Report of the Academic Program Review Panel on the Department of Geography Memorial University of Newfoundland

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1.0 Introductory Remarks

The Academic Program Review Panel examined the Self-Study components provided by the Department of Geography. On the evening of April 18, 2001 the panel met with Dr. Evan Simpson (V.P. Academic), Dr. Terry Murphy (Dean of Arts) and Dr. Greg Kealey (Dean of Graduate Studies) to discuss the review procedure. A site visit was conducted April 19-20 during which the panel met with faculty, staff and students. We toured the main departmental facilities as well as visiting the map library. The panel met at the end of each day to summarize the information received and met for a final time on the morning of April 21 to draft the report and assign remaining writing duties.

The Review Panel has followed the “Procedures for the Review of Units and Programs” in the preparation and organization of this report. We have made 19 recommendations (R1 – R19) identified throughout the report in bold and with an asterisk. (A list is also included as an appendix at the end of the report.) In some cases the recommendations are intended for the Department of Geography, in others for the Dean of Record or for the review procedure itself.

The Geography Self-Study consisted of the following 19 components:

1. Strategic objectives
2. Student enrollment information
3. Student feedback and questionnaires
4. Lists of completed theses
5. Curriculum and teaching
6. Proposal for diploma in geographical information systems
7. Course outlines
8. Final exams
9. Faculty CV’s
10. Faculty contributions
11. Joint appointments and collaborations
12. Outreach
13. Staff contributions
14. Cartography and MUNCL
15. GEOIDAL-GIS and Remote sensing
16. Budget
17. Workload
18. Library holdings
19. GIS proposed course at SWGC

The Self-Study document is described by the “Procedures for the Review of Units and Programs” as the central element of the review process. It should provide a clear picture of the unit’s current status, its objectives and how they are being met, and an indication of where it hopes to go in the future. While a significant amount of documentation was provided in the Geography Self-Study, it was provided largely in the form of “raw material” with little attempt by the unit to synthesize or evaluate it.
*R1. The Review Panel recommends that in the preparation of the Self-Study the academic unit be asked to include a document that specifically addresses the unit’s long-term plan and future direction.

2.0 Undergraduate Program

The Department states that its first strategic objective is "to provide a strong liberal education for undergraduates in the discipline of Geography." To do this, the department offers a very focussed program in the first two years, followed by a broadening of the course offerings to permit students to specialize in their upper two years.

Undergraduates entering the program have varying backgrounds in geography. Some have studied geography in high school at the Grade 12 level; others have taken no geography since Grade 7 or 8. It is understood that about 95% of the students taking first-year courses in geography come from Newfoundland. Because of the interdisciplinary nature of geography, students entering the program may have either a science orientation or an arts or social science background. This wide range of background knowledge and areas of interest must be accommodated as students enter the program.

2.1 First-Year Geography

For the student embarking upon a geographical career or for a student who is already registered in another program at Memorial and is looking for one or more optional courses, the first-year program consists of two courses:

- GEOG 1010 "Introduction to Geography I"
- GEOG 1011 "Introduction to Geography II"

As indicated in the self-study report, several sections of both courses are offered, depending on student numbers and the availability of faculty. For example, in Fall Term 2000, three sections of GEOG 1010 and three sections of GEOG 1011 were offered. In Winter Term 2001, two and four sections were presented, respectively. This resulted in totals of 674 students registering in GEOG 1010 and 133 registering in GEOG 1011 for a total enrolment in first-year Geography of 807 students. The corresponding number in the previous year was 805. These numbers are high compared with the numbers of students enrolled in first-year geography courses in similar-sized Canadian universities.

Both first-year courses provide an introduction to four or five aspects of geography, which span both the natural and the human-influenced environments. It is interesting to note that in most geography programs, first-year courses are separated into those that cover either the natural environment or the human-influenced environment. Pedagogically, the MUN approach is sounder as it integrates the two major elements of the subject, but it is more difficult for an individual to teach. Thus the department is to be congratulated for adopting this innovative approach to the first-year courses. In addition, there is a conscious effort among first-year
instructors to use news items to provide examples of ways in which a geographical approach to issues can give additional insight to current events. This is also to be commended.

What are the differences between the two courses? While GEOG 1010 consists of three lectures per week, GEOG 1011 incorporates an additional three-hour lab class. The topics covered vary between the two courses, but in both cases, elements of physical and human geography are incorporated into the course. Based on examination of the course outlines, laboratory exercises and sample examination papers, the content of the courses is appropriate for introductory classes in geography.

Questions were raised with the department about the considerably larger number of students taking GEOG 1010 compared with GEOG 1011 (674 versus 133 in 2000-01). Although no survey has been undertaken of students' rationale for taking one but not the other course, there are several plausible explanations for this. First, when they enrol in first-year geography, some students are simply looking for a one-term elective. They do not intend to take a second course in geography. Second, the additional workload provided by the three-hour laboratory class is a deterrent to those who are not fully committed to a geographical career. In discussions with the first-year instructors, it was stated that previous informal surveys, based on declared majors, indicated that relatively few students who intended to enter geography were lost to the program after GEOG 1010.

It occurred to the Review Panel that the titles of "Introduction to Geography I" and "Introduction to Geography II" are not very exciting names. They might sound boring to potential students.

*R2. The Review Panel recommends that the Department consider devising new course titles for GEOG 1010 and GEOG 1011 that are more appealing to a prospective student.

