

PROVOST'S ADVISORY GROUP TO INITIATE CHANGE: FINAL REPORT*

October 1993

*We should like to acknowledge the excellent assistance we have received from Anne McInnis. Her many talents were very much appreciated by all of us. Other members of the Office of Analysis and Budgeting, notably Mike Hedden and Wilf Ward, also responded magnificently to our numerous and varied requests for data analysis, and we are extremely grateful to them for all their help. Additionally, we wish to record our thanks to a number of people who kindly read an earlier draft of our report. Their comments led us to revise drastically the focus of what we were writing, and we believe the outcome to be a much improved document. Finally, we must express our gratitude to all those who took the trouble to respond to our various requests for input. A number of the many suggestions we received have been incorporated into this report.

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Introduction

In May 1993, the Provost's Advisory Group to Initiate Change (PAGIC) was established to develop a plan for fundamental changes at McMaster; the intent was to enhance the academic excellence of the institution in the face of a rapidly deteriorating fiscal environment.¹ The group, which overlapped with the membership of the President's Budget Committee (PBC), comprised Susan French, Fred L. Hall, Alan Harrison, Peter Sutherland, Alexander Darling (as a consultant), and the Provost, Art Heidebrecht, as chair. Anne McInnis acted as secretary to the group and, through her position in Analysis and Budgeting, was responsible for providing data on various university activities as and when required.

We began by reviewing the financial situation of the university; we identified a need, on an annual basis, for \$7 million to \$9 million in reduced costs or increases in revenue. This comprises:²

- \$3.5 million to \$4 million to cover the interim (that is, one-time) measures that were taken to ensure a balanced operating budget for 1993–1994 and the subsequent effects on this budget of the government's expenditure control and provincial budget measures;³
- \$1 million to \$2 million to accommodate further expected reductions in government funding;
- \$1 million to \$1.5 million for deferred maintenance and capital improvements;
- \$1.5 million to provide a continuing fund for one-time expenditures to improve efficiency, to meet costs associated with any phasing out that may occur of programmes and activities, or to bridge appointments.

As background to our deliberations on how to achieve this financial target, we noted that:

- universities will almost certainly be subject to further reductions in funding from the provincial government. It would be irresponsible complacency to expect that we shall return to a pattern of ever growing public expenditures on universities;
- in difficult financial times, universities (like all public institutions) are scrutinized more closely and are held more accountable by those providing funds (government, foundations, students, alumni, etc.), and by the public at large;
- the measures McMaster has already been forced to take have seriously eroded the quality of education and research: the evidence includes higher student/faculty ratios, fewer support staff and less money for instructional supplies, library acquisitions, graduate student support, and facilities maintenance;

¹PAGIC's terms of reference are presented in Appendix A. A detailed description of why we think change is necessary is set out in Appendix B.

²See Appendix C for further details of this financial target.

³This includes the impact on the Faculty of Health Sciences arising from operating grant reductions, but excludes those from other sources of funding, particularly the Ministry of Health.

- there has been a noticeable decline in morale at McMaster in the last several years. Support staff fear the elimination of their positions, and faculty members are pessimistic about the ability of the university to move forward. The result is a general unwillingness to contribute to university service or governance.

Despite this ominous outlook, we believe there remains scope for beneficial change. Institutions that do best in an environment such as the university faces are those that:

- (i) have a clear sense of their most important activities;
- (ii) concentrate on doing those things exceedingly well; and
- (iii) seek to continue to improve how they do those things.

Such institutions find that, by acting in this way, substantial financial savings are likely to follow. The basic thrust is to identify critical services—those that are consistent with the essential needs of their clients—and to work towards providing them in a way that meets or exceeds the clients’ expectations. In short, the members of PAGIC believe we can do better, in fewer activities, for less money.

Our aim is to make recommendations that, if implemented, will lead to an institution that focuses on fewer activities, carries them out better than is currently the case, and uses fewer resources. There are several general principles that underlie most of our recommendations. Most notably, we would cite our belief in:

- the desirability of continued devolution of the authority for decision-making and financial management;
- the superiority of incentives over sanctions as a mechanism to bring about changes that will enhance McMaster’s excellence, and to encourage the generation of revenue from non-governmental sources;
- the need for fundamental change in, and simplification of, the decision-making structures, governance and various other processes at McMaster;
- the importance of initiatives that will make us all more accountable.

Our recommendations follow, including, where appropriate, an indication of the monetary and non-monetary effects, and, when it is not clear from the text of what we recommend, the routing the recommendation must take if it is to be implemented. The recommendations are organized by category and are accompanied by detailed discussion. A summary report is also available, comprising in the main only the recommendations from this report, without any of the accompanying commentary.⁴

We should mention that we also discussed a number of matters that have not given rise to specific recommendations. A comprehensive listing of these has been provided to the Provost for further consideration.

