

SIMON FRASER UNIVERSITY

S.00-84

Senate Committee on University Priorities

Memorandum

TO: Senate

FROM: John Waterhouse
Vice President, Academic

RE: External Review - Department of
Geography

DATE: 4 October 2000

External Reviews of academic units are conducted under Guidelines¹ approved by Senate. The review process is intended to ensure that the quality of the department's academic programs and research is high, that members of the department participate in the administration of departments, and that the departmental environment is conducive to the department's objectives. Under these Guidelines, Senate is expected to receive advice from the Senate Committee on University Priorities and to provide feedback to the unit and the Dean.

The following materials are forwarded to Senate for consideration:

- The External Review Report
- The response to the External Review Report by the Department
- The comments of the Dean
- The comments of the Vice-President, Academic
- The recommendations from the Senate Committee on University Priorities

The Department Chair, Dr. A. Gill will be available at Senate as a resource person.

Motion

That Senate concurs with the recommendation from the Senate Committee on University Priorities concerning advice to the Department of Geography on priority items resulting from the external review, as outlined in SCUP 00-18b.

¹ The Guidelines can be found at: <http://www.reg.sfu.ca/Senate/SenateComms/SCUP-ExReview.html>.

SIMON FRASER UNIVERSITY**Senate Committee on University Priorities****Memorandum****TO:** Senate**FROM:** John Waterhouse
Vice President, Academic**RE:** External Review - Department of
Geography**DATE:** 4 October 2000

The Senate Committee on University Priorities has reviewed the External Review Report prepared on the Department of Geography in February 2000, together with the response from the Department and comments from the Dean and the Vice President, Academic.

SCUP recommends to Senate that the Department and Dean be advised to pursue the following as priority items:

1. The Department of Geography should be advised to develop a comprehensive faculty renewal and retention plan that reflects changing student preferences and emerging educational/research needs. This plan should include a review of the present and emerging pedagogical strengths of the Department and consider appropriate pedagogical reform.
2. The Department of Geography should be encouraged to shift workload allocations to ensure that graduate programming is adequately supported.
3. As part of their 3-Year Academic Plan, the Department of Geography should be requested to report on GIS and SIS programming in the Department. This should include an assessment of curriculum; student enrolment and demand; adequacy of facilities, equipment and infrastructure to support existing programs; the relationship of GIS and SIS to other programs within the Department and to other departments involved in GIS and/or SIS, to the discipline of Geography, and to current and emerging research areas; and whether expansion in GIS and/or SIS is one of the priorities of the Department.

c. A. Gill
J. Pierce

SIMON FRASER UNIVERSITY

Office of the Vice President, Academic

MEMORANDUM

TO: Senate Committee on
University Priorities

FROM: J.M. Munro,
Vice President, Academic

SUBJECT: External Review, Department
of Geography

DATE: August 31, 2000

The report of the External Review Committee of the Department of Geography was submitted on February 9, 2000 following the review visit on October 27-30, 1999. The response of the Department was submitted on April 14, 2000 and the comments of the Dean of Arts on April 26, 2000.

My comments on this external review and the submission from the School and Dean are as follows.

1. The tone of this review report is more negative than its assessment of the Department. Perhaps the most negative comment is the statement that the previous (1991) review "might just as well not have taken place." The review committee was probably not in a good position to make this judgement and in any case they offer little support for it. The reduction in resources that they believe has affected Geography over the last decade is in fact a reflection of what has happened to the whole University in a period of frozen tuition fees, stagnant government grants, and increased costs. Also, as the Chair and Dean note, there have been additional resources provided to Geography in the last five years.
2. It is easy to agree with the observation that planning and managing faculty renewal will be a top priority for the period ahead. The Department and Dean are both aware of this and it is encouraging that work is going forward on a plan. However, it is important that this work be completed when it is needed; the appointment of three new faculty this year (after the review) will address some of the reviewers' concerns about faculty resources but it would be better to have the renewal plan in place before new faculty appointments on this scale are made.
3. The review report's harshest criticism is reserved for the Department's physical facilities. Some of these shortcomings are common throughout the RCB building and there are other departments that are badly served by its bunker-like design. However, it might be possible to improve the quality of some of the rooms assigned to Geography. The assistance of Facilities Management should be sought in preparing plans for needed renovations. While the University's renovations funding is now very

limited, it might be able to support a significant renovation directed at the shortcomings of this building, given sufficient lead time..

4. The report recognizes the issue of adequate teaching support for the graduate program. This matter has apparently been under discussion in the Department for some time. The provisions of the Faculty Workload Policy should be applied to arrange proper teaching credit for faculty members who teach graduate courses and to give some recognition for large supervisory responsibilities. A 60-student graduate program is certainly large enough to claim a reasonable share of the Department's teaching resources.

5. The altered position of physical geography in the decade in which the University established a new Department of Earth Sciences might have received more focussed attention in the review. Are there opportunities for interaction that are not being addressed? Should there be a deep re-examination of the physical geography curriculum? There are several indications throughout the report that physical geography's situation needs fundamental attention.



cc. J.T. Pierce
A.M. Gill

00-13

SIMON FRASER UNIVERSITY
OFFICE OF THE DEAN
FACULTY OF ARTS



MEMORANDUM

To: Jock Munro
VP Academic

From: John T. Pierce
Dean of Arts

Subject: Response to the Dept. of Geography's
External Review

Date: April 26, 2000

Alison Gill has done an excellent job in responding to the concerns and recommendation of the external review committee. This has been no small task because the report is ambiguous if not misleading on a number of important issues including the SIS program, financial support and progressive changes since the past review. That said, the report does accurately identify issues requiring action and leverage points as sources of solution. My comments will be brief and to the point following Dr. Gill's four major sections.

Faculty Renewal/Retention: Given the tripartite structure of the Geography program, perceived inequities in workload among these three and the impending retirement of a number of faculty, a clear replacement plan is required which is sensitive to changing student preferences and emerging educational/research needs. I believe the department has recognized the critical importance of this plan and is in the process of responding. Identifying the present and emerging pedagogical strengths of the Department will be an important part of this process.

In the last three years the department has hired five new faculty in key research strength areas which bodes well for the future. In terms of retention, the reviewers and Dr. Gill point to the inequities in workload between the Physical Geographers and other natural scientists in the University. Pedagogical reform may assist in reducing the average number of undergraduate courses taught by the Physical Geographers.

Curriculum Revision and Workload Allocation: The reviewers laud the quality of the undergraduate program but believe that in the absence of pedagogical reform it will be at the expense of the graduate program. The department has already completed a workload allocation review process. This involved revision to the undergraduate curriculum and will be further extended based upon the comment of

the reviewers. The department is currently considering the development of a specialized Master's program in SIS. The Geography Department is well recognized in this area and there is no shortage of demand for a graduate degree. The Dean would be highly supportive of this if an adequate proposal can be articulated.

Resources: The lack of resources is a pervasive theme in the report. While headway has been made in creating better lab space, new vehicles, creating facilities for a SIS program, funding a co-op co-ordinator, major shortcomings still exist in terms of recognizing the lab and field-based requirements of physical geography, the ongoing investment costs to sustain an up-to-date SIS facility and more general software and computing hardware needs of students, staff and faculty. Solutions to these problems may be beyond the ability of the Faculty of Arts.

Governance: The department is very much run along the lines of a participatory democracy with its attendant strengths and weaknesses. I believe Alison Gill has improved the level of communication and consensus building in the department but ultimately there must be a spirit of co-operation and a shared set of values if this is going to succeed. The departments's retreat will address a number of these governance issues.

A handwritten signature in black ink, consisting of several overlapping loops and a long horizontal stroke extending to the right.

SIMON FRASER UNIVERSITY
Department of Geography
MEMORANDUM

To: John T. Pierce
Dean of Arts

From: Alison M. Gill
Chair, Geography

Subject: Departmental Response
Geography External Review

Date: 14 April 2000

Attached is the Department of Geography's response to the report of the external reviewers. This response was put together from written comments submitted by members of the Department and from discussions held at a Department meeting on 16 March.

Please forward this response to the Office of the Vice-President, Academic. I understand it should be in that office by April 24 (Easter Monday).←



Alison M. Gill
Chair, Geography

/hj

SIMON FRASER UNIVERSITY
Department of Geography External Review
Departmental Response

April 2000

EXECUTIVE SUMMARY

- The External Review of the Department of Geography confirms the strengths and challenges identified by the Department in the self-assessment documentation supplied to the committee.

- The overwhelming pervading theme of the review concentrates on funding, particularly faculty resources, equipment needs and criticisms of the Department's physical facilities.

- The Department believes that addressing the tasks in the following three issues will be helpful in responding to the closely inter-related problem areas identified in the external review.

1. Departmental Identity/Hiring Plan:

- identify areas of strength and gaps to be filled in order to produce a strategic plan for faculty renewal.
- investigate the technical and/or lab instructor support required in all areas of the Department, but particularly in the SIS and physical geography programs.