2.2 Second-Year Geography

In second year, there are four core courses that lead directly to third-and fourth-year groupings of courses, and frequently provide prerequisites for them. These are:

- GEOG 2001 "Cultural Geography"
- GEOG 2102 "Physical Geography"
- GEOG 2195 "Introduction to Maps: Cartography, Remote Sensing, and Geographic Information Systems (GIS)"
- GEOG 2302 "Issues in Economic Geography"

These four courses span both the physical and human dimensions of the subject, and provide an introduction to some of the techniques that geographers can use in their studies. This grouping of four required courses ensures that the student is exposed to several of the sub-areas of geography.

In addition to the required courses, there is a methods course that is applicable to most aspects of geography:
GEOG 2220 "Research Design and Quantitative Methods in Geography"

This course is one of the prerequisites for third-year courses in remote sensing and in GIS, and for all four courses at third year in the area of physical geography. There is also a course that focuses on map interpretation:

GEOG 2200 "Introduction to Thematic Cartography"

Given the thematic strengths and interests of the faculty members and the topics of the third- and fourth-year courses, the selection of the four required courses is appropriate. Similar courses would be found in other Canadian universities, and the course outlines indicate that the topics covered are appropriate for second-year university courses.

2.3 Third-Year and Fourth-Year Courses

There are four thematic groupings at the third-year level:

- **Group A:** Cartography, Remote Sensing and Geographical Information Systems
- **Group B:** Location Theory, Natural Resources and Urban Geography
- **Group C:** Population, Cultural, Migration & Colonization, and Political
- **Group D:** Physical Systems, Climatology, Biogeography, and Geomorphology

Students have to take a minimum of four courses from at least three of the above groups.

Data provided by the department indicate that the above courses have been taught on a regular basis over the period 1995 to 2001. With a few exceptions, courses have been taught each academic year. There has never been an occasion when a core course has not been taught at least once over a period of two academic years.

For students who are taking the Major in Geography (BA or BSc) there are no fourth-year requirements, except that at least two courses must be taken at the 4000 level. Students registered in Honours Geography must meet these same requirements, but in addition they must take:

- GEOG 3230 "Field Course"
- GEOG 4990 "Nature of Geography"
- GEOG 4999 "Dissertation, Honours Degree."

In addition to the core courses, the Calendar 2000-2001 lists a range of elective courses. At the third-year level, these electives total 22, excluding "Special Topics in Geography" and courses offered at the Harlow Campus. In addition, the Self-Study Report indicates that 10 courses at the third-year level have been offered at least once over the past six years. The choice, however, is limited in that, over the past five years, only five elective courses have been taught. Of these five courses, four have been taught only once (Table 3 in Curriculum & Teaching, Self-Study}
The major reason for the sudden decrease in third-year electives after the 1995-96 academic year is the non-replacement of retired faculty members.

More electives are available at the fourth-year level than at the third-year. This is because there are only three required courses at fourth year. A count from the Calendar 2000-2001 indicates that the department can provide 32 elective courses, excluding "Special Topics in Geography."

Given the reduction in faculty complement, it is impossible for the department to offer all the third- and fourth-year electives that are currently listed in the Calendar. At the same time, by listing this large number of courses, the department is implying that they will be available to the students in at least one of the terms while they are completing their four-year degree. Maintaining a large listing of elective courses is inappropriate as it sets up expectations in the students that the courses will be available. In fact, when the review panel met with the undergraduate students they expressed concern that many of the courses in the Calendar are never offered.

*R3. The Review Panel recommends that the Department review all elective courses to determine which courses can be offered in the future. Any courses that are unlikely to be offered should be removed from the Calendar listing.

Based on a review of the course outlines, laboratory assignments and final examinations for several of these third-year courses, the course content and topics covered are appropriate for senior-level students.

2.4 Bachelor of Arts or Bachelor of Science?

Geography students are able to enrol for either a BA or BSc degree. A table provided in Student Enrolment Information (Self-Study Report) indicates that over the last 10 years the ratio of BA students to BSc students has changed dramatically. For example, in 1990-91, 28 students received a BA and eight BSc degrees were granted. The switch to more students graduating with a BSc than with a BA happened in the middle of the decade (1995-96: 36 BA and 26 BSc; 1996-97: 33 BA and 41 BSc). In the 1999-2000 academic year 13 students were awarded the BA while a total of 52 students graduated with a BSc.

The Review Panel discussed this change with the administration, faculty members and the undergraduate students. The major reasons for the change seem to relate to changing program requirements in both the Faculty of Arts and the Faculty of Science. The Faculty of Arts introduced a requirement for a second language. This move diverted some students towards the Faculty of Science. At the same time, the Faculty of Science dropped its requirement for mandatory physics and chemistry, requiring students instead to take "six credit hours in courses from each of two Sciences other than Mathematics" (Calendar 2000-2001, p. 220).

In the Department of Geography, there are currently no requirements to differentiate the course content of a BA degree from that of a BSc degree. The review panel felt it is important that students receiving a BSc degree should have focussed their course selection on the "physical" and "techniques" side of the discipline.
*R4. The Review Panel recommends that the Department identify those courses within its course listings that are appropriate for a student who is planning to graduate with a BSc degree, and designate a specified number of such courses to be taken prior to qualifying for the degree.

2.5 Student Opinion of Undergraduate Courses

Undergraduate students identified a number of issues that need to be addressed. Some felt that student numbers in first-year courses are too large and that the academic level of the first-year courses is too low. It is not uncommon for majors to feel that the introductory courses, which are aimed at students having variable academic levels and experience in geography at secondary school, need to be more advanced. One way to address this would be to run a general service course for those looking to take introductory geography as an elective or degree requirement, and a more advanced introductory course for those who are looking to major in geography. The department might want to consider this option as it ponders the structure and success of its first-year courses.

