and Regional Science grant review panel (a 2 year term). In addition, Professors Chrisman, Nyerges, Hodge, ZumBrunnen and Lawson have also served on special panel meetings or conferences organized by the NSF. All of these involvements place our faculty at the center of national research agendas and activity.

Despite this very engaged and active research environment within the Department, there are some serious barriers to improved research output. While we appreciate that these are university-wide concerns, they affect our small, but heavily subscribed unit in particular ways. The first major impediment to our work is the lack of a research quarter in our academic schedules. The faculty are often highly involved in national and international conferences and professional obligations (such as those outlined above) and these obligations are often clustered at certain times of the year. Given flexibility, faculty can arrange their teaching schedules such that their classes are not interrupted by these other obligations -- so that neither the teaching or research mission is unduly affected by the other. Further, in a small unit such as Geography with a large number of majors and graduate students, much of our teaching occurs in our offices and is extremely time consuming. Without the research quarter we must offer our curriculum to ensure that faculty offer formal, scheduled classes every quarter, regardless of how this corresponds

with our curriculum needs. The lack of a research quarter typically means that faculty members are stretched very thin in terms of their time such that research and writing time is difficult to find.

As with many parts of the University, the limited travel budget with which we operate is another major inhibitor to scholarly interaction. We are typically each funded to attend only one conference per year, and only our airfares are defrayed such that the faculty assume considerable personal expenditures to attend conferences and to engage in collaborative research. This lack of budget has been especially limiting for faculty wishing to attend international conferences.

Along related lines, the Department would benefit from a larger budget for bringing visiting scholars to speak in our colloquium series and to interact with members of the Department. In addition, we are severely limited in terms of office, research and teaching space for visitors that might otherwise come for more extended visits.

## VII. SERVICE TO CAMPUS, REGIONAL AND NATIONAL COMMUNITIES

The Department's commitment to accountability is reflected in our relationships to the communities of which we are a part, in which we live and in which we conduct our teaching and research. Members of the Department are engaged in service within the University, in our Professional Associations, and in the various communities touched by our research and teaching.

- *University Service.* It is notable that so many members of our small department have served so widely and in such crucial positions across the campus. The following itemizes some recent examples. Thomas served as Divisional Dean for Social Sciences in the College of Arts and Sciences; Hodge currently serves as Divisional Dean of Computing, Facilities and Research in the College of Arts and Sciences and served as Chair of the Academic Advisory Committee on Facilities; Morrill serves on the President's Task Force on Enrollment, chaired the Interdisciplinary Ph.D. in Urban Planning, served on the College Council and served on the Faculty Senate Executive Committee; Beyers serves on the Presidential Task Force on Public Service and Outreach, on the Provost's Committee on Accountability, and served on the Graduate School Council, on the steering committee for the Interdisciplinary Ph.D. in Urban Planning, and was technical advisor to the University Economic Impact Study in 1994; Chrisman is Chair of the University of Washington Consortium for Geographic Information and Analysis and a member of the State Environmental Policy Act Committee; Mayer served as Chair of the Faculty Council on Academic Standards and a member of the Faculty Senate Executive Committee and the senate Committee on Academic Standards; Nyerges is Director of Governing Board of the Center for Social Science Computation and Research, and Chair of the Faculty Council on Educational Technology; Lawson served on the Presidential Task Force on International Studies, and is currently on the Search Committee for Provost of the University; ZumBrunnen

served on the Fulbright Fellowship Review Committee from 1986-1992 and as a member of the Arts and Sciences Committee on Computing. Numerous of the faculty have also served across the College of Arts and Sciences on program review committees, and searches for department heads and the like.

### *National Service*

- *Leadership within the Association of American Geographers (AAG).* Several members of the faculty have served in national leadership positions within our professional association the AAG. Morrill was President of the AAG; Beyers currently serves on the National Council of the AAG and is chair of the Publications Committee of the AAG; Hodge is editor of the *Professional Geographer*, one of two scholarly journals published by the AAG; Professors Lawson, Chrisman, Chan, Zumbrunnen, Morrill, and Hodge have all chaired specialty groups of their respective subfields and/or national level committees within the Association (see faculty vitas).
- *Leadership within the Regional Science Association.* Thomas has a career of leadership within the Regional Science Association and this year is awarded the highly prestigious international David E. Boyce Award for Outstanding Service to the Regional Science Association. Morrill served as President of the Western Regional Science Association in the early nineties and Beyers recently served on the North American Regional Science Association Council. These positions reflect the historic importance of members of the faculty to the leadership of the Regional Science Association.
- *Leadership within the National Science Foundation, Geography and Regional Science Program.* As noted in the previous section, members of the Department have served at the National Science Foundation. This activity is closely bound up with our research activity, but is also a service to the discipline on the national level.
- *Leadership within International Professional Associations.* Several of the faculty have been involved in leadership within international professional associations. Lawson served on the board of directors and chaired the research committee for the Conference of Latin Americanist Geographers, ZumBrunnen was co-founder of the Communication Commission of the American Council of Learned Societies - IREX. Chan serves on the Board of Directors of the Foundation for the Promotion of the Modernization of China.
- *Community Service.* Members of the faculty take civic responsibility very seriously and make their professional expertise available to the community in diverse ways. As noted throughout this report, the faculty in our Department make their research accountable to communities and places. The following list highlights some examples of community service in this vein. Morrill chairs the Census Committee for the Seattle Metropolitan Area (a 10 year term) which analyses demographic trends in the region. He also served on the Boundary Review Board (for an 8 year term) which oversees

city incorporation and annexation in King County and serves on the Municipal League Ballot Committee which oversees the initiative process. Prof. Jonathan Mayer served as Head of the Ethics Consult Service at Northwest Hospital. This body developed policy for issues such as the continuation of life support. In addition, Mayer was involved with individual case consultations. Mayer served as a volunteer for suicide prevention and crisis hotline in the Emergency Department at Northwest Hospital. Beyers serves on the Economic Forecasting Committee of the Northwest Regional Power Planning Council and served on the City of Seattle Comprehensive Plan Citizen Advisory Committee. Chrisman served on the Land Use Transition Advisory Committee and on the Environmentally Sensitive Advisory Committee for the City of Bainbridge Island. Sparke recently gave two public lectures, the first on Literature and Music in Canada, to Canadian Studies Educators in Seattle. The second presentation was an International Update on Cascadia to the business community, coordinated through CIBER in the business school. Mitchell is collaborating with Professors in the Seattle Community College system on a grant to develop a colloquium series bringing together educators and community members to examine Pacific Rim migration and ethnic community relations in Seattle. Mitchell is also giving a public lecture on Hong Kong and the Chinese Diaspora in a series sponsored by the Jackson School. Lawson serves on the core committee for the Dignity Principles Project which is working to ensure decent wages and basic social services are available to all working people in the Seattle area, and has given lectures in the Seattle Community Colleges on Latin American development. Jarosz is a member of the Advisory Board for Greenhouse Action, served as a member of the Honorary Committee for the Oxfam Seattle Hunger Banquet, and has lectured in the Seattle Community College System on integrating Service-learning into classes. Chan has delivered lectures on the future of Hong Kong to the Tacoma Kiwanis Club and to Seattle area educators at the summer institutes on campus. He also serves as advisor to the Hong Kong Student's Association at the UW. ZumBrunnen served on the panel of judges for the National Geographic Society sponsored Washington State Geography Bees 1989-1991, and has lectured extensively in regional middle schools about ethnic conflict and environmental challenges in the former USSR.