2. Curriculum Review/Teaching Workload Allocation:

- integrate identified departmental strengths into a coherent undergraduate program, particularly on the human side, and to ensure complementarity of the undergraduate and graduate programs.
- establish a more equitable teaching load between members of the Department, balancing large lower-division courses with smaller upper-level courses, and ensuring a fair distribution of new course preparations amongst faculty members.
- establish a more balanced work load between undergraduate and graduate programs.
- bring the teaching loads of physical geographers more into line with those of faculty in other science-based disciplines in an effort to retain physical geography faculty in a Faculty of Arts in which they feel at a competitive disadvantage.

3. Equipment and Facilities/Improved Funding Mechanisms:

- encourage the Administration to provide a better mechanism for funding resource-intensive programs within the Faculty of Arts.
- better acknowledge the role of the Department of Geography in the BSc program
- recognize the research/teaching equipment and space needs of geographers.
- facilitate faculty research by providing more institutional support.
- address the issues of neglected and shabby physical space.

All these issues will be discussed at the Department's forthcoming retreat and will form the basis of its renewed three-year plan in Fall 2000.

INTRODUCTION

The external review committee based its report on the analysis of a large body of packaged information, together with a three-day site visit that included meetings with faculty, staff, graduate and undergraduate students within the Department and with senior university administrators. Information on the Department was then synthesized with reference to the team's experience and knowledge of other departments of geography in Canada. As is common with such reviews, the results reflect a certain unevenness in interpretation. On the whole, the reviewers have clearly identified key issues and areas in which change is needed.

The reviewers did an admirable job of incorporating in the report a range of views and opinions held within the Department. There is a general sense that the review essentially confirms the Department's self-assessment of its strengths and challenges. While the review falls short of providing specific solutions, it does highlight issues the Department and Administration need to address if the Department is to continue to maintain or enhance its current "well-respected position among departments of Geography in Canada." Many of the weaknesses identified relate to the persistent problems associated with funding and resources. These problems are common throughout the institution and many are not readily addressed at the departmental level.

It should be acknowledged that Geography's "well-respected position among departments of geography in Canada" is the result of long-term investment of effort that reflects well on past Chairs (Pierce, Hayter and Hickin). The reviewers note further that "[t]his reputation can be maintained and improved in Canada and beyond with the hiring of about 4-5 academics of the calibre of recent appointments in the next 4 to 5 years. High quality faculty are necessary to sustain a strong academic department." The three new appointments concluded since the review was conducted offer promise that the Department's reputation will continue to be enhanced. However, as the report states, "[new appointments] must be supported by appropriate allocation of resources from the University as a milieu where scholarly activities are valued and nurtured."

In response to the review the Department has already re-activated discussions on curriculum revision and has planned a three-day retreat at the end of April. The Department will deliberate about needs across the discipline, recognizing forthcoming retirements, the need to sustain viable BA and BSc degree programs and the SIS Certificate, and to support a high-quality graduate program. Deliberations will also include a needs assessment in

terms of equipment and facilities. A three-year plan will be prepared for September 2000. It will clearly identify areas of strength and priorities for new hiring.

This response is organized into the following four major sections:

- Faculty Renewal and Retention;
- Undergraduate and Graduate Teaching, Curriculum Revision and Faculty Workload;
- Resources, Funding and Facilities;
- Departmental Governance.

Each section highlights the Department's strengths, challenges and proposed actions.

FACULTY RENEWAL AND RETENTION

Overview

As the reviewers note, we have been successful in hiring several high quality scholars to fill retirement and replacement positions. Several of these excellent scholars happen to have been women which has moderated a perceived problem of gender imbalance within the Department. The reviewers noted that "a continuing challenge is the Department's ability to maintain its faculty complement in times and conditions of budgetary constraint." The three new faculty hired since the review continue to build our strength. With a diverse program that essentially falls into three streams - physical, human and SIS - the real challenge is to maintain appropriate balance to adequately support the overall integrity of the Geography program. Each of these streams has its own particular challenges. The recommendation of the reviewers that the Department conduct an internal needs assessment to examine all program needs for the curriculum in human, physical and methods streams is sound and would follow completion of the curriculum revision process.

Physical Geography

Strengths

- The physical geographers' areas of expertise blend well to adequately cover a coherent BSc program, while maintaining courses in physical geography for the Department's BA students too.
- A new hire in Hydrology subsequent to the review has filled the gap in that area left by the resignation of Dan Moore, who recently took up a prestigious position at UBC.

Challenges

- A major problem highlighted by the reviewers is the renewal and retention of physical geographers. This problem is exacerbated by the diversion of physical geography faculty to other programs (e.g. Earth Sciences, Biology, Environmental Science, and the SIS program within Geography itself), the paucity of university-funded teaching and research resources, and the demanding undergraduate teaching load in comparison to colleagues in related disciplines elsewhere in the university with whom physical geography faculty compete for research funds. All of this puts undue stress on physical geography faculty and places them at a "competitive disadvantage" in the research arena. Geography's participation in producing BSc graduates from SFU is only marginally recognized by the Faculty of Science and the Department's only access to funding is through the Faculty of Arts. The reviewers recommend both an increase in funding and resources for this program and a decrease in the undergraduate teaching load.

- Many physical geographers are expressing the fact that they feel over-extended. One initiative that could improve the working environment for physical geography faculty would be the hiring of a Lab Instructor in physical geography. This should be debated in the context of faculty hiring and of reviewing the department's three technical support positions.

Action Steps

- The two reports "The Workload Allocation Committee Report - Discussion Paper" and "Discussion Paper on Reorganizing Undergraduate Teaching of Physical Geography" (both of which were provided as part of the review materials) documented the importance of re-allocating the present work load in the Department and the importance of this re-allocation to the vitality and competitiveness of the physical geography program in particular. The report of the review committee appeared to be in full agreement with the main issues identified in these documents. These documents provide a blueprint for addressing these problems.

Human Geography

Strengths

- During the past few years there have been several high calibre faculty members appointed in the area of Human Geography.

- Two recent hirings (one at the Assistant and one at the Associate Professor level) have brought considerable support to the emerging major in Geography with an Environmental Specialty.
- A new appointment unanticipated at the time of the review will add strength to areas of political geography, geography of gender and international issues.

Challenges

- The challenge for human geographers is tied to broader pedagogical concerns identified in the review as "the need to identify clearly the Department's areas of strength." As noted, "emerging areas of specialization in environment, community development and critical theory are among important avenues for the future."

Action Steps

- Preliminary identification of areas of strength within human geography will form the basis for curriculum revision. This revision process has been recommenced. In addition to streamlining course offerings, it will also bring the curriculum into line with the expertise of current faculty and allow faculty to devote more energy to research and the graduate program.

SIS (Spatial Information Systems)

The reviewers do not make clear recommendations about strengthening the SIS program, leaving that decision to the Department. There can be little argument that a modern Geography Department must meet the demands of students in the growing area of technology if it is to remain credible and competitive; however, university-level support is crucial.

Strengths

- The Department has an excellent undergraduate teaching laboratory for SIS.
- Subsequent to the review, a new faculty member (Nadine Schuurman) has been hired to replace Tom Poiker.

Challenges

- In the last (1991) departmental review, there was a recommendation that an additional SIS faculty member be hired. While a replacement for Tom Poiker has just been recommended, there has been no growth in the SIS area despite increasing demand for the SIS certificate

program and its importance to the Co-op program. Moreover, the resignation of Dan Moore has left the Department with no faculty member available to teach Methods in Spatial Analysis II, a required course for the SIS Certificate.

- The reviewers noted that "given student demand for GIS/SIS courses, and the assumed need to avoid impediments to students' progress in programmes, the Department may wish to enhance its SIS/GIS offerings. . . . The Geography Department will need to make a case to the senior administration for directed funding both for faculty to instruct in the programme and for facilities to support this important direction." Currently the Department does not have an adequate faculty complement to mount all the necessary courses for the SIS Certificate. A minimum additional faculty member with expertise in spatial statistics is required to support the program.

- The reviewers also emphasize the need for technical and Lab Instructor positions to support an SIS program. Subsequent to the review, the permanent SIS lab technician left to take up a position in Co-op Education. His position is currently occupied by a temporary employee while the Department re-evaluates its needs in this area.

Action Steps

- CFI start-up funds associated with Nadine Schuurman's position have been applied for and would allow the development of well-equipped research facilities in GIS.

- The requirements for: (i) technical assistance in SIS including cartography and (ii) justification for a laboratory instructor position, will be discussed in depth at the forthcoming retreat at the end of April.

UNDERGRADUATE AND GRADUATE PROGRAMS, CURRICULUM REVISION AND WORKLOAD ALLOCATION

Strengths

- The reviewers note that the "quality of the undergraduate teaching programme is very good;" also that "undergraduate students in the physical geography side of the program appear to enjoy a well-structured program."

- Professional accreditation with the Association of Professional Engineers and Geoscientists of British Columbia is available to students graduating with a BSc in physical

geography; this in part responds to "the growing pressures for professional certification" noted in the review.

- In spite of the funding freeze on field trip fees, the Department has managed to maintain field trips within a number of courses both on the physical and human geography side.
- The SIS Certificate clearly provides job training opportunities and an applied approach in selected courses as recommended by the review. The Co-op program is seen as a definite strength in this area.