The students also identified a problem of inconsistency between sections of courses taught by different faculty members. This was contrary to the response of the faculty at the exit meeting where it was stated that there is close collaboration between instructors of different sections, and that there is a serious attempt to ensure that the sections cover the same materials and have similar expectations of the students. In the absence of regular course evaluations, there is no way to check the validity of the students’ claim. This leads to another area of concern, which is the lack of mandated student evaluations of all courses. Many universities have some kind of required course evaluation by students, although it is difficult to force a faculty member to do this if they strongly object. However, such evaluations are usually a required component of the review of teaching effectiveness for tenure and promotion. Such information is valuable not only for reviewing individual faculty, but also to indicate the overall level of satisfaction by students with the courses taught. In the case of the introductory sections, such evaluations (along with grade reports) would indicate serious and persistent differences between the various sections. Furthermore, such data are valuable tools for program reviews such as the one being undertaken here.

*R5. The Review Panel recommends that the Department encourage student evaluations of all courses and course sections, that the University consider developing policies and procedures to make student course and course-section evaluations a regular activity, and that the results of such evaluations be an expected component of the unit review process.

The undergraduate students also complained about timetable clashes between courses in joint programs, such as Computer Science, Earth Sciences, and Biology. This was confirmed as an issue by faculty and administrators.

*R6. The Review Panel recommends that the department work with other departments to ensure that in joint programs there be as few scheduling clashes as possible between
geography classes and those in the collaborating departments. This may require some institution-wide considerations regarding the scheduling of courses.

The issue of credit transferability between Sir Wilfred Grenfell College in Cornerbrook (SWG) and the St. John’s campus was raised. While the specifics of this issue are complicated, and are beyond the scope of this review, the department and the geography program at SWG should set a goal to establish full credit transfers between the programs and work together to ensure that common standards are met.

The students had high praise for the field courses, and expressed satisfaction with the learning experiences provided through this pedagogy. The department is to be commended on its use of fieldwork in the curriculum, and is encouraged to find ways of increasing this method of teaching geography. As with most geography students, the message is consistently that the more fieldwork the better.

2.6 Diploma Program in Geographic Information Sciences

The establishment of the Diploma Program in Geographic Information Sciences is an excellent initiative. First, it brings together the expertise of three existing faculty members (Dr. C. Wood, Cartography; Dr. A. Simms, Geographic Information Systems (GIS); and Dr. É Simms, Remote Sensing) and the teaching capabilities of two laboratories (MUNCL for Cartography and GEOIDAL for GIS and Remote Sensing). There are few departments across the country that can offer similar levels of expertise and facilities in all three areas of cartography, GIS and remote sensing; in two areas, yes, but not in all three. A second strong rationale for establishing the Diploma is that it builds almost exclusively on existing courses within the Department of Geography, thus requiring a minimum of new course offerings.

A recent study by Hickling, Arthurs and Low (January 2000) concerned with Human Resources in the Geomatics Sector has indicated that over at least the next five years there will be a shortfall of qualified personnel, particularly in the areas of GIS, decision support, navigation and positioning, and remote sensing. According to the study, demand for personnel with knowledge of geomatics is estimated to be about 2,000 per year in Canada over the next few years. However, Canadian universities and colleges are currently producing about 950 graduates per year. Many of these graduates are accepting positions in the USA, where there is also a shortfall of qualified individuals.

The increasing need of industry and government for students with expertise in geographic information science has been recognized in departments of geography across the country. Most departments now offer at least one or two courses in geographic information systems (GIS), remote sensing, mapping techniques and spatial statistics. Some offer a specialization, a specialist certificate or a minor in GIS to students who have completed a specified suite of courses.

To be fully qualified in geographic information science requires taking a range of courses and also becoming familiar with the capabilities of advanced software. As far as is known, the offering of a Diploma that can be taken concurrently with a degree in Geography, as being
instituted at MUN, is unique in Canada. The fact that students do not apply to enter the program until they have demonstrated their capabilities will also be beneficial in that only top-quality students will be participating in the program. In this way, MUN will establish a reputation for providing well-qualified individuals in the area of geographic information science, particularly in eastern Canada.

Although the proposed Diploma Program is built on existing courses, there are costs involved, in particular the need for computers and software to be used in the teaching program. This topic is discussed in more detail in Section 8.0.

3.0 Graduate Program

The geography graduate program at MUN plays a very important role not only within the university but nationally as the only one in the Atlantic Canada. In fact, it is the only graduate program in geography east of Quebec, and the only anglophone graduate program east of Montreal. Its viability and success have importance for the discipline of geography in Canada. Therefore, the problems that have characterised the MUN graduate program in the last ten years are troubling. These problems, which are highlighted by declining numbers of faculty, low enrolments, low rates of completion, and limited external funding, need to be addressed seriously by the department if the program is to remain credible.

MUN has been attempting to raise the visibility of graduate studies in recent years, and this is well represented in the recent Strategic Framework and the introduction of initiatives such as increased funding opportunities (such as the Doctoral Teaching Fellowships) and the graduate prospectus. These initiatives are to be commended.

3.1 Doctoral Program

The doctoral program was introduced in 1991 with great hopes for success. Based upon the research strengths of the department, at the time, the Ph.D. was approved to be offered in three fields:

- Historical and Cultural Geography
- Economic Geography
- Physical Geography

A fourth field of Cartography/GIS/Remote Sensing has since been added. It is interesting to note that the proposal to approve the doctoral program included a secondary recommendation that the upcoming retirements be replaced by people with similar capacities for research and scholarly activity. Clearly, this recommendation has not been followed with significant adverse effects upon the program.

*R7. The Review Panel recommends that the Dean of Arts ensure the department suffers no further losses in complement, and that replacement appointments are made only to individuals who will bring an active research profile to the department.*
Given the current faculty numbers and their research strengths, the department should reconsider the fields being offered in the doctoral program.