- *Continuing Education.* Geography offers two Distance Learning courses: Geog. 102 and Geog 277. Both have among the highest enrollments of any Distance Learning courses. We also offer seven evening degree courses per year, in several tracks within the Social Science concentration: social and environmental issues; gender, ethnicity, and culture; and law, politics, and the economy. Our enrollments in these courses have averaged around 75 students per quarter. In addition, our faculty have been actively involved in the conception and planning of a new certificate program in Geographic Information Systems, to be first offered in 1997. As we develop our departmental intranet and more course webs, we hope to be able to design and offer many more undergraduate courses via the Internet, as well as developing stand-alone learning modules that could be accessed as a public service. Chrisman is currently serving on an Advisory Committee for GIS professional education with UW Extension. Further, the Department proposed an Evening Degree MA in

Gegographical Analysis in 1993 and at that time it was cut from the state budget proposal. The possibility of offering graduate courses to nontraditional students and thereby improving access is appealing and the Department is monitoring the current campus-wide discussions around the evening degree program.

- Consulting.* The faculty engage in a wide variety of consulting work and this benefits our students at both undergraduate and graduate levels. Specifically, students are employed in these consulting positions and thus make crucial connections with the private and government spheres which may ultimately lead to employment after graduation. Further, students have the opportunity to use the skills they have learned in the program and to understand how these will be marketable as they enter the professional world. There are many and diverse examples of the consulting work that geography faculty engage in. Here are some examples. Jonathan Mayer consulted for the NAACP Legal Defense Fund. He evaluated the health case system for Contra Costa County, CA with regard to equity of access for minority populations. Mayer has also worked as an advisor to the Ministries of Health of several provinces in Canada regarding health policy and planning. Morrill undertook the Branch Campus Feasibility Study and the Study on Enrollment Forecasting for the Presidents of Washington's State Universities. ZumBrunnen consulted for USAID, the U.S. Department of Energy, the U.S. Environmental Protection Agency and private corporations on Russian environmental projects, energy systems, and resource strategies. In addition, ZumBrunnen has worked as a consultant for the National Geographic society developing publications and atlases for K-12 students. Chan consulted for the Asian Development Bank on Chinese local finance and migration projects. As an outgrowth of these projects, Chan is working to bring researchers from the Chinese Ministry of Finance to the University of Washington for a six month period of research. Nyerges has been active in consulting with the State Department of Transportation on the implementation of a GIS. Chrisman helped design the public domain data structure used by the Defense Mapping Agency's Digital Chart of the World Project, now used by many organizations as a worldwide base map. Chrisman's role in data quality investigations on this project provide materials for teaching his undergraduate courses. Morrill has consulted for the Seattle Schools, Evergreen Hospital, Washington State Liquor Control Board and various Fire Districts. All of Morrill's projects have employed students from the Department. Beyers has engaged in numerous economic impact studies, including studies of the impact of Seahawks football for King County, of Technology-Intensive industries for the Technology Alliance, of arts and cultural organizations in King County for the Corporate Council for the Arts, and of the Fred Hutchinson Cancer Research Center for the Center. These studies have led to models which have provided invaluable classroom examples of the use of input-output models, and these models have been used by students to learn the mechanics of impact analysis.

## VIII. EVALUATION

### Faculty

*Evaluation of faculty quality and productivity.* The Department has a systematic peer evaluation process for monitoring the quality and productivity of the faculty that follows University regulations. As noted in Section VI under 'Research Development', the Department has mentoring committees for all faculty below the rank of Full Professor. These committees report to all faculty above that rank annually about the performance of each colleague in terms of research, teaching and service. Quality and productivity in research are evaluated in terms of the range of activities documented in section VI and these include research publications, grants and contracts, awards, conference participation, editorial work, etc. As noted in section VI, the Department also holds an annual retreat at which we devote substantial time to discussing our current scholarly activities with each other. In addition, the chair carries out a separate review of all faculty for promotion and merit pay increases for faculty at all ranks including Full Professors.

*Faculty output measures:* Table 8.1 measures faculty productivity, in relation to all other Social science departments, in terms of student credit hour and degrees awarded per faculty FTE, as well as in terms of class size, time to degree, and other measures of faculty efficiency and productivity. By these measures, Geography compares favorably with the other Social Science departments, offering faster time to degree (almost two full years faster in the case of the Ph.D.), 70% more majors/faculty FTE; 35% more SCH/faculty FTE; 28% more lower-division SCH/faculty FTE; 40% lower budgetary allotment/SCH; 10-30% more degrees /faculty FTE; and significantly larger class size:



**Table 8.1 Faculty Teaching Productivity: Comparison of Educational Outputs per Input, Class Size, and Degrees Awarded for Geography and Other Social Science Departments, 1993-1996.**

(All averages per annum, per department)

		Geography	Other Social Sciences	
<b>Resources</b>				
Total State Budget		\$855,644	\$1,627,519 (mean) \$1,667,905 (median)	
Faculty Size (permanent faculty)		11.83	22.3 (mean) 22.4 (median)	
Grants & Contracts		\$229,104	\$179,075 (median)	
<b>Educational Outputs (total)</b>				
Credit hours taught (SCH)		17,197	23,518	
100/200-Level SCH (94-95 only)		8,592	12,120	
Undergraduate Majors (Avg/qtr)		200	244	
Graduate Students (Avg./qtr)		71	82.2	
% Non-Majors enrolled		66%	72%	
BAs granted		84	173	
MAs granted		10.3	15.6	
PhDs granted		3.7	5.4	
Time to degree-BA (calendar yrs):				
	nontransfer	4.9	5.1	
	transfer	3.4	3.98	
time to degree--MA (years)		2.3	3.02	
time to degree--PhD (years)		5.75	7.54	
<b>Output/Input</b>		<b>(per capita)</b>	<b>(per capita)</b>	<b>Index Geog./Soc. Sciences</b>
Majors/faculty FTE		16.9	11.1	152.6%
Grad students/faculty FTE		6.0	3.7	161.6%
SCH/faculty FTE		1453.7	1067.5	136.2%
100/200 sch/fac FTE (94/95 only)		747.0	537.0	139.1%
State budget/SCH		\$50	\$69	71.9%
Grants & Contracts/Fac FTE		\$19,922(median)	\$7,461 (median)	267.0%
BAs /faculty FTE		7.10	7.9	90.4%
MAs /faculty FTE		0.87	0.71	123.0%
PhDs /faculty FTE		0.31	0.2	127.6%
<b>Avg. Lower Div. Class Size</b>		<b>Overall</b>		
		61.75	55.2	111.9%
	Lectures	154.4	62.2	248.2%
	Quiz	28.7	24.9	115.3%
<b>Avg. Upper Div. Class Size</b>				
		37.5	29.6	126.7%

## Notes to Table 8.1:

- \*\* Social Science Departments exclude Society & Justice and Women's Studies because of small size and lack of graduate degrees.
- \*\* Total State Budget includes faculty, TA's, personnel, operations, and equipment.
- \*\* Faculty Size is permanent faculty FTE.
- \*\* SCH are based on "Departmental Summary-Credit Hours Instructed by Home Department" report.
- \*\* % Non-majors enrolled based on "Departmental Enrollment by Type of Majors" reports, 1994-96.
- \*\* SCH/faculty FTE based on permanent, ranked faculty FTE.
- \*\* For grants & contracts per faculty FTE, medians used for G&C and faculty FTE.
- \*\* All other data from USAG data base.