⁴To obtain a copy of this summary, use gopher (choose item #11: University Documents, then item #3: Reports) to get the text file, or anonymous ftp to get the PostScript file (pagicsum.ps) from the pub directory.

1 Decision-making and Academic Governance

There are three major topics to be considered under this heading. The first deals with the place of financial considerations in the decision-making processes at McMaster, and affects the roles of BSCAP, PBC, and Senate. The second looks at the number of layers in our decision-making structures for academic issues, and seeks ways to remove some of those layers, in order to improve and expedite decisions and at the same time to reduce the number of committees and amount of committee time. The third topic is the structure of the senior administration: President, vice-presidents, and deans.

1 (a) Financial Considerations in Decision-making Processes

Recommendation 1.1

- That the arbitrary distinction between financial and academic decisions, which has been seen to preclude the Senate from considering financial matters, be removed. Those involved in decisions about academic programme initiatives and changes need to have clear indicators of the monetary consequences of these decisions, and these consequences need to be debated openly as part of normal decision-making at Senate and its constituent bodies.
- Monetary impact: No direct saving; potential long-term savings of unknown size from more cost-effective academic decisions.
- Non-monetary impact: Decisions on academic issues that are more fully informed on all of their consequences for the university.
- Routing: Senate Executive Committee and Chair of Senate.

Members of PAGIC are convinced that this recommendation contains the most fundamental change necessary in the decision-making structure at the university. The McMaster Act does not preclude Senate from considering financial matters; rather, it has been the practice at McMaster that Senate not address questions of finance. In order to make sensible decisions about changing (or maintaining) the way things are done at McMaster, those involved in the decisions need to have clear indicators of the monetary consequences of academic decisions and actions, and these consequences need to be debated openly as part of normal decision-making at Senate as well as at other bodies charged with academic decision-making. There has been a move in this direction at Senate in the past few years, but it has been informal and intermittent. It should be made formally part of Senate's regular procedures. This means that when proposals for academic initiatives come forward to Senate, the dean (or other individual who will control the resources) should provide a statement regarding the monetary consequences, such as sources of revenue, projected expenses, or reallocations from existing activities.

Recommendation 1.2

- That the Board-Senate Committee on Academic Planning (BSCAP) and the President's Budget Committee (PBC) be replaced by a Senate Resources and Accountability Committee (SRAC).
- Monetary impact: No direct cost saving, but it will save the time of a large group of highly-paid people who currently attend BSCAP. (Some will be on the new SRAC, but not as many.)
- Non-monetary impact: Considerable. The structure of a number of key decisions will be changed by this.
- Routing: Senate and Board of Governors.

There are two parts to the discussion of this recommendation. The first is consideration of how Senate is to incorporate its deliberation of monetary matters. The second deals with the abolition of PBC and BSCAP, and follows from discussion of the role of SRAC.

There are two ways that Senate can deal with the financial implications of its decisions: either it can rely on every committee to consider these issues as part of their normal deliberations, or it can strike a committee for which this is the primary function. Expecting every committee to consider financial implications is on the face of it an attractive alternative, as that would mean that financial matters were truly integrated into all of the continuing work of Senate and its committees. The drawback to this approach is that there is no way to ensure consistency of treatment of monetary matters, either in approach to the matter, or in decision-making criteria. That drawback seems in itself to be sufficiently important to propose that Senate create a committee whose primary task is to consider in a systematic and consistent manner the financial implications of the issues coming before Senate, and to make recommendations about those issues on the basis of their place within the overall university finances. If such a committee is created, however, it is important to make clear how it could interact with PBC and BSCAP.

At the present time, PBC's mandate is to formulate and recommend to the Board the annual budget for the university. BSCAP's mandate is to do academic planning, and as part of that to conduct regular reviews of the quality of academic programmes and departments. Because it is a Board committee as well as a Senate committee, it is expected to consider financial matters in setting the priorities for academic planning. The difficulty with this structure is that BSCAP has not dealt with actual costs of programmes, much less with how they are to be accommodated in the annual budgets; those budgets reside with PBC. On the other side, PBC does not make decisions on whether programmes or departments should be initiated or continued; those decisions reside with BSCAP. This division of responsibilities was not, perhaps, a serious problem when additional revenues could be expected to cover the cost of new programmes. The problem has developed over time as the real value of funding to universities has declined and as amendments to the funding formula have removed extra funds for growth.

In the present climate of fiscal restraint or reduction, this division hinders financially sound academic planning. It is essential in planning for new initiatives to identify what McMaster will cease doing, or reduce involvement in, to pay for the new activity. This does

not happen under the current structure. In setting up a resources committee of Senate, it is important to ensure that this can and will happen. In addition, it will be important for the new committee to conduct regular sunset reviews of programmes and activities, to see whether any should be phased out.