*R8. The Review Panel recommends that the Cultural/Historical field be suspended pending a review of the future of the department in this area and pending decisions regarding faculty renewal and appointments. The Economic Geocraphy area should be expanded to include Resource Management.

*R9. The Review Panel recommends that, given the importance of marine and coastal geography in Newfoundland (especially with offshore development and its economic, social and environmental impacts), and the research strengths in these areas, the department should consider increasing the visibility of this area within the graduate program.

In its first eight years of operation, the doctoral program has admitted four students, only one of whom has successfully completed the PhD degree. One was terminated, a second withdrew, and a third transferred to another university. The one who did graduate took eight years to complete. During that time, the department lost nine faculty through retirement (8) and resignation (1), with only one position being replaced. The cultural and historical geography area took the brunt of these losses. Since 1999, however, the picture looks brighter with three strong students being admitted into the program. These students are progressing well, and it will be an important boost for the department to see some successful completions. The Dean of Graduate Studies and the Graduate Committee have indicated that they have some very good applicants for 2001. It is hoped that there will be another intake of strong students to add to the three in progress. This will also be good for the students, as it is important for doctoral students to have a group of colleagues to interact with and support each other.

One of the key factors for a successful doctoral program is the ability to provide adequate levels of financial support. Despite funding from the School of Graduate Studies, the department is not currently generating enough external funds to support their doctoral students. Only small amounts of money from external sources have been provided to the students through faculty research grants, and only a few students have received external funding themselves (and then only small amounts). No doctoral students in the program have been awarded NSERC or SSHRC doctoral scholarships, and there is some indication that the doctoral students are not encouraged or required to apply for such awards. There was also a suggestion that the SGS policy of removing internal support when students win external awards discourages students from applying. However, discussion with the Dean of Graduate Studies showed that while the winning of external awards does free up internal awards for other students, external award winners are not penalised (i.e., they do not risk getting less money) and are in fact rewarded with top-up money. Also, students who are nominated by the university for NSERCs and SSHRCs get an award just for applying and being nominated. It is important that the department place a high priority on attracting into the doctoral program top-quality students who either hold NSERC, SSHRC or other significant awards, or who will be strong candidates to apply for them. All doctoral students who do not hold national awards should be required to apply for them.
Beyond the traditional Teaching Assistant positions, teaching opportunities for doctoral students are very limited. Despite the fact that the School of Graduate Studies offers Doctoral Teaching Fellowships with a value of $45,000 over three years, and that they have not been able to use up all of this money available on an annual basis, the department has not embraced the program. Members of the department expressed some reservations about the appropriateness of having doctoral students teach classes. However, most doctoral programs in Canada encourage the inclusion of a teaching component and some require it. We agree with the department that doctoral students should not teach first-year classes, and that they should not teach classes until they have completed their comprehensive exam and had their research proposal accepted. Discussions with the Dean of Graduate Studies indicate that there is considerable flexibility on how and when the teaching duties of the doctoral student are allocated and used. Also, the holders of the fellowships have to take the teaching pedagogy course offered by SGS.

*R10. The Review Panel recommends that the department begin to draw on the Doctoral Teaching Fellowships as a source of funding, and provide senior doctoral students with increased teaching opportunities. The department should consider introducing a formal teaching requirement for doctoral students.

It appears that only one international student has been admitted into the doctoral program, and unfortunately the department had a bad experience when this student left after only a short period of time. This should not discourage the department from seeking international students, as long as they are of the highest quality and they fit with the research strengths of the department. The fact that MUN has no international differential fees is a potential marketing tool, and perhaps international students who are already in Canada taking master's programs might be attracted to the department as a result of the combination of research strength and significantly lower fees. Some faculty mentioned the problem of the standard of English for international students whose first language is not English. This is a constant problem, and it is difficult to resolve completely. Although experience and research shows that the TOEFL is not a good predictor of capability in English, MUN's ESL program provides an important backup. The department should ensure that only students who meet the required levels of ESL and teaching pedagogy be allowed to have a TA or teaching appointment.

In conclusion, while the doctoral program has clearly had a very rocky start, we feel that it is beginning to establish itself and that a few successful candidates will greatly enhance the reputation and visibility of the program within MUN and beyond. However, it is vital that the department identify the doctoral program as a high priority and provide it with the resources and consideration it needs to develop and survive.

3.2 Master's Program

The Master's program has been established much longer than the doctoral program, and has developed a strong reputation within the region and nationally within the discipline of geography. The research strengths and capabilities of the department are highly recognised and valued. However, some of the same issues that have plagued the doctoral program have also affected the master's program.
The master's program has a small number of students, although the ones we met were keen and motivated. Overall, the program has been characterised by students failing to complete, or taking an inordinately long time for completion. Although we did not see any data regarding the quality of admissions, anecdotal comments suggested that failures and lack of completion were, at least in part, related to the admission of academically marginal students. The department, through its Graduate Committee, needs to ensure that all students admitted to the graduate program meet appropriate academic standards. Admitting only highly qualified applicants in areas of research strength will reduce the attrition rate and improve the reputation of the program. Furthermore, it will prepare the department for when the SGS changes its departmental scholarship allocations to include a formula based in part on the quality of admissions.