*Faculty service activities.* As detailed in section VII, the faculty are extensively involved in service activities on campus, in the region, and at the national level. This diverse range of activities are discussed as part of the yearly evaluation of colleagues for promotion and merit increases.

## Students

On the undergraduate level, we evaluate the quality of our students by both *quantitative* measures (GPA, GRE scores, their record of attending and completing graduate school, and their subsequent career paths), and *qualitative* measures (capstone course projects; portfolios; web pages; senior essays). On the graduate level, we evaluate student quality *quantitatively* via incoming GPA and GRE scores, outgoing GPA, grants and fellowships received, publications and papers delivered, and time to degree figures, and also on a series of *qualitative* measures. We address these programs separately.

### *Undergraduates*

1. *Overall GPA.* Our undergraduate majors' overall GPA for the 1993-96 period is slightly lower than that of the overall UW and the other Social Sciences (Geog: 3.06, UW 3.11, all other Social Sciences: 3.21). However, we note that our undergraduate population seems especially bipolar in that 20/94 (21%) had GPAs of 3.5 or above, while 16/94 (17%) had GPAs 2.6 or below. We have probably served the top tier of students more effectively than those with lower GPAs, and point to our active Honors program with anywhere between 8-12 students participating in year-long seminars, workshops, and special projects. However, we are not satisfied with the quality of our undergraduates: their overall GPA *in Geography courses* over the review period is the same as that of non-majors (3.11); few are going on to graduate school, at least directly from undergraduate careers, and many clearly struggle to maintain the requisite 2.5 GPA to earn a B.A. in Geography. We attribute this disappointing performance to several factors, as outlined in table below, with our attempts at mitigating these factors in the final column. We note that the median GPA reported here is for students entering between 1993-1996 (when they declare the major). This means that we are measuring the results of the old undergraduate major, before the revisions that were enacted last year. All those revisions to the major, and additional resources, noted in the last column below, are anticipated to

improve undergraduate performance.

**Figure 8.1: factors leading to low relative GPA in Geography majors**

Factor	Cause/Evidence	Mitigation, in-place or planned
outside work	in exit surveys, 58% said they worked at least 10 hours/week; 35% said they worked >20 hours a week	establish departmental undergraduate tuition scholarships as part of development campaign
coming to major late	internal students enter with an average of 110 credits, thus have to take mostly Geography courses—too many at once sometimes.	Because geography lacks visibility as a discipline, work with freshman orientation and high schools to get the word out sooner—importance of active, visible WWW site
Geography not first choice	many come after being denied entrance to Business, Engineering, Economics	new entrance requirements
coming to major poorly prepared	lack quantitative skills, computer software and research experience & library resource skills; economic analysis skills; transfer students not well-prepared for upper-division work	articulate key skills; consider a skills-oriented course for new majors to augment current Tutorial
no tutoring help available	students flounder in quantitative and theoretical courses	help organize undergraduate Tutoring Corps— develop curricular intranet
poor course planning by students	often take courses out of sequence or wait too long and “miss” a course	expand advising hours; departmental intranet to help students visualize how individual courses are part of a web of courses, many requiring prior work in the subject area; Tutorial For Majors course already in place
lack of intermediate courses	students unprepared for 400-level courses, creating wide and demoralizing performance disparity with highly-motivated and well-prepared graduate students also enrolled in these courses	continue to work on curricular articulation; plug gaps between courses with new courses or self-paced skills tutorials
lack of overall goal or purpose	students have no basis for course choice—see “old model,” section 2, above	see “New Model,” section 2, above
low incoming GPAs (average incoming GPA, 1993-96=RICK?)	course choice based on grading norms, not what student <i>should</i> be taking	

**2. GRE scores.** Based on GRE score reports mailed to us as the home department, the median scores for a cross-section of 50 of our undergraduate majors taking the test since

1993 have been about average: verbal: 530, quantitative 570; analytical: 580—in each case, 70-100 points below the average scores of newly-admitted students in the graduate programs of all the UW Social Science departments. It is notable however, that the students admitted to the UW social science departments are typically above the average.

3. *Graduate School acceptance and completion rates.* Since 1992, we have averaged, insofar as we know, about 10 students applying to graduate or professional school, and of these approximately 4 being admitted. In our exit surveys from 1994-96, only 7% of respondents indicated they were even applying to graduate school. However, our sense is that many defer this application for a few years, and, indeed, nearly half of the exit survey respondents said they planned to apply after a respite. Still, we do not know of more than a dozen or so of our recent graduates currently enrolled in graduate or professional programs—a number far too low and not indicative of superior academic performance.

4. *Subsequent career paths.* On this measure, we are heartened by the diverse and challenging career paths our majors pursue, as well as their relative ease in finding challenging jobs with career opportunities (see section IV on placement). This suggests that we have been quite successful in producing 'employable' undergraduates. Now the challenge is to raise the level of their intellectual achievement to be commensurate with their vocational abilities.

### *Graduate Students*

*Admissions quality measures:* The highly selective nature of our graduate program is indicated by several factors: a 25% acceptance rate (overall acceptance rate for geography as a discipline is 46%), relatively high GRE scores, in line with the average GRE scores of incoming graduate students in the other UW Social Science departments (scores in the mid- to upper-600s), and a respectable 3.55 GPA for incoming students. We are confident that these numbers both attest to, and maintain, the high academic standards of our graduate program, and are satisfied that they are reliable indicators of subsequent student performance.

*Progress and outcome measures:* These measures uniformly point toward the excellence and productivity of our graduate students. For example, our graduate student GPA over the 1992-96 period was 3.81 (Social Science average: 3.72), and that includes a 3.72 GPA in non-geography courses at the 400-level and above. Moreover, as attested to in Table 4.3, Geography Master's and Doctoral students have significantly faster time to degree averages than their counterparts in the other social sciences or in the UW as a whole. Furthermore, as indicated by Table 5.2, our graduate students in recent years have been highly successful at garnering outside support, being awarded competitive fellowships, grants, RAs, and other sources of support by departments, programs, and granting agencies and institutions. As a faculty we collectively review the academic progress and promise of each graduate student in a series of faculty meetings in the Spring. In addition, graduate students are required to meet with their faculty advisers quarterly and their supervisory committees at least once a year. To date we have carried out no systematic

follow-up studies of graduate student career paths, and, as noted elsewhere in this study, hope to free up some staff time to pursue this key missing ingredient of our overall program evaluation.