In addition to fixing what is currently a difficulty with the decision-making structure, there are important functions that either PBC or BSCAP currently performs that must be retained under any new structure. A short list would include the following:

- (i) PBC provides the very valuable function of serving as the body to which the President and vice-presidents must justify their revenue forecasts, and the proposed allocation of resources into expenditure envelopes. Frequently, the questions raised by PBC lead to revisions in the envelopes prior to the budgets being recommended to the Board;
- (ii) PBC has been given the responsibility for recommending to the Board the fee schedules proposed by the Administration, and of approving the fees proposed for ancillary operations;
- (iii) PBC has attempted to establish procedures for periodic reviews, but in practice it has been confined to non-academic units;
- (iv) under procedures approved by Senate and Board in 1989, BSCAP is responsible for the periodic internal reviews of departments and programmes, which have focused primarily on academic matters;
- (v) BSCAP concerns itself not only with the academic programmes and departments, but also with such items as space and facilities planning, and with the master plan for the campus.

Conspicuous by its absence in this list is the very substance of BSCAP's name: academic planning. It is our view that planning of this kind cannot be formulated effectively by a committee. Rather, it requires individual leadership. The development of an academic plan should be the responsibility of the Provost, in consultation with the President and deans. That plan should then come to Senate for approval, although not necessarily only through SRAC.

All five items in the above list can be accommodated within the terms of reference for a Senate Resources and Accountability Committee. The resulting tasks, while daunting, do not constitute an unreasonable load for the committee members. The discussion on Resource Allocation Procedures, in Section 2 of this report, is also an important component of our view of the way SRAC would proceed, although it does not explicitly enter these proposed terms of reference, which are:

- (i) to receive from the President and vice-presidents a set of budgetary models, together with estimates of income and the proposed allocation of resources into envelopes for the major segments of the university, including each of the six faculties;
- (ii) to appraise the assumptions underlying the revenue models, and to recommend an estimate of income to the Board as part of the annual budget;

- (iii) as part of the revenue model, to recommend fees, including the fee structure for ancillary operations;
- (iv) to evaluate budget envelopes in terms of the value for money, by looking at the quality of the programmes within each envelope, and the relative costs of the programmes, and, within the policies established by the Board of Governors, to recommend a budget to the President for presentation to the Board;
- (v) to ensure that the Committee has up-to-date information on the relative quality of academic programmes and of non-academic activities, either by commissioning periodic appraisals as in the past, or by requiring regular formative assessments of quality from deans and from managers of non-academic areas (in this regard, both the Ontario Council on University Affairs (OCUA) discussions of accountability and the recent report from the Senate Task Force on Educational Quality Assurance, chaired by William Coleman, are relevant);
- (vi) to report to Senate on its recommendations to the Board, and to receive comments from Senate as to the principles guiding those recommendations, for inclusion in the following year's deliberations;
- (vii) to receive proposals for academic initiatives, along with cost and revenue estimates for them, to assess proposals from the Provost or appropriate dean as to how the net costs of the initiative will be met from existing budgets, or how net revenues will be allocated, and to recommend to Senate on the disposition of the proposals; and
- (viii) to maintain an overview of the Campus Plan for McMaster in light of the annual decisions on budget and quality that have been made.

We recognize that there is a heavy workload implied for this committee, but it seems imperative to have the quality and cost information within the one committee. It would be possible to charge a separate committee with the quality appraisal task, but it would still be necessary for it to provide that information to SRAC. On balance, it seems more straightforward to have the one committee responsible for dealing with quality as well as budgets.

The composition and terms of reference for the existing President's Budget Committee are contained in the Tripartite Agreement among the Board, the Faculty Association, and the administration. Abolishing PBC will call for similar agreement among the three parties. Likewise, the abolition of BSCAP will call for the consent of the Board, as it is a joint committee of the two bodies. Composition of a new SRAC is therefore proposed as follows, to try to maintain the interests of all three affected parties, as well as recognizing Senate's interests. There should be 12 voting members, as follows:

- Four faculty members
- One staff member
- One graduate student

- One undergraduate student
- Two members of the Board of Governors
- The President
- The Provost
- The Vice-President (Administration)

In addition, there should be three non-voting members of the committee:

- The Vice-President (Health Sciences) or designate
- The Vice-President (Research)
- The Assistant Provost (Student Affairs)

It is probably useful to make explicit two aspects of this proposed committee. First, as with all Senate committees (and the existing PBC), its meetings would be closed. This is in contrast to the recommendation in *Governance and Accountability: The Report of the Independent Study Group on University Governance*, published by the Canadian Association of University Teachers (CAUT) this summer.

Second, although a committee of Senate, the initial report from SRAC on the annual budgets would go through the President to the Board, and not to Senate. In this, our proposal follows a model currently in use at other universities. One reason for this is that it is quite possible that the Senate and Board might disagree about an annual budget, or that the Senate might not wish to approve the budget recommended by SRAC. With the terms of reference as stated, SRAC recommends to the Board, and reports to Senate on its recommendations. Senate is able to comment, and to provide guidance for future deliberations, but not to delay approvals, or to develop a conflict with the Board. A second reason is equally pragmatic: many decisions take a long time at McMaster already. To ensure that a Senate meeting take place before the Board could approve the budget may unduly complicate matters given continued uncertainties and delays in provincial government announcements about university operating grants.