As stated above, the department needs to recognise that it cannot continue to offer the same program as it did when there were 27 faculty. There is a need to tailor the master's program to focus on the existing department strengths and regional needs. Given the department's traditional strength in areas that are closely related to the research and development needs of Newfoundland (such as the cultural, historical and social development of Newfoundland; offshore resource management; and coastal environmental research), the department has an important role in fulfilling one of the strategic objectives of MUN in bringing graduate studies in line with the developmental and research needs of the province (Action 2.4 in the MUN Strategic Framework document). Although there is not such a need to limit fields as there is for the PhD, the department should undertake a serious review to identify a number of distinct areas of strength to highlight and market in order to attract high-quality students. Areas that come to mind are economic geography, resource management, marine and coastal studies, community/regional economic development, offshore resource development, Quaternary studies, climatology and global change, and applications of GIS and remote sensing.

The department needs to be clearer in its advertising what research strengths are available. For example, the Graduate Prospectus and Calendar should not list retired faculty unless they are actively taking on graduate students as part of their continuing research activities. The department also needs to identify key areas to promote the master's program and recruit high-quality students. This does not mean that master's students cannot or should not be admitted in any area of geography that is covered by the expertise of the faculty. However, the department should develop a strategic initiative to promote and recruit for the program by highlighting those areas of research which reflect the distinct and unique strengths of the department.

The Department of Geography is actively involved with a number of interdisciplinary graduate programs, such as the Master of Environmental Science (with the Departments of Biology, Chemistry, Physics and Earth Science) and the developing master’s program in Integrated Coastal Zone Management (with the Marine Institute). Such programs are often attractive to geography graduates, and yet there is little promotion of these program options within the departmental materials describing graduate programs. Although these may not be Geography programs as such, they do provide viable options for geography students and could be an additional means of attracting geography graduates to MUN. Geography graduates who enter these programs need to be considered part of the department, even though they may not be registered within the geography department. It is important that geographers who enter into
interdisciplinary graduate programs maintain their links and involvement with their core discipline.

* R11. The Review Panel recommends that the department endeavour to advertise and promote more directly its involvement with interdisciplinary graduate programs at MUN, and ensure that the geography graduates in these programs maintain their links and involvement with the discipline of geography.
3.3 Student Funding

Overall, the funding level for geography graduate students is on the low side. Of the six Arts departments with doctoral programs, Geography is the second lowest in total student funding with a total of $93,005 for 2000-01 (data source from SGS). Given that some geography graduate students and faculty are eligible for NSERC funding, which is generally at higher levels than for SSHRC, one would expect higher levels of support. Of course, the numbers reflect the small number of students in the graduate program, but it is also reflective of overall low levels of external funding for faculty research. In the category of external scholarships, the department is the lowest of the Arts doctoral programs ($9,650 compared with $92,869 for the highest). The department is highest in the area of funding support from faculty research grants, although at $30,131 this amounts to only the equivalent of two modest full scholarships. For 2000-01 the department allocation from SGS is $49,400 and to date over $55,600 has been allocated or committed. Optimistically, this reflects a turnaround in the quantity and quality of admissions into the graduate program. The additional money from SGS is helpful, and will be needed to help the department develop its graduate program over the next few years. However, SGS should ensure that the department is committed to increasing the levels of external support for students. Furthermore, SGS needs to encourage departments to admit higher-quality students. If implemented, proposed changes to the SGS scholarship allocation will go some way towards ensuring this. In a more competitive environment whereby departments are rewarded for the quality of their graduate admissions, the improved quality of geography graduate admissions will be of direct benefit to the department.

Funding levels vary considerably by individual student, with students reporting total amounts of $2000 and $15,000 for example. Information provided by the department and SGS after the site visit indicates that there is indeed considerable variation in funding levels, although it is clear that the department seeks to provide funding for students from a variety of sources. Current funding of the doctoral students (with one exception) is at competitive levels. There is inevitably going to be some variability depending upon the nature of the research and the amount of funding support provided by the supervisor. However, it is important for the department to monitor this and not allow significant discrepancies to occur. These can lead to serious issues of inequity within graduate programs.

*R12. The Review Panel recommends that the SGS and the department consider establishing a minimum level of funding for full-time graduate students, with the doctoral level being higher than the master’s level. This minimum level of support can be made up from different funding sources and combinations of scholarships, awards, and TAs, but some level of equity needs to be maintained to ensure that all graduate students are funded at a reasonable level of subsistence.

The members of the Graduate Committee identified a mismatch between those with large amounts of money to support graduate students but few eligible students (due to the specific nature of the research) and those with little money but large numbers of applicants. While this may be a reality, it is the result of being unable to secure significant external funding (both for research and student support) and is not a causal factor.
*R13. The Review Panel recommends that the department identify as a priority the need to increase external funding support for faculty research and ensure that funding applications include amounts to support graduate students, regardless of the source of the funding. Although SSHRC does not explicitly provide for graduate student stipends in the way that NSERC and CIHR does, one can include graduate student stipends within SSHRC applications and this should be encouraged by the department and the Office of Research.

3.4 Student Issues

The graduate students we met were full of praise for the department and their supervisors. They also had no complaints about the space and resources being provided to them by the department and the university. Of course space and resources will become more of an issue as the numbers of graduate students increase, so this will need to be considered as the department recruits new students. Some evidence was presented that suggested some of the past problems were related, at least in part, to a lack of attention from supervisors (such as leaving for sabbaticals without providing for adequate supervision and guidance). The department needs to ensure that all who take on graduate supervision are committed to that responsibility, and that the Graduate Committee ensures that the progress of graduate students is being monitored and supported continuously.