### Evaluation of Curriculum and Instruction.

*Exit Surveys:* According to exit surveys conducted from 1994-96, the undergraduate program excels in its academic advising, quality of instruction, ability to expose students to current social, economic, and political issues, and quality of the analytical and writing skills it teaches. Of majors surveyed, 87 per cent indicated a "high degree of satisfaction" with the major, and 91% said they would major in Geography again.

**Table 8.2: Summary Of Exit Surveys of Geography Majors, 1994-96 (n=148)**

#### Demographics:

<u>Age</u>	Average age upon entering UW:	19.7 years
	Average upon graduation:	23.8 years
<u>Gender:</u>	Male	70.1%
	Female	29.3%

#### Major Characteristics

Double major	8.0%
Transfer students	23.4%
Entered major Jr. or Sr. year:	76.4%

#### Most important reasons for entering Geography:

Interest in environment:	32.9%
Took a Geography course:	31.8%
Did well in Geography:	23.6%
Job opportunities:	20.9%
Interest in people:	19.7%
Interest in maps:	16%
Lack of entry requirements:	11.5%
Small department/class size:	10.8%
Other students' recommendation:	8.1%
To prepare for graduate school:	4.1%

#### Specialization in major

Urban:	34.2%
GIS:	30.5%
Economic:	19.0%
transportation:	3.4%

Environment/Resources	2.8%
International:	2.8%
Social:	1.4%
Asia:	0.07%

- Applied to graduate school: 7%
- Planned on applying to graduate school: 49.3%

**Work and course loads:**

Didn't have to work:	27.1%
Worked fewer than 10 hrs. week	13.5%
Worked 10-20 hrs. a week:	21.1%
Worked 20 hours a week :	29.8%
Worked 20+ hours a week:	7.5%

**Satisfaction measures**

Percentage indicating they had "very high" or "moderately high" satisfaction with the major:	87.2%
Percentage indicating they would choose Geography again as major:	91.2%

**Value Measures: % that found the following to be "very valuable" or "valuable":**

Geography Advisers:	95.3%
Non-required Geography courses:	90.5%
Related courses (other depts.):	85.1%
Geography faculty in class:	79.7%
Required Geography Courses:	76.0%
Geography faculty outside of class:	66.2%
Other students:	59.5%
Internships:	56.1%
Non-Geography Faculty (other depts.):	48.6%
Independent study:	48.6%
Distribution courses:	48.0%
Proficiency courses:	43.9%

**Geography Department Programs - Overall Excellence Measures.**

(Percentage graded "A" or "B")

Quality of advising:	94.6%
Content and Quality of Geography program:	91.2%
Quality of instruction:	89.2%
Exposure to social, economic and political issues:	87.2%
Quality of skills taught (writing and analytical):	78.4%
Quality of curriculum:	70.9%
Quality of overall liberal arts education:	68.2%

Quality of preparation for graduate school:	54.7%
Quality of departmental student services:	52.7%
Quality of career preparation:	50.0%

While we are proud of these numbers, we also are chastened by only moderate satisfaction with such departmental features as student services (especially tutoring and mentoring), career preparation, and preparation for graduate school (only 7% of respondents indicated that they had applied to graduate school). Due to staffing shortages, we are unable to regularly review the academic progress of individual undergraduate students, though the advising office does send letters to potential honors students as well as to students on or near probation, offering the latter academic advising, help with study skills, etc.

*UW-wide Office of Educational Assessment teaching effectiveness surveys and quarterly student ratings:* In a summary of undergraduate student satisfaction rankings from 1989-1993, Geography was ranked second overall in the university in terms of "quality of instruction in major field," achieving what the Office of Educational assessment called "remarkably high ratings". Similar measures for graduate training ranked us at 4.0 on a scale of 5, slightly below the Social Science median. Our overall quarterly student course evaluation measures averaged 4.1 on a scale of 5, roughly the Social Science median score, though we note that our TAs, with a mean score of 3.6, rank below the Social Science norm.

We take teaching evaluations extremely seriously, and use them to recommend that individual faculty and TAs with unacceptable teaching ratings work with the Center for Instructional Development and Research to become more effective teachers; we incorporate the information gleaned from the quarterly ratings into our "Teaching Effectiveness in Geography" workshop, Geo. 599, as well as in our annual TA training program held each September. We also have responded to somewhat low graduate student rankings of our lack of "research and training opportunities" and our lack of "adequate space and equipment" by offering more courses in research methods and by developing our Collaboratory project. Indeed, we intend to put significant development time and resources into these educational delivery models in the next few years.

We also encourage faculty teaching effectiveness by providing non-tenured faculty mentoring committees to assess areas where they might improve their teaching effectiveness. This oversight committee writes an annual report assessing the progress of each non-tenured faculty member.

*Departmental End-of-Program Assessment Policies and Measures:* In 1993 we identified four end-of-program initiatives we hoped to undertake in order to evaluate the undergraduate program: i) to analyze and improve our exit surveys and act on the results; 2) improve our analysis of our internship program; 3) to do a portfolio review of senior projects and Senior Essays, and, 4) to use our Effective Teaching in Geography proseminar as an assessment laboratory and workshop.

To date, we have only carried out the first of these, having designed and implemented an exit survey. However, as a direct result of this exit survey we redesigned the undergraduate program (see Section V above), to help better prepare students for post-college careers, to help them make better course choices and thus graduate in a more timely fashion, and to help them develop an identity as a geographer. To these ends, we have offered more team-oriented workshop capstone courses, more exposure to hardware and software (statistical packages; spreadsheets; relational databases; GIS mapping software), more case-study based analysis, and more of an emphasis on the development of writing and analytical thinking skills. This has led to some innovative outcomes in our classes:

- one group of seniors worked with an instructor to make a 15-minute video, "Squeezing the Hourglass," a study of income polarization and neighborhood change in Seattle. Students worked together to research, write, tape and edit the video, and met weekly to critique one another's work.
- rather than lecturing students on the features of the Seattle urban landscape, the instructor of a 400-level course devised a field trip in which students broke into groups which were responsible for "narrating" (describing, analyzing) various stops on the tour. Each group was later critiqued by the entire class.

As part of this new major program, the faculty have developed a series of new course offerings. Our most distinctive and successful response to our assessment surveys for the 1995/96 academic year was the implementation of a new Tutorial For Majors course, Geog 397. (See Section V above). In addition, faculty are developing capstone courses and certificate programs. Specifically, faculty have developed capstone courses in two of our four tracks within the major: Geog 463, GIS Workshop, in our Cartography and Geographical Information Systems track; and Geog 498, Undergraduate Seminar in Economic Geography. These courses are designed for students who have developed various technical and analytical skills necessary to carry our large research projects.

Because each of these measures is a means to an end rather than a measure of outcomes, we are not satisfied with our end-of-program assessment programs. Indeed, we now feel that we have come to **the end of Phase I** of our assessment project, the redesign of the major and curriculum, and hope to move on to **Phase II**, which will look at outcomes in terms of portfolio assessment, exit tests (many electronic in nature), senior seminars, group presentations to the entire faculty, and an exit interview with faculty members. We already have a set of exit standards, requisite skill sets, and a sense of the kind of analyses and modeling techniques our students should leave the major with. In the future, we will place much more emphasis on the students' ability to integrate all phases of their undergraduate training—mapping skills, statistical analysis and other quantitative skills, writing skills, theoretical sophistication, library resource and internet research skills, and collaborative skills—in final individual and group projects. We aim to produce majors



who not only are conversant in state-of-the-art technology, but can assemble their skills and bring them to bear on specific social, economic and political issues. Many of the means to this end are explored above, in section II (Undergraduate program Mission and Goals) and IV (Creative Solutions to Class Size and Quality vs. Quantity Issues).