Challenges

- The major pedagogical issue raised by the reviewers was "the need to identify clearly the Department's areas of strength in order to inform the process of restructuring the curriculum for the future." This is especially critical in the upper division BA courses where "perhaps too many courses are listed."
- The level of commitment to the SIS program needs to be agreed upon at the Departmental, Faculty and University levels.
- The Department appreciates the reviewers' encouragement for curriculum revision. The reviewers raise many specific issues that need to be addressed in such a major revision, all of which are currently under debate. These include concern for streamlining offerings especially in the human geography courses; ensuring students can complete their programs in an efficient and timely fashion; ensuring that undergraduates experience both the breadth and depth that is the essence of the discipline; ensuring that wherever possible introductory and upper-level courses are taught by full-time faculty, not sessionals; and, including students in the planning process.
- Revision of the undergraduate curriculum reflects not only the desire of the Department to up-date course offerings to reflect changes in modern geography curricula and the evolving interests and expertise of current and new faculty members, but also to re-allocate teaching resources to create a more equitable balance between the undergraduate and the graduate program and between members of faculty in the Department. The reviewers call for a revision of teaching credit allocation to include graduate courses; adjusting teaching loads for physical geographers to bring them more in line with loads in other science Faculties at SFU; full disclosure of accumulated credits; and a 1-2 year roll-over of teaching credit

points. The reviewers also stated that "The failure to develop, or obtain funding for, a graduate programme with an adequate range of courses and proper course credits for faculty teaching them, is alarming." They note that teaching workload re-allocation requires immediate action.

- Some comments on the graduate program were interpreted to imply criticism of institutional support. For example comments such as "encourage and enable graduate students to travel to more distant field locations," "encourage attendance at meetings and allow students to present their findings at conferences" do not account for the support presently provided by the Department and from faculty research funds.
- The reviewers expressed "general concern about field work or field courses, and exchanges in other parts of Canada and foreign areas" which they attribute to lack of incentives and funding.
- The reviewers note that such resources as university site licenses for software are essential. This requires commitment and coordination at the university level which the Department is endeavouring to instigate, as exemplified by the recent acquisition of university-wide ArcInfo site licences by the Library.

Action Steps

- As an outcome of the last Departmental retreat in May 1998, a workload allocation review process was initiated. This evolved into a curriculum review process in which faculty in the three main streams within the Department (physical, human and SIS) worked independently to streamline their programs. The curriculum review will be reinvigorated taking into account the observations of the reviewers. In response to their recommendations the curriculum review will be a priority in the Department. Discussion on curriculum revision at the forthcoming retreat will help accelerate the process.
- A streamlining of the undergraduate physical geography curriculum is well under way. By varying the scheduling and frequency of offerings of courses, an undergraduate teaching load of 3 courses appears viable without loss of service to students and would enable faculty to complete their 4 course teaching load with graduate teaching and/or other teaching-related activities. This proposal will be brought to the Department for approval during the summer and scheduling changes will be phased in over the next two years.

- The importance of re-allocation of faculty workload responsibilities to support the graduate program is mentioned in several places in the review. The Department considers that this is a high priority both for this goal and for faculty recruitment and retention, overall morale and increased research productivity.

- As part of the curriculum review/workload allocation process, the Department is currently re-organizing its graduate offerings and with the Administration's support should be able to increase the number of core course offerings available to our future graduate students. Among changes being considered are: increasing the number of credit hours required for MA/MSc/PhDs; harmonizing upper-division undergraduate and graduate course numbering to facilitate joint courses (in some instances only); and pooling resources with other departments, especially in the Faculty of Arts, to mount larger graduate courses.

- Several members of the Department are interested in developing field courses (e.g. Hayter in UK and Japan). As suggested by the reviewers the ways in which other institutions finance such initiatives will be investigated. Some exchange programs do exist in Geography, notably those with the University of Cologne and the University of Dundee. Discussions are currently underway with the University of Salzburg to establish a graduate exchange program.

- Opportunities for a university-wide site licence for IDRISI software are currently being explored.

RESOURCES, FUNDING AND FACILITIES

There is one key theme that pervades the report - the issue of lack of resources. The reviewers' harsh concluding comment that "the last Review might just as well not have taken place" seems aimed specifically at this issue. However, a number of resource/funding-related issues included in the recommendations of the 1991 review were acted upon. These include the establishment of a Co-op Co-ordinator in Geography; the establishment of an SIS laboratory; and the establishment of an environmental program which included the hiring of a new faculty member with funding from the Academic Enhancement Fund. However, in the last review the team noted that the Department suffered from "what are probably the most severe space and resource constraints of any graduate level department in Canada today." The current reviewers also note, particularly in terms of resources for the undergraduate program, "we are unaware of any department in

the country with such impoverished facilities at this level." The reviewers provided many details on where resources are urgently needed.

Strengths

- The reviewers identify the well-equipped SIS laboratory that was established through the efforts of the previous Chair in 1995. Additional hardware for this laboratory has recently been acquired as a gift from the Alumni Association.
- The Department recognizes several strengths that the reviewers failed to note. These include:
 - the Departmental vehicles, including a new truck acquired in 1999, and a 15-passenger van (shared with Archaeology) acquired in 1998, to support research and teaching (field trip activity).
 - several improved budget items such as on-going capital funding for the SIS lab (computer leases and software licenses); an additional \$5000 to our base operating budget for the purchase of teaching materials (in response to loss of lab equipment fees) and an increase (\$5690) to our operating budget from the Academic Enhancement Fund in support of the new environmental program.
 - a dedicated university-owned aircraft to support Remote Sensing research and teaching.

Challenges

- Resources and funding are lacking. The Department supports many of the views of the reviewers on these issues but also recognizes that given government-imposed constraints on university funding, solutions to all these problems are not easy or even possible.
- The reviewers recommend instituting a procedure for regular updating and consistent maintenance of teaching equipment, materials and facilities; renovating and clearing out broken and outdated equipment from research labs; requesting a cycle of renovations for heavily used physical space; and, improving the seminar room.
- Some faculty members believe that workload allocation is the root cause of the problem surrounding lack of resources and the neglect of existing resources. They believe that excess allocation of workload to undergraduate teaching leaves little time to pursue alternative mechanisms of obtaining resources or to simply lobby the administration and make a compelling and well-documented case that our needs are not being met.

- The reviewers seem misinformed about the maintenance and updating of office equipment. Staff have not been given "hand-me-down" computers from elsewhere in the university, staff regularly update software and can comply with requests from senior administration; and staff do undergo training especially with respect to software use. There may have been an understandable confusion here between staff and graduate students.
- The Geography Graduate Association has provided the Department with a list of computing equipment and space they believe are required to adequately equip graduate students in Geography. The Department does not have the financial resources at this time to meet these needs, but the requests are under ongoing consideration.

Action Steps

- With re-allocated workloads, some faculty time could be directed towards research endeavours which in turn could enhance the Department's resources for graduate support as well as the provision of physical resources that could contribute to teaching as well as research needs.
- The Department will be making a case to the Administration in the next 3-Year Plan that the situation in Geography, where labs, lab equipment, field courses and resource-intensive research are an integral component of geographic education, especially in the physical and techniques area of the discipline (e.g. Physical Geography, GIS, Remote Sensing), calls for special and innovative budgetary considerations to bring Geography more in line with other lab-based related disciplines in the Faculty of Science (Earth Sciences) and Applied Sciences (REM). The Department would support the establishment of a committee within the Faculty of Arts to re-assess and advise on the funding formula used to determine the Faculty of Arts budget.
- A needs assessment will be conducted, particularly in terms of equipment and facilities, including:
 - resource needs particularly for the undergraduate teaching program;
 - a cycle of renovations, updating facilities for teaching, research and administration.

DEPARTMENTAL GOVERNANCE

Strengths

- Overall, the reviewers' remarks were positive concerning governance of the Department, including the revised Constitution.

Challenges

- Suggestions concerning more effective communication received mixed responses from the Department. While a few individuals feel that communication could be improved, most were satisfied that they were adequately informed in advance of business at Departmental Meetings and that strategic directions are adequately discussed.
- The workload review will hopefully result in a more equitable distribution of courses and a more open system of calculating teaching loads.
- The reviewers suggest the creation of an Associate Chair position or an Executive Committee. The Department recognizes that university policy would not allow for an Associate Chair in a department of this size, and feels that the creation of an Executive Committee might lead to an even more cumbersome committee structure.
- The Department feels that the balance between human and physical geographers in departmental governance is adequately covered by committee membership, particularly on the Undergraduate Studies Committee.
- The Departmental Constitution calls for three-year terms and overlap for Chairs of the Undergraduate Studies and Graduate Studies Committees, which addresses the issue of continuity in governance.
- The Department is taking steps to further improve the quality of academic life for its graduate students, including a one-day conference at which all incoming Master's students will be invited to present their research proposals to faculty and other students; and providing information on scholarships and fellowships to incoming students.
- The reviewers recommend a formal student advising program, particularly with regard to attracting international students as well as those from ethnic constituencies. The Department recognizes the role of the Registrar's Office in student/international student recruitment. Nevertheless there is a part here for the Department to play.