Two additional comments about the operation of SRAC may aid in clarifying our view of its function. First, the experience gained by the Faculty of Health Sciences in developing an effective finance committee for internal purposes should be helpful for the Senate to hear in structuring its own Resources and Accountability Committee. (It would probably be beneficial for other faculties to adopt such a committee, to work with the dean in allocating funds among departments, but we have chosen not to make that suggestion a formal recommendation.)

Second, a number of McMaster faculty members have experience working on grant selection committees for the federal granting councils. In several respects, we see the task of SRAC as being similar to that of a selection committee: balancing quality assessments with costs for a set of projects (envelopes, or departments), in light of a finite total budget. To the extent that this is a task that is different from what either PBC or BSCAP has done in the past, it will be useful to seek out and learn from the experience of those who have had to do a similar exercise.

1 (b) Simplifying Decision-making by Removal of Layers

Recommendation 1.3

- That, as a further step in the devolution of responsibilities to faculties, the final responsibility for curriculum matters be placed with the faculties, rather than with Undergraduate and Graduate Councils, and that these two councils be abolished, and replaced with an Academic Council of Senate.
- Monetary impact: Large time savings for faculty, not recoverable directly as dollars.
- Non-monetary impact: Onus is placed directly on faculties and their committees to make sensible programme regulations without subsequent quality assurance—or interference, depending on one’s point of view.
- Routing: Senate.

Undergraduate Council has three standing committees: curriculum, awards, and admissions. The heaviest load by far falls on its curriculum committee, which vets submissions from all faculties. Changes to undergraduate curriculum go through six steps: departmental committee, full department, faculty committee, full faculty (or faculty council, or both), the Curriculum Committee of Undergraduate Council, then full Undergraduate Council. Is sufficient value added at each to justify the cost of all six layers? (If one were to calculate the hourly rates of all of those involved in each committee meeting, the costs would be quite large, although it is clear that these costs cannot be recovered directly even if the committee meetings are reduced or eliminated.)

We recognize that the Undergraduate Council Curriculum Committee does add value under the present approach, in two ways. It serves as a final quality control check on proposed curriculum changes, and it looks at cross-faculty impacts of departmental proposals. It seems to us that if departments and faculties have done their job, another quality control check is unnecessary. The faculty committee should be fulfilling that responsibility adequately, in those instances in which a department has made errors in formulating programme revisions. If these two levels are letting errors through now, it is most likely because they know another level will catch them. Remove that level, and the onus will be more clearly on the initial levels to do it right the first time.

There will remain, however, the need to identify and resolve cross-faculty impacts of curriculum changes. Anecdotal evidence suggests that despite the size of Undergraduate Council, it is usually the associate deans who draw attention to these impacts at present. We propose to draw on that experience, by suggesting that at the time that departmental submissions are sent to their own faculty curriculum committee they also be sent to the associate deans of the other faculties and to the Registrar, who can vet them for what we might term side-effects. The associate deans and Registrar meet as a group already. They can serve the function of identifying and attempting to resolve these side-effects, without the need for a meeting of several dozen people as at Undergraduate Council. If that group is unable to resolve the problems, or if the proposing department or faculty is unwilling to accept their resolution, then the associate deans will refer the problem to the Academic Council, which will recommend a resolution to Senate.

Admissions criteria should be handled the same way: primary responsibility at the faculty level; inter-faculty side-effects identified by the associate deans/Registrar group; lack of resolution at that level referred by them to the Academic Council for recommendation to Senate. Thus there would be no need for the Admissions Committee of Undergraduate Council, or for the Curriculum Committee.

The Awards Committee would need to be retained, however, to participate as needed in the making of annual awards and to scrutinize the wording of proposed new awards. The question then arises as to whether this should be a subcommittee of the Academic Council, or directly of Senate. This is of course a matter for Senate to decide, but in our collective recollection, almost all of the recommendations from Undergraduate Council's Awards Committee have been rubber-stamped by the Undergraduate Council. Hence there seems little to be gained by requiring the Awards Committee to report to the Academic Council, rather than directly to Senate. If the Awards Committee does not report to it, then the Academic Council need not hold regular meetings, but instead can meet only as the need arises, which again should reduce the amount of meeting time.

Graduate Council does not have any standing committees. Graduate curriculum proposals appear on the Graduate Council agenda, but are almost invariably rubber-stamped without discussion. In this case, it would simply be a recognition of current practice to make faculty approval the final step in the approvals process. It is appropriate in this instance as well to allow for the resolution of inter-faculty side-effects via the Academic Council, but there needs to be a different mechanism for bringing issues to it. We would suggest that the graduate curriculum proposals of each faculty be copied to the chair of the graduate curriculum committee of the other faculties, for review and possible discussion of parts of it at a faculty Committee meeting if necessary.