## IX. RESOURCES

Like most programs at the University of Washington, the Geography Department faces a continuing shortage of resources in many key areas, especially faculty, support staff, and operations support. In the case of the Department these shortages are exacerbated because of the growth of the program, the diversity of our field, and the requirements for technical support. Since many of these problems have been noted elsewhere in this report in more programmatic detail, we focus here primarily on a summary of these points.

The substantial growth in the number of majors and the total number of students taught, coupled with the earlier loss of two positions, has led to the current situation where the Department carries the highest SCH load per faculty member of any major program at the University and one of the lowest FTE entitlements in the College (ranked lowest for 95-96). Given our desire to cover even a restricted set of systematic specialties, regional specialties, and methods specialties, our faculty resources are pushed to the maximum. As a result the honors advisor, along with both the Undergraduate and Graduate Coordinators, does not have any release time. Honors are typically offered as an overload as is the staffing of Geography 397 and Geography 598, the Graduate Teaching Seminar. The addition of a new faculty member this year promises to offer new opportunities to regain some lost ground and to better meet the needs of our students without continuing to impose excessive teaching burdens on the faculty.

*Faculty resources.* The faculty resource question is complicated by three additional factors. First, the archaic scheduling system of the University makes it difficult to offer lower division undergraduate courses without faculty lecturing 4 times per week. Such an arrangement is very inefficient and cannot be supported pedagogically. The problem is centered primarily at the 200 level courses. These courses are proving to be exceptionally popular because they offer a more targeted introductory level course than does Geography 100. Much of enrollment growth, and much of our growth in the number of majors, has come from these courses which typically has one quiz section and four lectures per week. Although this is obviously a University-wide problem, it takes a significant toll on our ability to maintain our research and teaching innovation. We are hoping that there will be some new thinking about course scheduling, probably in conjunction with the use of new educational technology such as that being developed in the Collaboratory. Second, the disjuncture between the evening program and the regular program continues to limit our resources. Part of the problem stems from the requirement to offer only upper division courses. Thus the four evening courses staffed by faculty do not truly represent the typical contribution of a faculty FTE. Surprisingly, something simple such as the separate listing of evening courses in the course schedule further adds to our difficulties in getting

the most impact out of our evening offerings. Finally, as note elsewhere, the removal of the research quarter has made it more difficult for faculty to travel for research activities, especially for international travel in the one to two week range, or to be more intensely involved with research.

*Office Staff.* The office staff has partially been reinstated to the level we had when the administrator position started to be shared with Philosophy. The administrator's position is now at 75 percent (up from 50% but still down from the former 100%). The additional 25% is crucial to our ability to maintain support for our many funded research projects and fellowships. At the moment we are offering minimal support for faculty, primarily focused on dispersal of funds and review of proposal budgets. Restoring the Administrator's position to 100 percent would have a substantial impact on our ability to support funded projects. The rest of the office staff (one full-time and one half-time positions) has proven to be adequate with the added help of work study students. Without these students, it would be very difficult to respond to faculty needs.

*Teaching Assistants.* The number of TA's has increased by four this year (two permanent and two temporary) so that we are much closer to offering the maximum number of sections that we can reasonably handle with the size of our faculty. Additional positions, however, could be used to offer more independent teaching for our advanced PhD students and to offer more sections of Geography 100. The addition of a permanent lead TA has had a very positive effect on our ability to coordinate TA training and support for our largest classes, namely Geography 100 and 205. There remain, however, two areas where increased state support could have a major impact. The first area is for the support of our data and software rich computing infrastructure. Many of our classes make intense use of common data sets, usually but not always tied to GIS. However, installing and maintaining these data sets has taxed our resources so that significant faculty time and teaching TA time is often diverted to this use. With the Collaboratory coming on line this problem will become more acute. The second need is for graduate student assistant in converting courses to the "hyper-learning" styles common to the effective use of the world wide web. The payback to the curriculum for even a single education technology curriculum development TA would be significant as we move to improve our courses pedagogically. Being a discipline firmly rooted in real places with all of the attendant data sources, this pedagogical transformation promises to be a significant positive change.

*Advising and LAN staff.* The advising and computer support staff are the two areas where we have been most in need of additional resources. The problem is especially acute for computer support. The department now has about 80 computers including two labs, administrative computers, research computers, and, of course, faculty computers. As noted above, we make extensive use of computing in our courses both in our labs and elsewhere on campus. This past year the LAN manager was upgraded from a 10 month to a 12 month GSA position. This helps cover two months that would otherwise have no departmental support. However, the current arrangement is flawed in two regards. First, the LAN manager is a graduate student. Graduate students do not typically have sufficient expertise for the position and/or move on once they have acquired those skills. Further,

the LAN manager is trapped in crisis management mode with so much computing in the Department. This means that the LAN manager cannot devote time to the crucial activities of developing data and tools to assist in the Departmental mission. Second, the 50 percent position provides only the most minimal support for the Department. Thus we rely on the Administrator to both supervise and back up the LAN manager. On a more positive note, we expect that the addition of the new support positions to the College staff will have a major impact on our ability to acquire and maintain our equipment.

Our advising staff consists of one 9 month GSA position and whatever part of Roth, the Assistant to the Chair, that needs to be allocated. With our number of majors and minors moving past the 200 mark, it has proven difficult to serve the students properly while leaving any time for program development. As with the LAN manager position, the half-time GSA position suffers from the need to relearn the position as students leave the program or take on other responsibilities (in spite of the fact that most of our student advisors have been extremely popular and effective). The Department has been aggressive about revisions of the curriculum and is intensely interested in developing greater extra-curricular student support and in developing more effective measures of outcomes. We expect these measures to provide not only a better assessment of our ability to reach our goals, but are of vital importance in constructing the new pedagogical environment. Without some additional support, these activities will be slow to develop, if we can develop them at all.

*Support.* Finally, an area of perennial concern is the support budget for the Department. By almost every measure, we have one of the lower levels of support per activity. This problem is made worse by our need to maintain student computing labs. These labs have significant operations costs associated with them that is being supported out of a lower than average departmental operations budget. Unlike larger departments, most of our recapture funds typically go directly to cover teaching. Thus there is little available to cover these needs nor to augment the austere faculty travel and visitor budgets.

## **X. SUMMARY**

### **Present Condition**

The following highlights the academic and service activities of our faculty and staff and the accomplishments of our graduate students.

- The Department was ranked among the top 10 U.S. geography departments in the field in 1965 by the National Research Council and it has remained in this top tier of the ranking for the last 31 years.
- Rated second among all UW departments by exiting undergraduates in rating of "quality of instruction in major field" for 1989-1995.