Action Steps

Suggestions to which the Department will give consideration include:

- Orientation for new faculty.

- Clarification of intellectual property policies for faculty and graduate students.

- Departmental publicity - newsletter, alumni program (to be taken on by a retired faculty member or non-researcher).

- Exploring outside funding possibilities.

- Examining marketing efforts, particularly in relation to student recruitment and the possible role of a lab instructor in this area.

SIMON FRASER UNIVERSITY

Department of Geography

Departmental Review

Report of the External Review Committee

Bryan H. Massam: Chair, York University
Dianne Draper: University of Calgary
Ken Hewitt: Wilfrid Laurier University
Tina Loo: Department of History,
Simon Fraser University

January 2000



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I. PREFACE

The Department of Geography at Simon Fraser University (SFU) is one of the largest departments in Canada (Appendix 1). With approximately 20 FTE CFL positions (Appendix 2) large numbers of undergraduates and graduates are taught and valuable contributions are made to several centres and related academic units. In recent years a number of successful initiatives have been launched at SFU with significant contributions from members of the Department of Geography; for example, REM, CEDC, Earth Sciences Programme, SIS certificate, and Co-Op programme. The recent hirings are of high quality and the Department is well-positioned to move to the next stage in its development. The Department needs to set in place its emerging vision for the coming decade and to prepare a detailed 3-year plan (2000-2003) with a less rigid plan for the following three years (2004-2006).

There will be a number of retirements in the next six years (Appendix 2) and this provides a significant opportunity to convert visions into priority lists for new hirings. The 3-year plan of the Faculty of Arts provided guidelines on the requirements for a department to secure new hirings.

While we gained a positive sense of collegiality for much of the Department, there are some issues of collective decision making, governance and equity that need urgent attention. Collective decision-making, regarding a number of critical issues, is an area of key importance. Included among the critical issues are: allocation of teaching credits among undergraduate and graduate programmes, and re-organization of the undergraduate programme especially in the upper years of the BA programme. Initiatives regarding GIS and SIS also will require some hard choices to be made as investment of scarce resources (new positions, equipment and space, for example) in a large-scale GIS/SIS programme can draw from other areas of the discipline much-needed resources.

The current operating grant to the Department and capital grants of the size in recent years are inadequate for existing programs and will be insufficient to support a large-scale GIS/SIS enterprise and an expanded SIS programme. The latter currently requires significant contributions from sessional appointments. The Department is severely 'resource-challenged' to use the phrase reiterated by many.

The Department of Geography at SFU enjoys a well-respected position among departments of geography in Canada. This reputation can be maintained and improved in Canada and beyond with the hiring of about 4 to 5 academics, of the calibre of recent appointments, over the next 4 to 5 years. High quality faculty are necessary to sustain a strong academic department. They must be supported by appropriate allocation of resources from the University as well as a milieu where scholarly activities are valued and nurtured. In the near future strategic choices are needed for the Department so that the next 3-year plan sets the scene for a longer term planning exercise. Protracted debate on the naming of streams of courses in human geography, for example, may be a healthy sign of intellectual engagement of colleagues, but planning requires some degree of

closure of debate and the reaching of a consensus. Maintaining and enhancing principles of equity, openness/transparency and accountability also are essential for the development of practices of governance in the process of reaching a consensus on difficult choices on a number of issues.

Care is needed to ensure that core sustainable geography programmes leading to BA or BSc degrees are maintained especially as the SIS/GIS initiative is pursued and the variety of geography-related centres and programmes are supported.

II. INTRODUCTION

In preparation for the site visit by the External Review Committee on October 27-30, 1999, we were provided with the following information:

- Self-Study material from the Department of Geography
- Senate Guidelines for External Review of Academic Units
- SFU Calendar
- Graduate Studies Data
- President's Agenda
- Faculty of Arts 3 Year Plan
- University Fact Book

We also consulted the Annual Directory of the Canadian Association of Geographers for each of the last five years. This Directory lists publications of faculty members and provides names of faculty members and basic data on enrollments. During the site visit a number of faculty members provided us with memos and data regarding the Department.

The schedule for the site visit is included as Appendix 3. The Review Committee had many meetings and limited time to meet alone during the site visit.

At the outset of this report we would like to acknowledge the support that has been provided to the committee by many at Simon Fraser University. We appreciate the time and trouble that was devoted to preparing material and for the opportunities to have face-to-face meetings during the site visit. We commend SFU for undertaking external reviews of academic units and we thank the Department of Geography for making available to us their views, opinions and suggestions to complement the raw data on FTEs, enrollments, external grants/contracts, budgets etc. that were provided to us.

The final section of the report includes a set of conclusions and recommendations. We respectfully submit this report for consideration by the Department of Geography, the Dean of

Arts, the VP Academic, and the VP Research and Graduate Studies.

We are grateful for the opportunity to participate in this review and we thank SFU for inviting us.

In the preparation of this report we have tried to keep in mind the Senate Guidelines for External Reviews of Academic Units (March 4, 1996) as well as broad contextual documents, for example, Challenge 2001, The President's Strategic Plan, and the Faculty of Arts 3 Year Plan (June 1998).

The overview provided by the Chair of the Department, together with the report of the recent Department Retreat (1998) provide clear statements that some strategic choices for the Department are called for at this time. Many we spoke to echoed this view. Principally the choices focus on curriculum matters: how many courses should be offered, how will they be connected into streams and sequences, and which areas of the discipline will be focal points for attention, for example. Choices on these questions must take into account the availability of faculty members, the total number of FTE CFLs, their areas of expertise, definitions of a normal teaching load, the availability of support staff, equipment and space. The search for an appropriate complementarity among the undergraduate and graduate programmes is a challenge that requires a resolution as soon as possible, especially with respect to the allocation of teaching resources to graduate courses and supervision within the 4 course norm at SFU.

Making the plan for the coming years clear and effective for the needs and requirements of students is imperative. The Department should further articulate coherent, imaginative programmes, job-training opportunities, certification and professional registration and, of course, intellectual/personal stimulation and rewards from students' investments in higher education. Furthermore, given that the basic source of funding for the university is from the public purse, it is incumbent on the Department to have an active programme to highlight to the public the work that is undertaken in the Department and the benefits to society of supporting the discipline of geography. An attractive alumni programme can be useful in this regard, as can a newsletter distributed widely and describing recent activities of the Department. Perhaps a colleague who is not an active researcher or a recently retired colleague could assume the editorship of such a newsletter. A fund-raising campaign of the Development Office at SFU working closely with the priorities of the Department of geography is an initiative that needs to be considered. The recent funding provided by the alumni for computing facilities in the GIS lab is a clear example of a successful venture to secure extra resources outside the regular operating and capital grants to the Department.

Following this Introduction we offer an Overview section of the Department and in this we focus on selected topics:

1. faculty renewal
2. governance
3. pedagogical concerns

4. resources, funding and facilities
5. work load and teaching loads

The following Major Issues section focuses on three issues:

1. undergraduate and graduate programmes
2. GIS/SIS
3. laboratories, field work, and resources

The final section provides Conclusions and Recommendations.

III. OVERVIEW

1. Faculty Renewal

Embedded as it is within the issues of curriculum review and redesign, and decisions regarding the Department's strategic direction, the issue of faculty renewal provides both challenges and opportunities. A continuing challenge is the Department's ability to maintain its faculty complement in times and conditions of budgetary constraint. This challenge partially may reflect the effects of spin-off programmes initiated or staffed by geographers. As noted below, these programmes may represent a diffusion of effort into appropriate specializations, but such programmes still depend on the Geography department for much of their faculty resources.

Additional challenges involve addressing the issue of gender (im)balance and retaining geographers (perhaps physical geographers in particular, but also 'good' instructors in general) who feel their teaching loads and lack of resources place them at a 'competitive disadvantage' compared to their colleagues in the Faculty of Science or elsewhere. The competition to retain faculty is a serious issue that is likely to become more critical in the future given forthcoming demographic shifts.

To date, in spite of these challenges, the Department has been able to appoint several high-quality scholars to tenure-track positions to replace recent retirements and resignations. Although some of these new faculty members noted that they would have benefited from an orientation procedure, they have contributed in important ways to Departmental deliberations about future directions. It will be important to support their initiatives as they work collaboratively to enhance the Department's function and attractiveness.

A challenge with forthcoming retirements is to ensure they are returned to the Department. The importance of a Departmental vision and strategic plan by which future expertise needs and demands are targeted collaboratively, is evident. Clearly, decisions regarding persons to be appointed should be the Department's alone.

Given the existence of several successful initiatives (identified in the Preface) in which geographers play a key role, it will be important that the Department consider how to maintain the benefits that come to Geography from these programmes. While they 'compete' with the Geography Department for students, there is a sense in which these programmes also provide 'client groups' for Geography. As part of determining its future direction, the Department might consider a number of questions: Are these spin-off programmes of continuing value to the Department? Could desired results be obtained by 'repatriating' some of the courses within the Department? Would it be more appropriate for other faculties to support these programmes? Should any of these programmes receive increased support? At minimum, communication and liaison with the persons offering these programmes must be maintained and perhaps improved. The Department also might consider the values of joint appointments (between industry and academia, for instance, as well as between departments or faculties), adjunct positions or other solutions to the recruitment and curriculum issues implied here.