3.5 Conclusions

The graduate program in Geography is one of strategic importance for MUN given its uniqueness within the Atlantic Region and eastern Canada. Its problems over the past ten years are troubling in that they question the viability of the program, especially at the doctoral level. The department has not made the graduate program enough of a priority, and in dealing with other issues (such as declining faculty and trying to maintain the undergraduate program) the graduate program has been allowed to drift. Given the strategic importance now being given by the university to research and graduate studies, the department needs to make a strong case for not only maintaining the current level of resources but actually increasing resources to provide for a managed recovery and growth of the graduate program. The new joint faculty appointment with Biology will help in this regard, but it is critical that the faculty complement decline no further and that upcoming retirements are replaced. There is a strong onus on the department to clearly identify where they want to go and how they intend to get there. This involves addressing the issues of research strength, faculty and student funding, fields of strength, promotion of the program and the recruitment of high-quality students. The department needs to develop a strategy for graduate studies over the next twelve months and submit its plans and proposals to the SGS.

4.0 Faculty Research and Scholarship

The faculty group themselves into four areas:

1. Cultural/Historical
2. Urban/Economic/Resources
3. Cartography/RS/GIS
4. Physical

Two faculty are currently in receipt of NSERC and SSHRC funding. Over the last decade the funding profile was different with three other faculty having significant grants from these sources. Many other faculty have been successful at obtaining grants and contracts through other national and international sources such as federal (CCAF, Parks Canada, Environment Canada) and provincial governments, WWF International, etc. The research and scholarship of two faculty members has been recognized by the university in the form of a President's Award for Outstanding Research, and a University Research Professor.

The Cultural/Historical group has traditionally been one of the strongest in the department but has been affected by the decline in faculty complement. Remaining faculty are close to retirement age. Student interest has also waned in recent years as they question what job prospects might be in this area. This shift in interest is recognized as a problem nationally also. The group sees the need for a new cultural geographer who can focus on contemporary problems - not just those related to Newfoundland. This is the weakest research group. Current external funding is low to nonexistent. Recent publications are few.

The Urban/Economic/Resources group has a very strong research presence and high level of interest in the department. Faculty in this group are active researchers with current levels of external funding in excess of $200K. Peer reviewed publications and technical reports are numerous. The three PhD students currently enrolled are supervised by faculty in this group.

The Cartography/RS/GIS group is responsible for the two major laboratory facilities housed within the department (GEOIDAL and MUNCL). Research contracts to GEOIDAL average $10,000 to $15,000 annually and support continued research and teaching components of this facility. MUNCL contract and project revenues average closer to $25,000 annually. Current funding appears to be exclusively in the form of contracts.

The Physical group is somewhat uneven in terms of being actively involved in research. While some of the faculty have demonstrated continued success in obtaining funding, others have virtually no funding. Current combined funding levels are on the order of $150K. This group also has connections to the interdisciplinary Environmental MSc graduate program of the Faculty of Science. Recent publications take the form of maps and technical reports in addition to articles in peer reviewed journals. The group feels somewhat disadvantaged being within the Faculty of Arts where the need for laboratory/storage space is uncommon and perhaps not considered essential.

There were no complaints about library resources in support of research.

In summary, approximately one third of the faculty members are active and successful researchers with continuous sources of funding. The others are not generating external funding up to their full potential. The impact of this result does not seem to affect delivery of the
undergraduate program but profoundly affects the graduate program. It is also reflected in the areas of interest of students in the program.

*R14. The Review Panel recommends that the Department develop a priority list for faculty replacement in keeping with the Strategic Framework of the University. They should endeavour to recruit faculty with demonstrated research capability and the ability to obtain external grant funding. The Review Panel sees this as closely tied to the success of the graduate program.

5.0 Faculty and Staff

5.1 Use of Faculty and Staff Resources

There is a heavy commitment of teaching resources assigned to the first year with heavy enrollments and no TAs. The same individuals normally teach the first-year courses and seem committed to teaching at that level for pedagogical reasons. Most are senior faculty in the department. Faculty members teach in their respective fields at all levels, including honours and graduate where applicable.

Staff for the Geography Departmental office and for the laboratories seem adequate, although one of the Cartography Laboratory staff is only partially funded (25%) by the university. The remainder of his salary comes from revenue generated by the Laboratory.

5.2 Promotion and Tenure Policies

The department has six full professors and ten associate professors. Of that latter group four - Bell, Butler, A. Simms and E Simms - were promoted between 1996 and 1999. It can be expected that some of these will proceed to the next rank within the next three to five years on the basis of their track record as researchers, teachers and involvement in community and/or university service. For some this will be the holding rank for the rest of their career. The present promotion and tenure procedures set a very high standard for those attaining the professorial rank.
5.3 Implementation of University Employment Equity Policies

The department has recently made only one new appointment: a joint appointment with Biology. While the number of female faculty is small (3) this may well reflect previous hiring practices which were not driven by employment equity concerns.

5.4 Faculty and Staff Workloads

Declining faculty complement has increased teaching workloads and affected programming. A table was provided in the Self-Study showing faculty workloads for the last five years calculated according the formula agreed upon by the Faculty of Arts following the last collective agreement. This table shows that workloads in the Department of Geography are well above the norm of “5” standard lecture courses per year. Discussions with the Head indicate that these teaching loads are generally accepted by the faculty as necessary for delivery of programs, and overloads are banked by individuals for future teaching relief.

The Department has used “Per-Course Instructors” on a few occasions (four individuals with a combined load of 8.95 over five years).

The department has three doctoral students but to date has been disinclined to use them as course instructors. Previous unfortunate experiences with doctoral candidates and the low overall numbers are no doubt the source of their reluctance. However, the Review Panel feels that the Teaching Fellowships program is something that should be explored as it would give doctoral students valuable teaching experience, provide them with extra funding, and also allow the department to field more courses in some of its specialties.

Staff workloads seem appropriate. No complaints were evidenced in the committee's tour of the department office and laboratories.