If problems arise, they should be referred to the Dean of Graduate Studies, to convene a meeting of the appropriate faculty committee chairs. Only if the problem cannot be resolved at that level would it be referred, by the Dean of Graduate Studies, to the Academic Council.

Instead of using standing committees, Graduate Council creates ad hoc committees to deal with specific problems as the need arises. This is quite a reasonable procedure, and can still be followed under the auspices of the Academic Council. The Dean of Graduate Studies would be a member of this council, and could request the formation of an ad hoc committee for a specific problem.

We have not specified the terms of reference or membership for an Academic Council, as was done in the previous recommendation for a Senate Resources and Accountability Committee. This is in part because we have been further removed from the matters of Undergraduate and Graduate Council than from matters of PBC and BSCAP, and in part because there are other aspects of the work of these Councils that Senate may wish to consider before making any changes. For example, Graduate Council has a role to play at present in the 12-step approval process for new graduate programmes. Is there a continued need for that role, or can it be replaced by actions of the new SRAC? Most important, the existence of the two councils has meant that Senate has not had to deal with any details of existing undergraduate or graduate programmes. Creation of an Academic Council is not meant to change that substantially, but it will change it in some respects. Senate may wish to ensure that any change continues to limit the extent to which Senate itself becomes involved. Despite the tentative nature of our discussion of this recommendation, there are clearly some

opportunities in the areas of post-professional education, and in promoting the seamlessness of McMaster's range of activities, that would be better served by a single Academic Council than by the present separation of undergraduate and graduate matters.

Recommendation 1.4

- That Senate appoint an ad hoc committee to review the numerous quasi-judicial hearings and appeal committees that now exist in all areas of campus life, to see if they can be rationalized in two respects. First, there is clearly at present overlapping jurisdiction among the many avenues for pursuing a grievance. It should normally not be possible for more than one avenue to be pursued, but that is not presently the case. Second, within each hearing procedure there are often several stages of appeal of various kinds. Are all of these necessary?
- Monetary impact: Potentially large time savings for faculty and hearings secretariats; not necessarily recoverable as \$s; potential reduction in need for legal counsel.
- Non-monetary impact: Clarity of procedure; removal of potential for double jeopardy.
- Routing: Senate, through Senate Executive.

The committees we are addressing in this recommendation are those such as the Senate Board for Student Appeals, or the hearings committees on academic dishonesty and breaches of the student code of conduct. For the most part, the rationale for this recommendation is contained within it, and since it is only a call for a committee to look into an issue, there is less to be said about it than about the earlier recommendations in this section. One suggestion we have heard, which should certainly be of interest to any committee looking into this, is to give more responsibility to the students themselves to adjudicate complaints such as those relating to academic dishonesty.

Two other points arising from our discussions are worth emphasizing. First, there is nothing within our current procedures that restricts the pursuit of a complaint to one particular channel, with the result that in the recent past the same complaint has been taken through several avenues. This is wasteful for both the complainant and the university. Furthermore, it leaves open the possibility of contradictory outcomes, which would be an embarrassment.

Second, in almost all of these proceedings, the university is calling upon persons with no judicial training to act in a quasi-judicial role. Some do it very well indeed, but some do not. Within the past three years, the university has lost two important cases in provincial courts because of procedural errors in our internal handling of these types of proceedings, one on academic dishonesty and the other a dismissal case. There is a need to simplify and clarify the procedures such that the likelihood of loss on procedural grounds is greatly reduced. One of the main reasons for having internal procedures for handling complaints is so that those complaints do not have to go to the regular courts for resolution. If the procedures are such that people take us to court because of them, something is definitely amiss.

1 (c) The Structure of the Senior Administration

Our discussion of this topic focused on the roles and responsibilities of the Vice-President (Research), the Dean of Graduate Studies, the Executive Director of Development and Public Relations, and to a limited extent, the Provost. Although we spent a considerable amount of time discussing this issue, we were not able to come to a consensus on any grand restructuring or realignment of responsibilities. Some of the key issues we discussed are listed in what follows.

- (i) The current activities of the Vice-President (Research) (VPR) do not seem to match very closely with the original Senate discussion of the position. The current review of that position should be expected to realign the description more closely with reality.
- (ii) There is considerable overlap between the VPR's activities and those of the Development Office, in that both are concerned with Advancement. Is there some better way to structure the positions to take advantage of this overlap?
- (iii) The Dean of Graduate Studies (DGS) also has responsibilities relating to research. Should there be a shifting of tasks between the VPR and DGS?
- (iv) Is it still necessary for both the Provost and DGS to sit on all faculty Tenure and Promotion Committees, as well as on the Senate Appointments Committee?
- (v) What is the best way to structure internal responsibilities within the senior administration with regard to our external contacts with government agencies such as the Ministry of Education and Training, the Ministry of Health, and the federal granting councils?