- High levels of funded faculty research grants and projects (see Table 6.1). Including major faculty grants linked to instructional development (see listings for Professors Jarosz, Lawson, Krumme, Chrisman, Nyerges, Mitchell, and Mayer).
- High degree of faculty service, at the University and in the region indicating a high level of commitment and accountability to place.
- The awarding of the University's Distinguished Teaching Award to Professor David Hodge in 1990 and to Professor Victoria Lawson in 1996.
- Highest faculty productivity in the social sciences in FTE entitlement percentile; highest percentage of SCH with ranked faculty among the social sciences; highest SCH/faculty FTE among the social sciences; lowest state budget/faculty FTE among the social sciences.
- Significantly exceeded the social science mean in majors/faculty FTE (48% above the mean); graduate students/faculty FTE (57% above the mean); lower-division SCH/faculty (39% above the mean).
- A greatly-enhanced Service Learning (SL) component of our undergraduate curriculum, augmented by a FIPSE grant through the Carlson Office which allowed us to both expand the number of SL opportunities and strengthen the articulation between the service learning components and the other course materials. Since 1992 ten faculty or senior graduate students have introduced nine service-learning courses into the curriculum. The Department views service-learning as an important component of our service to the community, and as an important tool for critical and innovative pedagogy.
- Doubling of majors since 1989 and near tripling of BAs granted/year since 1992.
- Fastest time to degree for doctoral students among the social sciences.
- Tripling of outside support (fellowships, grants, RAs, etc) for graduate students.
- Complete overhaul and improvement of academic and student services for the undergraduate and graduate programs including:
  - full-time adviser and student service coordinator initiated in 1987
  - writing center for undergraduates in Geography courses established in 1989
  - career counseling and career guide published annually, begun in 1991
  - internship program established in 1989
  - curricular guide/compass/ skills development inventory published in 1995

- undergraduate handbook initially published in 1988
- graduate handbook and bulletin initially published in 1988
- annual Chronicle of departmental activity begun in 1986
- quarterly course descriptions for Geography, circulated to other departments begun in 1988
- advising via e-mail begun in 1995
- WWW undergraduate Home Page established in 1995

### **Plans Currently Being Implemented**

The Department is currently striving to improve its research and teaching productivity and effectiveness in a variety of ways: developing intellectual leadership, through continued faculty development, and improvements to our graduate and undergraduate programs. These are the areas in which we are currently working to improve our position relative to our peer departments at other major North American institutions.

### *Intellectual Initiatives*

While the faculty can point to many individual accomplishments, many important research initiatives require larger groups. Our Department is more than the sum of its parts, and core groups are providing leadership in important research areas. Our research is empowered by interactions with colleagues around campus and beyond. The discipline of geography lies at the confluence of many exciting trends in the world of science, the world of academic debate and the world of daily life. No faculty, however large, could respond to all the possible challenges. Still, the vitality of the program depends on continuing to play a key on the campus, in the community and in the international scientific arena. The following outlines some examples of the types of intellectual initiatives that the department is pursuing and that contribute to ongoing intellectual efforts on campus and in broader arenas.

*Development and International Studies:* The department has a critical mass of faculty working in the interdisciplinary fields of Development and International Studies. Geographers are at the forefront in examining themes such as globalization, global environmental change, and the geopolitics of international relations, examining how the mobility of capital, commodities, and information integrate people and places in new world-wide cultural, political and economic geographies. In examining how the construction of cultural and geographic differences at the local level affect linkages to the international political economy, faculty in this department necessarily extend and deepen the customary definitions of international studies beyond considerations of place to larger interdisciplinary questions and themes about the ways global linkages affect various places, cities, and people. For example, the geography faculty are currently engaged in research which examines rural-urban migration in China and state policies (Chan), its gendered forms in Latin America and how those forms intersect with the processes of globalization and neoliberal reform (Lawson), the role of capital flows and ethnic and race relations in the Pacific Rim (Mitchell), the geopolitics of nationalism, regionalism, and

identity formation in Canada, the U.S. and Mexico in the wake of the North American Free Trade Agreement (Sparke), the political ecology of disease in the Caribbean (Mayer), environmental crisis and change in Russia (ZumBrunnen), industrial restructuring and the rise of the service economy in the U.S. as compared to Western Europe and Australia (Beyers), and a comparative study of grower and farm worker relations in the U.S. and South Africa (Jarosz). The faculty of this department are taking a leadership role in theoretical and empirical writings in regional geography, feminist geography, political ecology and post-colonial and cultural studies both within the discipline's subfield of human geography as well as in the social sciences more broadly.

In addition, departmental faculty are affiliated with a wide variety of campus centers and programs involved in research and teaching in the areas of development and international studies. These include: the International Health Program (Mayer, Jarosz), the Center for Demography and Ecology (Chan, Hodge, Jarosz, Lawson, Mitchell, Morrill), Women's Studies (Lawson, Jarosz, Mitchell), the Graduate Option Program in Global Trade, Transportation and Logistics (GTTL) (Beyers, Fleming, Hodge, Morrill, Nyerges) and International Studies (Jarosz, Sparke), Canadian Studies (Jackson, Mitchell, Sparke), China Studies (Chan, Mitchell), European Studies (Krumme), Latin American Studies (Lawson), Russian/East European/Central Asian Studies (ZumBrunnen), Southeast Asian Studies (Mitchell), African Studies (Jarosz). As such, the Geography Faculty comprise a crucial critical mass of expertise in areas that are of great importance to many other units across the campus. For example, Mitchell is named as a participant the Rockefeller Institutional Grant in the Humanities (awarded to the University of Washington in 1996) to support preliminary work for an interdisciplinary Program in Critical Asian Studies. In addition, geography faculty will be taking an active role in this year's international conference on the Chinese Diaspora at the University of Washington. Lawson, an active member of the Latin American Studies Program Executive Committee, is involved in a current proposal for the University Initiatives Fund which would establish a North-South Center at UW. The purpose of this center is to promote interdisciplinary teaching and research on Latin American societies in comparison with our own society and the Pacific Northwest Region.

*Pacific Rim Studies:* The Department is centrally positioned within Pacific Rim Studies at the University of Washington. This is another area where Geography's integrative endeavors are bringing forth new intellectual cross-fertilizations. In the last few years, the Department has hired three faculty members who each in different ways attend to the confluence of questions surrounding the globalization of finance, migration, and the transformation of border economies in the context of Pacific Rim developments such as APEC, NAFTA, the change to PRC rule in Hong Kong, the economic development of China, and the emergence of the transnational region between Canada and the Pacific North West called Cascadia. These hires complement existing strengths in migration studies across the Americas and have furthered the links between Geography, and the Jackson School Programs in Canadian Studies, Latin American Studies, South-East Asian Studies and China Studies. One example of the results of such linkage has been the collaboration of all of the three new Geography faculty with efforts by scholars in

Anthropology and Women's Studies to secure the Rockefeller Grant for Asian Studies. Other illustrations include the collaboration in the opening of APEC center and on proposals to develop a distance learning component in Canadian Studies. With further strong ties to the Center for Demography and Ecology, and with research grants from several sources in Asia (including the Asia Pacific Foundation and the Asian Development Bank), the Department is extremely well positioned to take a leading role in both articulating the geographic significance and furthering the development of Pacific Rim Studies on campus.