With regard to the SIS/GIS portion of the geography programme, there is recognition of the necessary role of these tools in the undergraduate curriculum, but concern about whether a technical or applied approach would be most appropriate was expressed. Given that students can obtain technical training in GIS software packages from other institutions, it may be appropriate to send students elsewhere for these dimensions of their training. Such action might help to reduce some costs of providing cutting-edge hardware/software and would permit faculty members opportunity to focus on the applications of GIS. However, given student demand for GIS/SIS courses, and the assumed need to avoid impediments to student progress in programmes, the Department may wish to enhance its SIS/GIS offerings. If the decision is to support an enhanced ('full-blown') GIS programme, with or without cooperation among other departments or faculties, the Geography Department will need to make a case to the senior administration for directed funding both for faculty to instruct in the programme and for facilities to support this important direction. In addition, the need to establish a basis for ongoing funding to ensure that 'state of the art' computers, software and ancillary equipment are available consistently to instruct students in the most current methods and with the most up-to-date technology (such as laser surveying and differential GPS instruments) is critical. The importance of university-wide site licences for necessary software also must be communicated in any dealings with university administrators. Furthermore, the need for technical support and lab instructor positions to help mount the labs and field trips that should be associated with GIS and other courses, needs to be stressed in dealings with the senior administration.

Given this list of needs to be brought to the attention of the senior administration, it is suggested that the Department conduct an internal needs assessment process. All programme needs for the curriculum in human, physical and methods streams could be examined, areas of focus clarified, priorities established, and so on. It would be helpful if the assessment were accompanied by a timeline (over the next 6 years) that specified the order in which positions would be filled, including, perhaps, those already identified through Departmental discussions, namely: quantitative/spatial statistics; Asia; urban-transportation; geomorphology; and social geography/gender/political. Equally important is an assessment of the costs of *not* getting the

required faculty positions, space and equipment, and funding support.

2. Governance

Governance is concerned, *inter alia*, with the principles, practices, procedures and perceptions of the ways the Department makes choices, deals with conflicting positions, promotes debate on academic matters and provides opportunities for grievances to be dealt with fairly and expeditiously. The Constitution of the Department of Geography (November 26, 1998) is a clearly written document that reflects very positively on the Department on matters pertaining to governance.

Complimentary comments came from all quarters—faculty, staff and graduate students—about governance in the department. For example: "there exists a critical element of trust", "a very good Department to work in", "uncommonly democratic", "dissent is handled with civility", "collegiality is OK," and "a friendly co-operative department to work in". There were, however, dissenting voices, and some highly critical ones expressed concern about the need for better communication.

More effective communication of proposals for initiatives regarding resource allocations, teaching allocations, new positions, curriculum revisions etc., prior to deliberation and action by the Departmental Meeting, will help build a milieu within which hard choices can be made and responsibility is shared by all voting members of the Department. The Department's Standing Committees and the Departmental Meeting should be fully apprised of proposed actions that will affect the academic life of the Department. While the Chair of the Department has primary responsibility to keep all informed, it is incumbent on all to assist the Chair in this endeavour. The Dean and VPs can play critical roles in this regard too.

We note the absence of an Executive Committee in the Department. Perhaps such a committee comprising the Chair and Chairs of standing Committees a, b, c in the Constitution could be established to improve communication and co-ordination of initiatives prior to deliberation by the Departmental Meeting. We suggest that this be debated as part of the Periodic Review of the Constitution (7.0).

Given the particular needs and concerns of both human geography and physical geography we feel it is worth considering the appointment of an Associate Chair in Human Geography when the Chair is a Physical Geographer and *vice versa*. Such an appointment probably is redundant if an Executive Committee is established. Recognizing that the Department has only about 23 faculty members and in any year some are absent on leave etc. a too-cumbersome committee structure is to be avoided.

One particular item was drawn to our attention concerning intellectual property (IP). Matters of IP are not explicitly part of the Department's Constitution though we understand that SFU does

have specific policies and guidelines. We encourage the Chair to ensure that all (new) faculty and all graduate students are apprised of the practices and procedures at SFU for dealing with matters regarding IP, especially matters concerning publication rights.

3. Pedagogical Concerns

Key pedagogical concerns identified during the site visit and through the Department's self-study material relate to the academic strengths faculty members bring to the Department and the curriculum faculty members offer to meet the academic program needs of students. Interrelated concerns—of resources, funding, facilities, and faculty work load and teaching loads—were identified and, along with the issue of faculty renewal, considered elsewhere in this report.

One major pedagogical concern is the need to identify clearly the Department's areas of strength in order to inform the process of restructuring the curriculum for the future (which itself is at least partially a response to changing educational market demands). Traditional areas of strength in the Department have included geomorphology and social-cultural geography but emerging areas of specialization in environment, community development, and critical theory are among important avenues for the future. Associated with the need to identify current and potential areas of strength are issues of identifying where (in what fields) new appointments should be made in order to meet future program requirements, and how to ensure those appointments are returned to the Department. Other curriculum challenges that the Department already is aware of and is attempting to address include: questions relating to how and where spatial analysis, statistics and other research methods courses fit into the Department's program; concerns about integration of human and physical streams within the discipline, including the role of field work/research—or even field courses—in both streams; the value of including required physical *and* human geography courses in the core program for both Arts and Science students; concerns about the ability of the Department to support fully the Co-op program over 3 semesters; and the growing pressures for professional certification and accreditation. The Departmental Undergraduate Studies Committee has been addressing some of these challenges and should be commended for its efforts to help focus the Department's curriculum revision process.

A major issue identified is the need for effective organization of the undergraduate program, particularly to ensure that introductory courses are taught by full-time faculty and that key upper level courses in the BA program are offered frequently enough (and mostly by 'real' professors, not sessional instructors) to enable students to complete degree requirements expeditiously. While undergraduate students in the physical geography side of the program appear to enjoy a well-structured program, undergraduates in the human geography program enjoy a diverse but less well focused program. Both streams should continue to pursue clearly defined and sustainable programmes if faculty resources are to be deployed efficiently. Physical geographers in the Department appear to have achieved coherence in their portion of the undergraduate program; the same is not yet true of the human geographers. Although they have made some progress toward both streaming and streamlining their courses, human geographers

recognize that faculty changes over the past decade require a new rationale for course offerings that will both attract students and permit faculty to have greater involvement in the upper level undergraduate program as well as within the graduate program. As part of its continuing deliberations, the Department needs to determine how undergraduates in both BSc and BA programmes might best experience both the breadth and depth of the discipline.

Clearly, choices about how many courses will be offered and how such courses will be connected into the streams and sequences within the *full* range of Departmental offerings depend on the availability of faculty members. This point reinforces the need for faculty members to determine their collective vision for the future of the Department so that the desired expertise of new appointments can be identified and confirmed. This point also suggests that student needs and requirements must be clarified prior to and during curriculum review and redesign. The need for a formal undergraduate student-advising program also is evident, particularly with regard to attracting international students as well as those from a number of local ethnic constituencies.

There is a need to address challenges associated with increased class sizes as well as regular updating and consistent maintenance of teaching equipment, materials and facilities. Also, physical (space) and equipment constraints imposed by machine-dependent and laboratory-based courses must be resolved. The previously noted problem of university 'neglect' that seems to be at the heart of these issues must be rectified, particularly in light of a possible determination by the Department that pursuit of an expanded GIS/SIS endeavour is warranted. The same is true of other academic initiatives linked to the Department; while current initiatives may represent competition with Geography for students and resources, appropriate levels of support and funding must be allocated to develop, enhance and promote the strengths of the Department for the mutual benefit of students, faculty, the university and the larger community. In part, attaining appropriate levels of support and funding, both internally within SFU and externally, may rest on an improved understanding of the integrative and interdisciplinary nature of the discipline of Geography. The Department might wish to examine its outreach (marketing) efforts and to identify ways to energize and cultivate the existing demand for Geography.

In addition, if a renewed "identity" for Geography at Simon Fraser University is to be achieved (given the competitive internal and regional contexts that exist, including new programs within SFU as well as the attractions of departments of Geography at UBC, and several four-year colleges), careful attention must be given to resolving curriculum matters and program organizational issues. Departmental collaboration toward resolution of these and other issues will be vital. Among the options the Department might consider is the value of an "applied" (vs. theoretical) approach to selected courses and programs. Attention also needs to be paid to the service functions of Geography Department courses.

4. Resources, Funding and Facilities

Resources is an area about which we have some serious concerns, particularly in matters that

adversely impact on the core functions of the geography programme. The problems arise especially in teaching and learning environments for undergraduates and graduate students. These problems, that put unnecessary strain on staff and faculty, involve physical spaces and furnishings badly in need of renovations, inadequate teaching resources, and the need to update basic equipment and facilities for staff. These problems seem to be less a failure of the Department of Geography, and more of an indication of the lack of University support and adequate policies for:

- a reasonable system for renewal and updating of basic teaching resources and departmental facilities,
- a cycle of renovations for heavily used physical space.