5.5 Administrative Efficiency

There was no evidence of inefficiency in the way in which either the departmental office or the laboratories were administered. The General Office provides the first contact for most people in the department, including students. The Intermediate Secretary appears to have a good working relationship with faculty and students. The Administrative Staff Specialist II has a thorough working knowledge of academic regulations and administrative policies and procedures. She is responsible for the development and management of the departmental budget. She works with great care and diligence in this position. The staff in both GEOIDAL and MUNCL are highly valued for their skills and contribution to the efficient running of the laboratories.

The staff in MUNCL expressed concerned about equity in dealing with requests for services from non-funded faculty. Often this meant that faculty had to be refused services for want of funds. They perceived this as unfair and as placing considerable strain on personal relationships.

6.0 Community Service
6.1 Opportunities to Serve the Community

The department has a very successful outreach program with local schools. In addition individual faculty play an active role in community organizations and are represented on local and provincial groups and committees in an advisory capacity or as resource persons. For example, faculty with compatible research interests are involved in the local heritage sector.

6.2 Introduction of Students to Professional Community Service Opportunities

The heritage resource program in the faculty of arts, the work term placements for the proposed GIS diploma program introduce students to professional groups within the community. The field school for honours students may offer a further example.

7.0 University Citizenship

7.1 Reinforcement of Goals with Other Units

This seems confined to the proposed new joint appointment with Biology and the Harlow campus program which is a successful, interdisciplinary venture involving History, English and Folklore. Geography courses are also counted in interdisciplinary minors such as Canadian Studies and Newfoundland Studies, which represents a further example of collaboration with other departments.

Note should be made of one example of collaboration between geographers and other units on campus. Two geographers were members of the committee that organized the public commemorations and conference in 1998 on Newfoundland and the Great War. There are other examples related to the activities of the Newfoundland Historical Society, the Wessex Society, the Irish-Newfoundland Society, the Western Front Association and other heritage groups in this province.

7.2 Enhancement of Geography's Place in the University

The review panel feels strongly that Geography needs to advertise better its particular strengths as a discipline and its involvement in several new and imaginative academic programs being launched on campus such as Coastal Zone Management and the Oil and Gas Initiative. Geography has much to offer on this campus besides its obvious strengths as a caring and capable academic department. It needs to advertise better its strengths within the region, especially its important initiatives in Geomatics (GIS/RS/Cartography). The department has had traditional strengths in Human Geography which need to be capitalized on perhaps with a renewed emphasis on contemporary issues. Certain faculty members are involved in the interdisciplinary Environmental MSc program. This too should be recognized and advertised.

Geography's peculiar place in two faculties should be seen as a strength and it should be exploited. It provides the perfect example of interdisciplinary studies on a large scale that could
be of advantage to students interested in this kind of programming. The department might also explore initiatives with other units in the university to develop joint enterprises that would build on existing but complementary strengths - e.g., military studies in the case of History and Geography.

8.0 University Support

The unit has two major facilities that are important to the research of faculty members, as well as being an integral part of the undergraduate teaching curriculum. They are the Memorial University of Newfoundland Cartography Laboratory (MUNCL) and the Geographical Information and Digital Analysis Laboratory (GEOIDAL). Their combined resources (faculty and facilities, plus support staff) will form the basis of the new Diploma in Geographic Information Science. These facilities are described as revenue-generating so do not receive operating funds from the University, with the exception of two staff positions in MUNCL and one in GEOIDAL. They have a fee for service and accept internal and external contracts. Both facilities have a director. However, the director of MUNCL apparently receives a stipend and teaching remission while the director of GEOIDAL does not.

Beginning this year, MUNCL will have to generate 75% of the salary of one of their two technical staff. GEOIDAL facilities (initially funded through start-up funds to Lambert-Simms from the Faculty of Arts) are now out of date or in need of replacement. Both facilities are able to sustain their research operations through grants and contracts. They have also been able to direct large portions of their research and contract-generated monies into the maintenance of the teaching laboratories. However, GEOIDAL now has to solicit contracts over and above normal teaching and research activities specifically to support the continued operation of the teaching laboratory. This is an unacceptable situation. To the best of our knowledge, nowhere else in the University are the teaching activities supported by outside contracts or research funds.

These two facilities are recognized as among the best in Canada. In fact Memorial is one of a select few universities in Canada that is able to provide in its curriculum an internationally recognized expertise in the three areas of cartography, GIS and remote sensing.

The university has recently funded a GIS facility at Sir Wilfred Grenfell College and is in the process of approving a new third year-level course in this area for the degree program in Environmental Studies. This course has links to programs offered at the College of the North Atlantic, but not to existing programs at the St. John's campus. The Review Panel is concerned that this may compete with and even jeopardize the established and new programs offered at the St. John's campus. If university resources are available for this important area, they should be used to sustain and enhance the facilities in which the university already has a significant investment.

The GIS instructor at Sir Wilfred Grenfell College has recently resigned his position to take a faculty position in the Department of Geography at the University of Guelph, effective July 1. The College is actively seeking a replacement, but qualified faculty members with expertise in GIS are not easy to find.
*R15. The Review Panel recommends that the Dean of Arts provide annual operating funds to both of these facilities in support of their role in undergraduate teaching. Such funding would not only ensure the viability of these facilities but would increase their availability to the larger university community.

*R16. The Review Panel suggests that the directors of GEOIDAL and MUNCL actively seek outside sponsorship of their facilities in support of undergraduate teaching as potential matching funds for the Dean of Arts contribution.

*R17. Given the recent establishment of the Diploma in Geographic Information Science at MUN, the Review Panel recommends that faculty and computer resources for GIS be concentrated at the St. John’s campus of MUN rather than at Sir Wilfred Grenfell College.