*Geographic Information Systems (GIS)* provide analytical capability to integrate diverse forms of spatial information. They also change the fundamental way of looking at the world. GIS has changed the way that scientists conduct landscape ecology, earth sciences and social sciences. GIS has also changed the expectations placed on resource management, engineering, planning, and business. The University of Washington has a growing community of research projects that depend upon a GIS approach, and the demand for training in GIS exceeds our capacity. Outside UW, the GIS industry has grown to perhaps \$6 billion this year. The University of Washington has been a leader in developing GIS over the past thirty-five years. As the number of disciplines relying on GIS across so many colleges has expanded, it has been difficult to maintain a coherent program and to share resources. The University of Washington Consortium for Geographic Information is a grouping of faculty and staff with common interests related to GIS, organized in 1993. It grew out of various informal linkages developed over the past ten years. This consortium has developed this plan of action to promote the coordination of geographic information systems, remote sensing, and related fields on this campus. The Department of Geography has played a leadership role in creating this Consortium and drafting the preproposal submitted in November for support through the President's University Initiative Fund. In addition, we orchestrated the University of Washington role in sending the original letter inviting campuses to join the national University Consortium for Geographic Information Science in 1994. Due to the complexities of a large campus, it has taken an extra year to have the campus formally join this body, but that occurred in November 1996. In some disciplines, GIS will simply serve as a tool for their research and instruction. In Geography, however, GIS is no simple tool. The new technology restructures the understanding of interactions and strengthens the need for critical thinking about the limitations of sources of information. The faculty in this field have made a particular effort to engage in the debates about the linkages between social issues and the technical ones. Professor Nyerges has developed a specialization in collaborative work and participation in shared goals. Some of this effort involves a large multi-campus interdisciplinary team working on stakeholder participation in the Hanford cleanup process. Chrisman has taken on research focused on the practice of GIS. These efforts have been groundbreaking in terms of working to eliminate the classical divide between research in cartography and other forms of geographic inquiry.

*Business Geographics.* We foresee very rapid changes in the educational technologies we are using in GIS and in other areas where computers are used, particularly the Internet. We anticipate GIS and Internet technologies moving closer together, and the combined

use of computer-mapping, Internet- and (socio-economic) data base- technologies and location-allocation modeling techniques will become a particularly important (set of) skill(s) for many of our undergraduates whose first jobs after graduation involve real estate, urban, demographic, retail (e.g. siting), marketing, environmental, and international trade and investment analyses. In fact, we believe that there soon will be increased pressure to develop learning experiences in the relatively new field of (local to global) Business Geographics which would create tighter connections than we have had so far between our GIS track and our departmental specialization in Economic and Business Geography incl. those of our regional specializations which include global trade and economic development issues (e.g. related to APEC regions). This field would help, for example, in the analysis of locational qualities, labor markets, marketing (incl. consumer markets), potential risk exposure, social, economic and environmental impacts and global trade potentials.

We anticipate not only a tremendous need for geographically referenced business information and the mapping of such information but also the need to develop web sites for the presentation of such information. In addition, we suggest that our Department is not only well positioned in pursuing Geography's important role as an economic and business information intermediary, but that we will also continue to explore, conceptually, theoretically and empirically, the geography of business information. This will include the nature of locational and regionally important economic information, geographically significant differences in quantity, quality and timeliness of available information, differences in access to such information, the behaviors (e.g. corporate disclosure strategies) leading to such differentiation as well as changes in information policies and how these changes may influence business behaviors and rearrange economic structures. An improved understanding of the nature of information will, in turn, help us to investigate the role of spatial and place-specific information in business and public-sector decision-making processes.

*Transformation of regions and communities* (Urban and regional analysis and development). For decades, this department has pioneered the study of urban and regional organization and development, from the scale of the neighborhood to the nation and beyond. While individual faculty may have, through specialized training, identified themselves as economic, social or political geographers, and focused their research on such topics as industrial change, migration and population redistribution, urban social change, class and race segregation, the impacts of public transportation investments, or metropolitan political organization and conflict, the work is unified in its dedication to understanding the urban and regional landscape and how it evolves. The department has had and still has a giant influence on the development of theory of urban structure and change, of the relation of transport to development, of the role of politics on the planning of the metropolis, and on the relation of economic development and population redistribution. In addition a prominent theme cutting across these topics has been a concern with issues of equity, with what kinds of people and what areas are advantaged or disadvantaged from urban and regional growth, decline and transformation. The faculty also have a strong interest in rural development, particularly in the western United States



and Canada. The changing economic, social, and political circumstances in western rural communities, policies of federal land managing agencies, environmental remediation efforts such as at Hanford, and growth management planning are examples of these interests (Beyers; Jarosz; Morrill).

In each of these example initiatives, the Geography Department seeks to serve a larger community and a larger set of intellectual issues through collaboration and cooperation with a diverse set of other disciplines.

### *Faculty Development*

To continue to strengthen the research and teaching missions of the department the faculty has identified several goals that we are striving for to enhance our intellectual standing in the discipline:

- Continue to increase the amount of funded research performed by our faculty in all areas of our program, including the encouragement of more collaborative and interdisciplinary funded research.
- Endeavor to expand the reach of our publications beyond the disciplinary audience of journals through such developments as more book publications and use of the internet.
- Continue to build our broad strength and intellectual leadership in methodological discussions within the discipline.
- Continued faculty hiring is also an important avenue for reaching our goals. The faculty are currently engaged in a job search to fill the further needs of the Department. The job advertisement seeks geographers with expertise in one of the following areas: urban geography, population geography, human/environmental interactions, international trade and investment, transportation or communication, and political/social geography. In addition, one of these new hires will teach core courses in methods. While this list may seem broad but our intent is clear. We aspire to be number one in these areas of human geography.

### *Enhancements to our Degree Programs*

See details under section V Curriculum and Instruction where we detail enhancements to our undergraduate and graduate programs.

## **XI. FUTURE GOALS AND NEEDS**

This Self Study Report paints a picture of dynamic unit in the College of Arts and Sciences. If the department had not sensed the need over that past half-decade to respond strategically and intelligently to changes in its performance indicators, we would be in a rather different position writing this self-study. Prior sections have laid out where we have

been, the progress we have made, and have given a sense of our direction. In this section we describe where we are headed, and most particularly, what we want to become as a unit in this dynamic research university. We begin by noting priority goals that have been discussed in other parts of this report.

## Future Goals

*We want to become better.* Although we are extremely proud of the accomplishments of the past 10 years and of our high national ranking, we feel that we can, and must, become better. We want to appoint faculty, produce graduates, and relate to the communities that we serve in ways that will lead to a better program in the field of geography with even more meaningful contributions to the discipline and to the University. Above all, this means making choices, hard choices in an environment of incredible change. In the sections below we lay out what we see to be the most important issues that we need to address.