From what we saw, and concerns expressed to us, the root cause is chronic under-funding or lack of funding, at least since the last review.

Resources for the undergraduate programme: In some major areas, undergraduates are being taught with antiquated field and lab equipment, outdated and badly worn map sets, etc. Equipment and supplies are generally insufficient in quantity for the numbers enrolled. The kinds of methods and equipment that have been standard in many schools and agencies for years are unavailable. Either students are not being prepared at all in newly emerging techniques, and for employment areas they are likely to enter, or they depend upon contacts and energy of individual faculty to keep up. We are unaware of any Department in the country with such impoverished facilities at this level.

The graduate programme: As far as we could tell, beyond physical space, provision of facilities and equipment for graduate students depends solely upon faculty research funds. We were not made aware of any adequate arrangements or University incentives:

- to provide facilities and equipment for a core graduate course,
- to encourage and enable graduate students to travel to more distant field locations,
- to have even one field course available on a regular basis in other parts of Canada, let alone overseas,
- to encourage attendance at meetings outside the Lower Mainland, or allow students close to graduation to present their findings at conferences in their speciality areas.

SFU graduate students are unfairly disadvantaged by each of these, compared to other geography departments with large graduate programmes. Again, we had no sense this was because faculty lack interest, and graduate students made plain their dismay, but neither group seems optimistic about support and incentives within the University.

Staff and department administration: Maintenance and updating of office equipment and facilities for staff seem to be on a purely *ad hoc* basis. Staff members have to get along with 'hand me down' computers from elsewhere in the university. There is no provision for updating software

and keeping pace with ever-changing demands upon an efficiently run Department. We were made aware of cases where requests from senior administration or other units in the University could not be met because Geography did not have the necessary equipment, software and training.

Physical space and facilities: Several of the laboratories, seminar and research spaces, and rooms set aside for student activities are simply a disgrace. They are cluttered by dilapidated furnishings, seemingly abandoned and broken equipment, dusty files or samples. As far as we could tell, most had not been renovated in decades, or since they were built. The principal seminar room (or 'bunker') where guest speakers come, and Departmental meetings are held, could be an attractive space. We spent most of our time in it, and found that it certainly focuses the mind. However, it is a dusty, tired and unhealthy room, surrounded by neglected books and journals of 20 to 40 years ago—'remainders' gladly abandoned, one suspects, by retired faculty. If of minor concern in itself, it serves to reinforce the Review Committee's sense of a wider problem of neglect. Moreover, this is in singular contrast to the many bright, generously appointed spaces and upbeat appearance we saw elsewhere in the University, notably in the administration offices we visited. It suggests a lack of concern for what happens in the most heavily used learning environment—where the 'bread and butter' of the University is earned!

For faculty, these conditions must create problems of attracting students, and giving them a satisfying, higher learning experience in courses. There may well be issues of health for everyone spending long periods in some of these rooms.

In sum, there seems to be a lack of concern and support for a reasonable system providing and updating basic teaching equipment and facilities. Apparently, there is no provision for cycle of necessary renovations and renewals of heavily used physical space; this does seem symptomatic of a general neglect of the atmosphere and core spaces in which 'ordinary' students and faculty must function.

We detected a legacy of frustration, and a sense of years of uphill battles to cope with under-funding and administrative neglect. (In some areas of equipment and cross-disciplinary activity, there has been too much dependence upon individual enterprise, if not luck, at the cost of a broadly agreed upon and balanced development).

We suggest that the Department of Geography clearly establish, or reiterate for the senior administration, what the Geography programme requirements are in terms of facilities and equipment needs. The spectrum of faculty and courses at SFU involve and require facilities for:

- physical and social science components,
- a strong empirical, experimental and field work tradition in most areas,
- a range of newly emerging, high-profile problem fields and techniques, from the environment to urban systems. These are involved in courses taught, students' preparation for employment, graduate student and faculty research, and

- exposing students to methods, techniques and material-data sets, imageries, field experiences etc. that are relevant to the rapid changing world beyond our borders, notably the Pacific Rim.

Each of these areas makes specific demands upon teaching spaces, materials and equipment. The latter need to be provided, and renewed or updated on a regular basis. In most cases, that seems not to have happened in Geography at SFU for a decade or more.

5. Work Load and Teaching Loads

The three primary responsibilities (research, teaching and service) which comprise the work load of tenure-stream faculty are elaborated in SFU's Policies and Procedures document A30.30 (September 1, 1999). With respect to teaching, there are two areas that deserve attention at this time: firstly, the allocation of credit to the graduate programme and secondly, the adjustment to teaching loads for physical geographers to bring them more into line with teaching loads of scientists in other faculties at SFU. Perhaps both can be addressed with a revised point allocation system. The norm of 4 undergraduate courses per year is not out of step with patterns in geography departments across Canada. Typically, however, credit is assigned for contributions to the graduate programme (for teaching graduate courses and supervision).

Many faculty members expressed the view that the allocation of teaching responsibilities among undergraduate and graduate courses within the 4-course norm of SFU needs to be revised in the department. The graduate students echoed the view that the allocation of teaching credit to graduate courses and supervision would enhance the graduate programme. There was modest enthusiasm for the notion of graduate courses becoming add-ons to existing undergraduate courses. This arrangement should be used as the exception. The positive consequences of such an allocation could be a reduction in completion time of graduate degrees, an increase to research productivity and external funding, and increased funds to support and attract high quality graduate students. We concur with those who expressed the view that completion times are generally too long. Also, we agree with the views expressed at the Retreat in May 1998, and repeated by some human geographers, that research productivity on the human side of the Department as defined by publications in top-notch international, refereed journals is not occurring as often as some on the human side would like. It should be noted, however, that some faculty members have publication records on a par with the best in Canada and elsewhere. The negative side of re-allocation of teaching credit to the graduate programme relates to the withdrawal of resources from the current broad and wide range of courses listed in the calendar.

The undergraduate curriculum in physical geography could probably be offered within a 3-course undergraduate load for each physical geographer. The balance of the 4-course norm could be accounted for by graduate course teaching/supervision and laboratory and field-based research supported by external funding and some Departmental resources. However, such an arrangement would impinge on non-physical geography course offerings, especially SIS/GIS related courses.

We note that in October, 1992, a point system for calculating work loads was developed by the Department and in a memo from the Chair on January 12, 1993, the system was elaborated. We also note that this system was due to be reviewed in October, 1995. Opinions varied on the merits of a point system and some were unaware of exactly how it functions or whether it was still being used. This situation should be clarified without delay. We favour the formal allocation of credit for teaching graduate courses with a minimum number of students. Some credit for supervision of Masters students for up to 2 years and up to 3 years for a PhD student is perhaps appropriate with a total credit not to exceed a fixed amount. The mentoring system of graduate supervision can work well if time is allocated and if credit is assigned as part of the normal work load. But, such a system is demanding in terms of faculty time. The full disclosure and distribution of point allocations of all faculty members to all members of the Department is a practice used in some departments across the country. We commend this open approach. Points should not be accumulated over long periods of time as this can complicate the year-to-year planning in the Department. A 1 or 2 year roll over of points is not unreasonable.

Faculty members participate actively in administration and service in the Department and beyond, and engagement with the discipline through research programmes is well-established. An emphasis on BC-related topics from a policy perspective adds to the distinctive character of the Department's identity.

IV. MAJOR ISSUES

1. Undergraduate and Graduate Programmes

We have noted that curriculum issues are critical ones for the Department and that aspects of both the graduate and undergraduate programmes require attention. Strategic choices must be made if the Department is to achieve a future where course offerings are aligned with relevant streams and sequences, reflect carefully selected areas for specialization within the discipline, take student needs into account, and where appropriate levels of effort are expended in teaching within all programs. In support of these strategic choices, decisions must be made regarding availability of support staff, teaching assistants and faculty as well as space and equipment, and the allocation of teaching loads. Faculty renewal is part of the interrelated complex of curriculum issues, all of which require fairly rapid resolution.

2. GIS/SIS

Analysis and cartographic representation of quantitative and qualitative data is an important part of geographical work. A wide variety of techniques and methods, including formal GIS/SIS, are available and a first-rate undergraduate curriculum should include instruction in analytical and descriptive applications of GIS/SIS. Similarly, at the graduate level, the opportunity to learn and use GIS/SIS should be available to students. The debate continues at SFU, as elsewhere, as to whether GIS/SIS should be taught within the context of specific substantive courses or as stand-

alone methods and techniques courses. Within the context of a university-based curriculum we feel it is important that highly qualified instructors teach the courses on a continuing basis, rather than relying on too many sessional appointments, albeit ones with fine technical skills to manipulate data. The contents of the courses should be substantially more analytical than a techniques-based approach *per se*. There is a place for such a course in the curriculum, but it is very important that students have exposure to debates on data types, forms of geographical questions to be answered by GIS/SIS and some understanding of the philosophical questions on GIS/SIS. Currently there is a rich debate on "GIS as science" and the use of GIS and RS to tackle multi-criteria decision making problems and policy questions through linkages among GIS and computer-based Decision Support Systems. In this regard IDRISI is highly recommended. At both the undergraduate and graduate level we feel some of this work should be included in the curriculum, as well as a course on qualitative methods in geography.