The first two recommendations on this topic arise because of our inability to resolve all of these issues, the clear impression that few people know how the members of the senior administration spend their time, and our concern that the current review of the position of Vice-President (Research) is being conducted in isolation from these issues.

Recommendation 1.5

- That the President and vice-presidents each provide a brief annual report to the university community on their efforts and accomplishments, to be presented at the September meeting of Senate, and made widely available.
- Non-monetary impact: Explicit recognition of the accountability of the senior administration to the community, as well as to the Board; improved understanding and appreciation by the community of the activities of these persons; provides opportunity for these individuals to draw attention to issues for the coming year as well.

Recommendation 1.6

- That the Human Resources Committee of the Board of Governors review the structure and responsibilities of the President and vice-presidents, with the intention of revising

that structure in recognition of the changed operating environment for universities. The Ketchum report on advancement should be considered as part of that review.

- Non-monetary impact: The potential for clearer lines of responsibility and accountability.

We were able to reach agreement on a number of other issues pertaining to this topic, resulting in three specific recommendations.

Recommendation 1.7

- That the position of Dean of Graduate Studies be renamed Associate Provost (Graduate Studies and Academic Staff), with an altered range of responsibilities. The position would continue to report to the Provost and to have responsibility for the School of Graduate Studies and thereby for the quality of graduate programmes. It would continue to have the responsibility that the Dean of Graduate Studies now has for faculty members' development (i.e., participation in deliberations on tenure and promotion, faculty appointments, career progress/merit and research leave applications); in addition, responsibility for overseeing those matters relating to faculty appointments currently handled by the Provost's office would now be assigned directly to this position.
- Non-monetary impact: Clarifies role with respect to participation in tenure and promotion committees, faculty appointment committees, chair selection committees, etc.; avoids confusion of roles with faculty deans; frees up Provost's time by taking on the overseeing within the Provost's office of matters pertaining to academic staff.
- Routing: Senate Committee on Appointments.

BSCAP has established a panel to review the academic and administrative structures of graduate education at McMaster with an eye to assessing how these help or hinder our ability to meet the objectives outlined in our strategic plan. This panel, chaired by Michael Atkinson, has recently issued a preliminary report in the form of a discussion paper.

While this discussion paper makes no specific recommendations, it does comment extensively on the important role of the Dean of Graduate Studies, including the significant participation of that position in academic personnel matters, which include faculty appointments, tenure and promotion, career/progress merit, and research leave recommendations. The above recommendation is intended to stress the leadership role that this position has in both graduate studies and academic staff matters, working with and directly accountable to the Provost. Retitling the position as Associate Provost also serves to distinguish the position as being different in kind from that of faculty deans.

A new dimension of the position, namely that of overseeing faculty appointments within the Provost's office, deserves some comment. Essentially all appointments aspects, including those formerly handled in the President's office, are now handled by the Provost's office. As the university-wide oversight responsibilities of the Provost have increased substantially, it is no longer feasible for the Provost to give the degree of scrutiny to these matters that they deserve. This recommendation will enable these matters to be handled effectively

without adding an additional senior administrative position. While there are additional responsibilities being added, it should be noted that the following recommendation will have the effect of rationalizing the administration of graduate studies, so that this senior position will be less burdened by day-to-day administrative matters relating to graduate studies.

Recommendation 1.8

- That the Provost establish a task force to undertake a study of the procedures and administrative functions of the School of Graduate Studies, including, but not restricted to, payroll and admissions functions.
- Monetary impact: Substantial impact due to reduction in administrative responsibilities; order of magnitude of savings is \$200,000.
- Non-monetary impact: Simplification of administrative processes due to less centralized involvement; enables Associate Provost (Graduate Studies and Academic Staff) and supporting staff to concentrate on planning and leadership rather than be weighed down by administrative tasks.

The Atkinson discussion paper on graduate studies, mentioned above, makes some mention of the administrative functions of the School of Graduate Studies. It suggests that greater responsibility for the actual administration of student affairs should be transferred to the faculties and departments, in recognition that “the seasonal burdens of administration often overwhelm other, potentially more important, tasks.” While PAGIC has not had the opportunity to review these administrative functions in detail, we concur that there should be less centralization and more simplification. Payroll and admissions are aspects that have been mentioned frequently as areas of concern, but these are not the only functions that should be examined by the task force whose establishment is being recommended.

Recommendation 1.9

- That the current ad hoc position of Academic Assistant to the Provost become a formal position of Assistant Provost (Undergraduate and Lifelong Learning), with appointment through Senate for a three to five year term.
- Monetary impact: No additional cost to that already being incurred in the Provost’s envelope.
- Non-monetary impact: Enables Provost’s responsibilities for these two areas to be delegated formally; continuity of leadership through longer appointment and formal recognition by institution; facilitates institutional focus, which might otherwise be lost with elimination of Undergraduate Council.
- Routing: Senate Committee on Appointments.