### *Enhance the Impact of Faculty*

- *Identify intellectual initiatives in which we can have a major impact in the next ten years.* These initiatives will emerge from the complementary interests of faculty within the department and, as is our tradition, include significant contributions to interdisciplinary approaches to major societal issues. We cannot be all things; we must make choices that lead us to be among the very best in the world in those areas where we have the interest and strategic advantage to do so.
- *Concentrate the efforts of faculty so that the impact of our efforts is increased.* We feel that we should place greater emphasis on publishing our work in book form. Even more of our research should be supported by external grants. We should have more and deeper collaborations among ourselves in our research projects so that our combined efforts generate greater depth and impact.

### *Enhance the Graduate Program*

- *Increase the professional activity of graduate students.* More of our graduate students should be publishing while graduate students and more should be participating in professional meetings. In particular we need to increase the fiscal resources available to support such graduate student activities. Realistically this means increasing donations to departmental support funds. We also need to create a stronger tradition of faculty and students publishing together.
- *Placement.* We are continuing to work to improve the placement of our Ph.D. students in both academic and non-academic jobs. With additional resources, we can provide more graduate student support to attend the national meetings and thereby to improve the professionalism of our students.

- *Revise a core curriculum.* We have made several attempts in recent years to create a coherent core to our graduate curriculum but have not done so, in large part because of the lack of faculty resources. However, we must find a way to provide a core curriculum, including both quantitative and qualitative methods.
- *Improve diversity.* The faculty and graduate students will continue to work on initiatives to improve the diversity of the student body. We are developing a more aggressive outreach to prospective students across the country, as discussed in section IV.
- *Evening MA Degree.* The Department is interested in continuing to explore the potential for an Evening MA Program, in line with current campus-wide discussions about the role of the evening program in the University overall.

#### *Enhance the Undergraduate Program*

- *Develop a more thorough end-of-program assessment,* tied to curricular reform and new technologies, and develop long-term program evaluation including follow-up with alumni. We need a better understanding of the outcome of our efforts.
- *Improve the academic quality of undergraduate majors.* We are troubled by the low average GPA of our majors and by the relatively small number of our majors who go on to graduate school. We have no problem with accepting our share of students with lower GPA into the major, but we want to increase the number of superior students who become majors, and we want to provide an environment that will better encourage them to go on to postgraduate education.
- *Improve the honors program.* One of the most obvious ways to better serve the best students is to provide a better honors program. Unfortunately, the honors program has had to rely on the overload contributions of faculty. We need to create a permanent plan that reallocates departmental resources to this priority task.
- *Improve the spirit and identity of undergraduate majors.* This involves enhancing the activities of the Undergraduate Geography Association which, sadly, does not even exist most years, and improve our connections to the Professional Geographers of Puget Sound Association.
- *Increase the number of minority and women majors.*
- *Improve the use of the internet to enhance teaching and maintain the core departmental profile.* This will enhance the quality of the program and provide a more accessible and comprehensive profile of our activities.

## Resource needs

This report has documented in numerous ways the exceptional level of productivity of the Department. However, it has also revealed that we are at, and probably beyond, the level of performance that can be sustained with existing resources no matter how strong our will to do so. The tension between quality and quantity has become acute, and the long-term productivity of faculty, which requires constant reinvestment, is threatened by the immediate crush of day-to-day activities. We believe that the successes of the past 10 years are a result of the commitment of the faculty to the core missions of the University and to the rise of Geography as a discipline relevant to modern society. We believe that the University, and the state of Washington, would be well served by increasing the emphasis on Geography. We are willing to accept more responsibility and an even greater leadership role in fostering meaningful interdisciplinary activities, but we cannot do so without more resources. We are, quite bluntly, near the limits of our capacity to serve the many missions expected of us.

- *Additional faculty.* The addition of 2 to 4 faculty would allow us to better resolve the tension between quality and quantity. We would remain a department small enough to maintain a strong sense of internal identity and loyalty, but we would be much better able to support core elements of the instructional program and provide additional access for students through significantly enhanced economies of scale. With more faculty resources we can increase the number of major beyond the 200-225 range, provide better services to the best undergraduates, and better serve our graduate students. There is likely to be a significant increase in demand for access to our major, resulting from the K-12 initiative that developed national standards for Geography education. With regard to graduate enrollments, as a faculty we bear a very heavy per-person load at the moment, and we would be well advised to target a reduction in this load so as to improve individualized access to faculty and the quality of graduate training, especially at the Ph.D. level. If we were able to add two additional faculty to our roster over the next few years, we could accommodate additional undergraduate demand, provide a much more extensive honors program within our major, teach courses such as the Tutorial for Majors and the Graduate Teaching Seminar on a more frequent basis, and work on the enhancements and innovations of both undergraduate and graduate programs described in this report. We also need an increased budget to support our research activities for bringing in visiting scholars for short and long term stays to present in colloquium, speak in classes, collaborate on research. This will serve to highlight our research profile nationally.
- *Enhanced Staff support.* We have several severe constraints imposed by the current level of staff support. First, with an emphasis on funded research (already the highest amount of grant money per FTE in the social sciences), we need **the administrator position reinstated at 100%** to cope with the work load generated by this activity. Second, given the number of computers, the importance of computing to our curriculum, and the complexity of maintaining the research and instructional technology infrastructure, we need a **full-time LAN manager/technical support**

*person.* At present, too much faculty time is devoted to maintaining data sets, software and hardware associated with our network, labs and Collaboratory. Third, the increase in the number of majors and the complications of modern university students requires *additional advising support.* We have been extremely innovative in our curriculum, in outcomes assessment, and in program support. But the sheer number of students has left little time to generate and support these innovations that we believe will have a major impact on the quality of the education received by our students. Thus we need to convert the 0.5 FTE graduate student service appointment currently used for advising to a full-time professional counseling position. Fourth, we would like to *increase the number of teaching assistants in the 200 level* courses so that the classes could have two labs per week instead of one. These course are proving immensely popular and now have large enrollments. Unfortunately, the T.A. resources are too limited to allow the level of interactive and active learning profile that we would like to see. Alternatively, we are committed to using technology to enhance our curriculum and this technology could include new models for the 200 level courses. However, we need *support to help faculty develop technology-based curriculum materials.* We suggest the addition of a technology T.A. who, like the lead T.A., would play a broad role in helping faculty enhance their courses through technology. Although this is expensive up front, it will significantly improve the quality of instruction, provide greater access to scarce class materials, and ultimately reduce other costs such as photocopying.

- *Enhanced operations budget.* We find ourselves in the difficult position of having a relatively low operations budget and unusually high demands on that budget (i.e. beyond the usual University constraints on travel and the like). We have been aggressive in receiving two NSF ILI grants to create and equip computer-based laboratories. These laboratories are critical to the functions of a geography department and are not easily duplicated elsewhere. Indeed, we are at the point where the labs are booked virtually every hour of the day and heavily used in the evening. The maintenance of these labs has required diversion of other funds, posing great difficulties on the rest of the Departmental budget. Also, the 20 or so 486 computers in the Sherman Lab are nearing the end of their functional life. Replacing those machines is imperative in order to maintain the current curriculum, let alone improving it.

### **Anticipated Results**

If we are able to garner the resources just identified, then our program should improve in each of the areas we have identified. Our faculty would be stronger and more effective in graduate and undergraduate education, research and service. In addition, our graduates would be obtaining a higher quality education, and the Department would be an even more attractive program for undergraduate and graduate education than is the case at present.