A fully-equipped laboratory with high-quality hardware, a variety of GIS/SIS and site licenses, as well as peripheral devices that are readily accessible (printers and scanners, for example) and qualified technical assistance, requires a major capital expenditure and significant continuing operating grants with periodic capital investments to update equipment and software. Currently the Department's budget is stretched to the limit to support the existing laboratory.

Students with skills in GIS/SIS, especially with analytical expertise to complement technical competence, are in a strong position in the current job market.

The laboratory that was established in 1995 is well-equipped and the SIS Certificate is a good initiative that deserves to be sustained within the Department of Geography. Very useful contacts have been established with a number of agencies to share data and technical assistance. This is to be encouraged, as is a link to the Canadian Institute of Geomatics. Considerable enthusiasm was expressed for the SIS Certificate especially when combined with the Co-op programme. However, there are some issues that deserve to be addressed, namely: (1) the extensive use of sessional appointments, (2) the lack of courses in the summer session to allow students a reasonable choice of options to complete the SIS Certificate and Co-op programme in 4 years, and (3) matters of securing site licenses to ensure compliance with regulations on intellectual property.

With respect to GIS it is critical that students obtain exposure to raster-based GIS, particularly for performing spatial analysis and modelling. There is a close linkage in this regard to remote sensing data and analysis. This can only be achieved with ESRI products to some extent. There appears to be a strong reliance on ESRI products in the laboratory. ArcInfo has a GRID module that handles raster data and performs limited types of analysis. Also, there is a module (Spatial Analyst) which is based on a raster model and it can be used for performing analytical functions suited to the raster model. Another module (3-D analyst) also supports the raster model as does Image Analyst. All are modules of ArcView. ESRI products tend to rely on vector based models.

IDRISI is an excellent teaching and research GIS that handles both raster and vector models and performs certain types of image processing as well. It is a cost-effective product with growing importance in tackling policy questions using multi-criteria analysis and decision support systems.

MapFactory is used in some departments for the introductory course in GIS to demonstrate the raster-based approach.

MapInfo is a vector-based GIS. It is very popular for dealing with census and municipal data as well as providing relatively good map output. Its statistical analysis is on the weak side. It is one of the industry's leading products and is a competitor to ArcView.

MapFactory and MapInfo are two products that are quite different functionally.

The selection of an appropriate mix of products relies to a large extent on the professional knowledge and expertise of faculty who specialise in this area, and keep abreast of the rapidly changing state of the art. The new appointment to replace T. Poiker will bear a heavy responsibility to guide the Department in making decisions regarding GIS products to complement those currently used. Overall, we believe it is important that students learn about raster- and vector-based approaches as well as the broader questions of data and analysis mentioned earlier.

Many disciplines and centres/units at SFU have an interest in access to GIS/SIS facilities, and the Department has to ensure that first and foremost its own students are well served. A GIS facility to serve the larger community at SFU can only be housed in the Department of Geography if capital and operating grants are secured beyond those currently allocated to the Department. The STARS initiative seeks to find such funding, and we encourage this project be supported if guarantees are secured to the satisfaction of the Department that a shortfall in the funding search will not require funds to be taken from the Department's allocations, and so reduce the support for the ongoing activities. The first call on budgets is to sustain ongoing activities.

If the Department wishes to raise the profile of the SIS Certificate, then support for assigning a high priority to making a second appointment after the T. Poiker replacement will be required from the Department as a whole. Whether this appointment is a GIS person *per se*, or a qualified academic who uses GIS in her/his teaching and research, is a decision to be taken by the Department after deliberations about needs across the discipline, recognizing the forthcoming set of retirements, the need to sustain viable BA and BSc degree programmes and the SIS Certificate, as well as to support a high-quality graduate programme.

3. Laboratories and Field Work Resources

On the one hand, laboratories and places for equipment storage seemed fairly adequate in terms

of numbers and square footage. It is clear that many of the faculty devote a considerable amount of time to field work, and are conscious of the value of preparing undergraduate and graduate students in field and laboratory methods. We were made aware of the considerable scope of faculty research projects and some success, over the years, in obtaining relevant research equipment. The physical geography and remote sensing laboratories are heavily used, and reflect a range of important research initiatives. The new space for the GIS/SIS laboratory and set of PCs is attractive, but unduly congested.

On the other hand, there is an alarming level of clutter and neglect in most labs. There has been a serious failure, over the years, to renovate these areas and adequately provision to store or clear out broken and outdated equipment or the remnants of old research projects.

There was a general sense of inadequate base funding, of over-worked faculty. People seemed too busy with the next demand on their time to bother about the general state of the laboratories. Yet, students must get a questionable sense of what modern lab settings and practices should be like from their experience with the facilities in SFU's Geography Department.

Returning to the two well-appointed, new GIS laboratories and PCs: this is a much-needed facility, and will surely have benefits in many areas of study and research, as discussed elsewhere in the report. Yet, it cannot substitute for the needs in other areas, notably field work, and other types of physical and human laboratory investigations. Without due attention to them, as we argue elsewhere, the SIS/GIS initiative may become a 'money pit', undermining rather than supporting other key areas of training and research.

We have already emphasized our general concern about field work or field courses, and exchanges in other parts of Canada and foreign areas. The lack of incentives and funding here has adverse impacts upon training, the intellectual environment in the Department, and research motivation. We cannot accept the suggestion of some, that this is mainly due to the relative poverty of SFU students themselves. The apparent failure to explore and find continuing support in these areas is unfortunate. We are conscious of a very different situation in other places where combinations of internal funds, donations, incentives for faculty and student initiatives, maintain such programmes.

V. CONCLUSIONS AND RECOMMENDATIONS

Overall the Department compares favourably with departments of similar size in Canadian universities. To join the ranks of the very best departments in Canada will require concerted efforts to develop collaborative, long-term research programmes with high levels of external funding, that engage faculty members, graduate students, post-doctoral fellows and academic visitors. A steady stream of high quality books and articles should result, and recognition via awards, scholarships, fellowships and the like should follow. It is noted that in 1999 Professor Hayter was given an award by the CAG. This brings credit to him and the Department.

Investment in resources for laboratories and equipment is required, and the reorganization of the undergraduate curriculum and teaching programme to focus on fewer courses in a structured BA programme. This should allow a re-allocation of work loads to permit high-quality graduate courses to be taught for teaching credit. A couple of core courses in the graduate programme would be appreciated by the graduate students and strengthen the programme. Completion times for graduate degrees are long and should be reduced. The mentoring system of supervision is costly: is it the most effective use of scarce faculty time and energy?

Appointments to the tenure stream in the next few years can bring renewed energy and ideas to the Department. Care will be needed to nurture the environment for the new junior faculty members, to encourage and reward them for high quality teaching and research. It would be a missed opportunity to divert their energies into protracted debates on curriculum and administrative matters. These affairs can take inordinate amounts of time and be debilitating to creative and innovative teaching and research.

The quality of the undergraduate teaching programme is very good. A wide variety of degree programmes is available as well as a large set of courses. Perhaps too many courses are listed in the calendar and expectations of students are raised too high regarding the availability of the courses. Changes to the curriculum are called for, especially in the upper years of the BA programme, and this should use faculty resources more effectively overall. Scheduling of courses needs adjustment to ensure that a reasonable set of options is available to allow students to graduate in four years. The use of sessional instructors, especially in the SIS Certificate Programme, has to be monitored closely.

With the major focus of attention on the teaching of undergraduates, and without formal allocation of teaching/supervision of graduate students as part of the work load, the research potential of faculty is not fully realized. While a number of external grants and contracts are held by faculty members, and a very high proportion of physical geographers hold NSERC awards, it is noted that the levels of the NSERC awards are generally low. The overall level of research output as measured by the number of publications, and especially those papers in high quality, internationally-recognized refereed journals is fairly good and varies from excellent to satisfactory. A few faculty members have excellent publication records of books.

We would emphasize the need to address the following issues in future plans and budgetary arrangements:

1. *Faculty renewal*: A whole series of developments make this a key area of urgent concern. There has been a spate of retirements over the past several years, a remarkable commitment of senior geography faculty to administrative duties elsewhere in the university, a high level of cross appointments or faculty commitments in other programmes, and individual career choices. These have resulted in:
 - putting undue and, we feel, poorly planned and recognized stresses upon remaining faculty, especially those committed to teaching, research and publishing in the core areas of the

Geography programme,

- duties and outreach which benefit the university community but which have not been adequately constrained or balanced in compensation, lines and other commitments to the Department.