For most of the past decade, the Vice-President (Academic) has found it advantageous, if not essential, to have the assistance of a faculty member for the delegation of a variety

of tasks. During the past several years, the Provost and Vice-President (Academic) has appointed an individual (initially William Coleman, now Fred L. Hall) to whom he has delegated the overseeing of the undergraduate aspects of the Provost's portfolio, including direct responsibility for the interdisciplinary units that currently report to the Provost. More recently, responsibility for direction of lifelong learning, which is highlighted in the strategic plan, has been allocated to that position, which is informally titled the Academic Assistant to the Provost. PAGIC concurs with the need to formalize this position to include accountability to the Senate (through the appointments process) with the title of Assistant Provost.

Recommendation 1.10

- That the stipend for department chairs be increased significantly, with a component based on performance in carrying out the responsibilities of the position.
- Monetary impact: Added costs for each department, but these costs are within faculty envelopes (as a trade-off against other expenses) rather than increases to the envelopes.
- Non-monetary impact: Significant improvement in morale of chairs; encouragement of leadership by chairs; improved prospects of attracting qualified faculty to take on chair positions.
- Routing: Provost, President, Remunerations Committee.

Devolution of responsibilities to departments has meant a change in the expectations of what a chair should do, and consequently an increase in the load placed upon that individual. As was made clear by the summary of interviews with chairs in the recent report to Senate on terms of reference for chairs, one of the major irritants for those chairs is that current stipends (\$3500 for department chairs) are not commensurate with the responsibilities. It has often been suggested that the low stipend discourages some good candidates from being willing to consider the position. An increase in the basic stipend is certainly warranted. In addition, the recommendation incorporates explicitly the idea that those who provide effective leadership for their department can be recognized with a component for that performance in their next annual stipend.

2 Resource Allocation

This section contains two kinds of recommendations. The first set deals with the overall structure of a procedure for calculating the costs and revenues accruing to each academic department or activity, and with the place for this information in setting budget allocations. This part ties in closely with the proposal for a Senate Resources and Accountability Committee (SRAC) described previously. The six recommendations in this set are presented first, followed by a discussion of them as a group. The second kind of recommendation consists of three proposals, which fit within this overall structure but can also be considered independently.

Recommendation 2.1

- That the Senate and Resources Accountability Committee (SRAC), when debating new initiatives, assessing programme or unit effectiveness, and reviewing the annual budget, consider: each unit's contributions to the university's goals (undergraduate programme quality, graduate programme quality, research, and interdisciplinary contributions as appropriate); and the relative costs of the programme or department. A balancing of the quality of contributions with relative costs and expected net changes in these should be understood to be the mandate of SRAC. Consistent with that, SRAC should have the authority to recommend the closure (or amalgamation) of programmes, units, or departments when the contributions are not consistent with the costs. It should also be able to provide funding considerably in excess of the average to reward and maintain excellence.
- Monetary impact: No direct impact.
- Non-monetary impact: Improved resource allocation decisions due to the explicit evaluation in one place of clearer cost information together with quality assessments.
- Routing: Senate By-laws committee in setting up the new Senate Resources and Accountability Committee.

Recommendation 2.2

- That, in order to provide a clear and consistent statement of the relative costs and revenues of academic programmes, a measure based upon the total direct costs per Basic Income Unit (BIU) taught be adopted. (Details regarding the calculation of that measure are described in a background paper to the full report.)
- Monetary impact: The only direct impact is likely to be a minor additional cost to Analysis and Budgeting to compute this, but the necessary information is already regularly collected. The increased work would be less than a person-week. Longer-term potential savings from the use of this information are not quantifiable in advance.
- Non-monetary impact: Considerable. Knowledge of these numbers should make a major change in resource allocations.

- Routing: Analysis and Budgeting, SRAC.

Recommendation 2.3

- That this measure of relative costs per BIU be the focus of any comparison of teaching loads across the campus. Consequently, information on these relative costs should be widely distributed, and not closely held as in the past. An appropriate level of distribution might be to members of Senate, as part of the annual SRAC report. Implementation of this recommendation is immediate. As an illustration of the method, Appendix D of this report includes information on relative cost calculations using data for the 1991–1992 academic year. (These were the most recent data available when we began our investigation of relative costs.)
- Monetary impact: No direct impact.
- Non-monetary impact: Greater clarity about the annual budget, and much more widely shared information, which can be expected to result in more widespread and better-informed debate about the university budget.
- Routing: Senate and SRAC.