9.0 Plans, Goals and Resource Allocation

As part of the Self-Study, the unit was asked to identify their strategic objectives within the areas of teaching, research and administration. No attempt was made to assess their success in reaching stated goals or whether objectives were being met. The following offers a summary of the information provided by the department of Geography as well as some assessment by the Review Panel.

9.1 Teaching

The unit has a strong commitment to undergraduate teaching that is reflected in their teaching objectives. Emphasis is placed on the provision of a strong liberal undergraduate education in an environment where students can mature as independent thinkers, yet still acquire the practical or specialized skills of the discipline that enable them to tackle “real world” problems. Also of importance is the ability to provide a quality graduate program at both MSc and PhD levels.
9.2 Research

The Department of Geography recognizes its inherent interdisciplinarity and holistic nature. It is committed to excellence in all aspects of research. A strategic research objective is the development of greater collaboration within the department on research projects to take advantage of the many areas of expertise.

9.3 Administration

The unit has a long record of participation in administration at several levels in the University. It is proud of this record and identifies it as a strength. This extends to organizations external to the university as well. The faculty recognize the need for collegial discussion of issues and the importance of being flexible in dealing with change and adversity.

Although these objectives are commendable and fall broadly within the strategic framework for Memorial University, they are not sufficiently focussed, especially with respect to research and scholarly activity.

*R18. The Review Panel recommends that the Department develop a long-term plan that establishes a clear operational sense of where they want to go.

*R19. The Review Panel strongly recommends that the Department prioritize their needs so that internal resources can be effectively allocated. In addition, there will be high demand among academic units for increased funding from the Faculty of Arts. Only with a carefully thought out plan will Geography be able to claim their share of these resources.

10.0 Concluding Remarks

The Department of Geography at Memorial University has many strengths among which is a national reputation for providing a quality education and a supportive congenial environment for undergraduate students. Its graduate program is small but is showing signs of improvement especially at the doctoral level. The number of faculty has declined drastically over the last few years shifting the balance of research strength in the department. Total undergraduate enrollments have also declined. The Review Panel believes that the weaknesses identified in this report can be traced to two main sources; lack of financial resources from within the University and a department that is not proactive on behalf of important areas that should be maintained and/or developed. This is especially true in the area of external funding which has a direct impact on the quality of the graduate program. It is evident therefore that the challenges facing the Department of Geography include ones over which they themselves have direct control. The Review Panel urges the department to develop a long-term strategic plan to address these challenges that includes a set of milestones to guide its implementation over the coming months and years.
Appendix A: List of Recommendations

R1. The Review Panel recommends that in the preparation of the Self-Study the academic unit be asked to include a document that specifically addresses the unit’s long-term plan and future direction.

R2. The Review Panel recommends that the Department consider devising new course titles for GEOG 1010 and GEOG 1011 that are more appealing to a prospective student.

R3. The Review Panel recommends that the Department review all elective courses to determine which courses can be offered in the future. Any courses that are unlikely to be offered should be removed from the Calendar listing.

R4. The Review Panel recommends that the Department identify those courses within its course listings that are appropriate for a student who is planning to graduate with a BSc degree, and designate a specified number of such courses to be taken prior to qualifying for the degree.

R5. The Review Panel recommends that the Department encourage student evaluations of all courses and course sections, that the University consider developing policies and procedures to make student course and course-section evaluations a regular activity, and that the results of such evaluations be an expected component of the unit review process.

R6. The Review Panel recommends that the department work with other departments to ensure that in joint programs there be as few scheduling clashes as possible between geography classes and those in the collaborating departments. This may require some institution-wide considerations regarding the scheduling of courses.

R7. The Review Panel recommends that the Dean of Arts ensure the department suffers no further losses in complement, and that replacement appointments are made only to individuals who will bring an active research profile to the department.

R8. The Review Panel recommends that the Cultural/Historical field be suspended pending a review of where the department is going in this area and pending decisions regarding faculty renewal and appointments. The Economic Geography area should be expanded to include Resource Management.

R9. The Review Panel recommends that, given the importance of marine and coastal geography in Newfoundland (especially with offshore development and its economic, social and environmental impacts), and the research strengths in these areas, the department should consider increasing the visibility of this area within the graduate program.

R10. The Review Panel recommends that the department begin to draw on the Doctoral Teaching Fellowships as a source of funding, and provide senior doctoral students with increased teaching opportunities. The department should consider introducing a formal teaching requirement for doctoral students.
R11. The Review Panel recommends that the department endeavour to advertise and promote more directly its involvement with interdisciplinary graduate programs at MUN, and ensure that the geography graduates in these programs maintain their links and involvement with the discipline of geography.

R12. The Review Panel recommends that the SGS and the department consider establishing a minimum level of funding for full-time graduate students, with the doctoral level being higher than the master's level. This minimum level of support can be made up from different funding sources and combinations of scholarships, awards, and TAs, but some level of equity needs to be maintained to ensure that all graduate students are funded at a reasonable level of subsistence.

R13. The Review Panel recommends that the department identify as a priority the need to increase external funding support for faculty research and ensure that funding applications include amounts to support graduate students, regardless of the source of the funding. Although SSHRC does not explicitly provide for graduate student stipends in the way that NSERC and CIHR does, one can include graduate student stipends within SSHRC applications and this should be encouraged by the department and the Office of Research.

R14. The Review Panel recommends that the Department develop a priority list for faculty replacement in keeping with the Strategic Framework of the University. They should endeavour to recruit faculty with demonstrated research capability and the ability to obtain external grant funding. The Review Panel sees this as closely tied to the success of the graduate program.

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