2. *Departmental teaching and learning environment:* Chronic problems of under-funding and lack of other supports were identified in relation to the core programme in Geography, for staff equipment, and for activities and courses in the graduate programme. Moreover, existing equipment must be updated and new initiatives pursued, both of which will require university support.
3. *Field work:* In spite of the great demands in time and energy required, we highlight the importance of field work in the surrounding region and in other parts of the world. Unfortunately, field work at SFU is not adequately appreciated or provided with funds, equipment and incentives compared to many other universities.
4. *The graduate programme:* The failure to develop, or obtain funding for, a graduate programme with an adequate range of courses and proper course credits for faculty teaching them, is alarming. Alternatively, if the 'mentoring system' is to remain central, then faculty should receive credit and course release time in accordance with the number of students taught. In the same area, although no problems were voiced at present, there ought to be a clear protocol and system of accountability, to ensure all faculty will give the requisite time and attention to their students.
5. *Overextended faculty:* The above problems lie behind a widespread feeling that faculty are being asked to do too much, or too many things, for insufficient recognition or credit, especially junior and middle level faculty. Their energies are fully tied up with undergraduate classes; getting existing research projects, publications and graduate student theses finished; and trying to obtain funds and students. Many were sceptical of seeing results from investments of time in the kinds of general Departmental planning, restructuring and upgrades emphasized here.
6. *The University administration:* The senior administration needs to develop a reasonable schedule of renovations, renewal and update of basic work spaces, furnishings and facilities—at least for this Department. Its absence is at odds with the actual levels of usage in the Department, the educational and research demands made upon it, the number of students taught and faculty performance.

These problems adversely affect core teaching needs and programmes; this gives us all the more reason to emphasize the energy and enthusiasm of the students we met, our high regard for most faculty and staff, and what they have managed to achieve. Their relative cheerfulness and good will is remarkable. Obviously, there is more to a successful programme than funds, facilities and equipment.

We think there is a very talented, hard working and brave faculty in Geography, with some excellent recent appointments and the opportunity to add to them. There is an excellent support staff. There are emerging benefits from the careful, sensitive and balanced leadership of the current Chair. In particular, preparations for this Review, and the Faculty Retreat Process, seem to have restored momentum; a commitment to rethinking curriculum in light of present realities and opportunities; to Departmental dialogue, and reassessing the openness of, and procedures for, its governance. All of this, we would say, was much needed and had, perhaps, fallen by the wayside since the last Review. But, these changes also need much clearer support of all senior faculty. Effecting change requires equivalent concern, funding and incentives from senior administration. Otherwise, it is unlikely to outlast the present process, as faculty and staff again become buried in day-to-day commitments in a chronically under-funded and dispersed set of commitments.

It is our sense we are making the case for response to two Review periods, our own and the one for the previous seven years. On the evidence, the last Review might just as well not have taken place. In other words, we see the need for a concerted response to more than a decade of growing neglect, reduced real faculty and staff resources, especially affecting the core of the programme, and balancing its needs against other options and opportunities.

Appendix 1: Overview of Geography Departments in Canada

Canadian Association of Geographers' Data on 10 Departments of Geography

Institution	Honors		Majors		Minors		Total		Graduates		Faculty*			
	99	98	99	98	99	98	99	98	99	98	99	98	97	
York (inc. Atk.)	236	312	599	496	82	97	917	905	626	37	35	23	26	26
SFU	9	8	385	454	124	161	518	623	619	60	60	25	24	25
U of T	135	202	324	267	106	108	565	577	577	134	150	37	37	40
Concordia	14	9	525	473	20	31	559	513	453	20	16	11	10	10
Waterloo	283	587	176	422	n/a	n/a	459	1009	675	61	48	19	20	20
U of Victoria	6	18	362	344	32	14	400	376	368	72	65	20	21	18
Queen's	69	70	255	359	59	51	383	480	530	53	53	20	19	17
Guelph	259	261	58	59	13	12	330	332	315	40	35	17	17	17
UBC	10	10	215	201	15	15	240	240	212	98	98	29	27	26
Carleton	128	116	103	161	n/a	n/a	231	277	402	63	74	21	22	23

* Includes all full-time permanent faculty including lecturers

Appendix 2: Summary Data on Geography Department, Simon Fraser University

Year	Faculty Losses	Faculty Appnts.	Faculty FTE's	Undergrad FTE's	Courses by Sessionals	(Headcount) Sessional Enrollments	Fall Graduate Enrollments				Number of Graduating Students			
							MA	MSc	PhD	Total	MA	MSc	PhD	Total
1994-5			21.75	549.90	25	1,235	25	18	13	56	5	2	2	9
1995-6	.5 Roberts, M. .5 Hickin (to Earth Sc)	Brennand Roseland Winton (lec)	22.75	528.10	20	1,276	24	14	19	57	4	4	1	9
1996-7			25.50	511.43	16	424	23	11	19	53	4	5	1	10
1997-8	Nesmith (Rs) Brown (adm) Gibson (Rt) Pierce (adm)		21.25	486.00	14	617	26	12	22	60	3	2	-	5
1998-9		Clapp	21.25	468.60	15	573	26	8	22	56	6	6	3	15
1999-2000	Moore (Rs) Poiker (Rt) Wong (Rt)	Bradshaw	19.5*				23	10	26	59	4	3	2	9
2000-1	Brown (Rt)	GIS Hydrology												
2001-2														
2002-3	Evenden (Rt)													
2003-4	Horsfall (Rt) Roberts, M. (Rt)													
2004-5	Koroscil (Rt)													
2010	Hicklin Hutchinson Roberts, A.													
2011	Gill													

Rs: resigned Rt: retired * - estimated

Appendix 3: Schedule for Site Visit

Department of Geography Itinerary for Site Visit of Review Committee 27-30 October 1999

Wednesday 27 October

Date	Event	Location
8:00 - 8:45	Mtg. Dr. Munro, VP Academic, Dr. Pierce, Dean, Fac. of Arts, Dr. Clayman, VP Research & Dean of Grad. Studies, Mrs. Alison Watt	PCR
8:45 - 9:45	Meeting of committee members	PCR
9:30 - 10:20	Tour of Facilities & Mtg with Chair, Dr. Alison Gill	CC6206
10:30 - 11:30	Meeting with Undergraduate Studies Committee, Dr. Bob Horsfall, Chair	CC6206
12:00 - 1:15	Open lunch in Halpen Centre Lounge	Rm 114
1:30 - 2:30	Meeting with undergraduate students	CC6206
3:00 - 5:00	Meeting with faculty (see reverse for schedule)	CC6206

Thursday 28 October

8:30 - 9:15	Meeting with VP Research & Dean of Graduate Studies	CC6206
9:30 - 10:00	Meeting with Dr. Ted Hickin, Chair, Earth Sciences	CC6206
10:00 - 11:30	Meeting with faculty (see reverse for schedule)	CC6206
11:30 - 12:30	Meeting with graduate students	CC6206
12:30 - 1:30	Lunch meeting with Graduate Studies Committee, Dr. Mike Hayes, Chair	DUC
1:45 - 2:15	Meeting with Dr. Mark Roseland, C.E.D.	CC6206
2:15 - 2:45	Meeting with faculty (see reverse for schedule)	CC6206
3:00 - 3:45	Meeting with Co-op reps Matt Ferguson	CC6206
4:00 - 4:30	Meeting re SIS Certificate & Labs with: A. Roberts, P. DeGrace	AQ2111
4:30 - 5:00	Meeting re Urban Studies with: Warren Gill, Nick Blomley	CC6206
5:15 - 6:30	Reception	

Friday 29 October

8:30 - 9:00	Meeting with Technical Staff: Ray, Gary, Paul	CC6206
9:00 - 9:30	Meeting with Support Staff: Ravinder, Marcia, Dianne	CC6206
9:30 - 10:00	Meeting with Department Assistant, Hilary Jones	CC6206
10:00 - 11:45	Meeting with faculty (see reverse for schedule)	CC6206
12:00 - 1:00	Lunch meeting of committee (without guests)	CC6206
1:00 - 1:30	Meeting with Library Committee & Reps.	DUC
1:30 - 2:00	Meeting with faculty (see reverse for schedule)	CC6206
2:00 - 2:45	Meeting with Resources Committee, Dr. Lance Lesack, Chair	CC6206
3:00 - 4:00	Meeting with Chair, Alison Gill	CC6206

Saturday 30 October

10:00 - 11:00	Meeting with Drs. Munro, Pierce, Clayman and Mrs. Watt	HC1500
11:00 ...	Working on draft report	HC1500

PCR - President's Conference Room, 3rd Floor, Strand Hall
 CC - Classroom Complex aka Robert C. Brown Hall
 HC - Harbour Centre

**Individual Faculty Meetings
With the Department Review Committee
(Third Revision)**

Date	Time	Faculty Member
Wednesday 27 October	3:00	I. Hutchinson
	3:15	P.M. Koroscil
	4:00	W.G. Bailey
	4:15	M.V. Hayes
	4:30	C.B. Crampton
Thursday 28 October	10:00	J.A.C. Brohman
	10:15	N.K. Blomley
	10:30	I. Winton
	11:00	M. Roberts
	11:15	R.C. Brown
	1:45	M. Roseland
	2:15	T.A. Brennard [sic]
	2:30	M.G. Schmidt
	2:45	L. Lesack
	Friday 29 October	10:00
10:15		B. Bradshaw
10:30		L. Evenden
10:45		R.B. Horsfall
11:00		A. Clapp
11:15		A. Roberts
1:30		R. Hayter
1:45		B. Pittman