Recommendation 2.4

- That the move to this new approach, based on contributions balanced against relative cost, take place immediately, that is, for the 1994–1995 budget year. Any needed shifts in resource allocation can be addressed directly, as historical anomalies, and plans made for moving to the new levels over a small number of additional years.
- Monetary impact: Potentially significant in the long-term; target of \$1 million annually by the end of 1995–1996.
- Non-monetary impact: There will be a steering effect for either redirection of resources, or for the generation by particular units of additional revenue sources.
- Routing: PBC until SRAC is established.

Recommendation 2.5

- That deans use the figures on relative cost per BIU to elicit changes in the approach to teaching of those departments identified in the background paper (referred to above) as incurring a much higher cost for a unit of teaching than is normal; and that SRAC hold the deans accountable for this over the next few years.
- Monetary impact: Between \$500,000 and \$1 million annually, by the end of 1995–1996, either as reduced costs or increased revenues.
- Non-monetary impact: Improved academic programmes.
- Routing: Deans, Provost, PBC.

Recommendation 2.6

- That support from the university's operating budget for institutes, centres and journals be allocated according to the criteria set out in Recommendation 2.1, and that there be a reporting system that shows clearly the total level of such support for each. When this is implemented, all such existing units should be reviewed, and decisions made with respect to their continuation, especially with regard to claims for eventual self-support, made at the time of their founding.

There need to be clear incentives for both individuals and organizational units that will encourage optimal contributions to McMaster's objectives, rather than trying to achieve these objectives by centralized direction and control. In recognizing the vital importance of developing improved resource allocation procedures, we are building on changes to the budgeting procedures that were introduced for the 1992–1993 financial year. In the report on that budget in October 1992, six objectives were identified, all of which are still germane to the changes we are proposing. Those were that the budgeting process should:

- (i) support the agreed academic objectives and priorities of the university;
- (ii) encourage ownership of and accountability for decisions at the appropriate level;
- (iii) encourage innovation and self-reliance;
- (iv) encourage long-term thinking;
- (v) increase predictability in order to improve planning and decision making; and
- (vi) develop a sense of fairness in allocation through a more open process.

Although considerable progress has been made along these lines, much of the budgetary allocation is still done on a historical basis. It is PAGIC's position that any new system needs to incorporate specific recognition of the revenue consequences of actions by the various units of the university. In this regard, the most important issues are undoubtedly the provincial funding formula, and the Basic Income Unit (BIU) for student enrolment on which it is based, together with tuition revenues. Implementation of the above recommendations will allow these financial issues to be made explicit. Although we all agreed on the importance of these types of recommendations, we also recognized and discussed three potential problems with their implementation, which should be brought forward for general discussion: potential adverse impact on collegiality and cooperation; technicalities of corridor funding that may make use of the dollars/BIU measure slightly misleading; and the transitional problems in making shifts of resources in moving from a historical basis to this one.

It is possible that making explicit the criteria and especially cost factors underlying resource allocation decisions will lead to either increased ill-will or decreased cooperation among faculty members. In particular, calculations showing the cost per BIU in different programmes or departments may make people less willing to either take on service teaching (if they see insufficient return for it), or to send their students to other departments for courses (on the grounds that they need the BIUs in their own department). Either of these would be contrary to McMaster's stated objective to increase interdisciplinary cooperation. On the

other hand, there is already grumbling about different teaching loads across the campus, and a number of departments are limiting the number of students they will take from outside their own programmes. The procedures for calculating costs per BIU focus directly on how to equitably take into account service teaching. Providing explicit information about teaching loads in a way that is tied directly to their consequences for university income should have at least one of three consequences: improve collegiality by showing that we are all in the same boat; inform the debate about unequal loads so that it can be constructive; or at least focus the grumbling on the right places. In sum, we recognize that there is a risk in taking this approach, but believe the risk to be small, and the benefits to be large.

The second potential problem is that the technicalities of corridor funding may make use of the dollars/BIU measure slightly misleading, in a way that could lead to incorrect decisions being made. Under corridor funding, McMaster receives a specific grant from the government for an agreed enrolment. If enrolment goes above that level, the grant does not increase. If enrolment falls more than 3 per cent below the agreed level (the corridor midpoint), the grant is reduced. The problem arises first from the fact that McMaster is above its enrolment corridor, with the result that some students do not lead to BIU funding from the province. The only income the university receives for these students is their tuition fee. The second cause is that not all of the corridor enrolment receives full BIU value, although this difficulty will gradually be removed by the province. To overcome this problem, we also investigated an approach that compared the direct costs of operating an academic department with the dollars of revenue accruing to the university from its activities. This approach involved allocating a proportion of the excess (i.e., above the corridor) enrolments to each department, on the basis of the faculty total, and calculating differential income for the excess tuition over and above the corridor enrolment. The results were not appreciably different, at either the faculty or department level, from those calculated on a dollars/BIU basis. Since the latter makes more obvious the relationship with enrolments, we have chosen to use it. Either approach would be equally useful for resource allocation.

The final issue addresses the transitional problems in moving from a historical basis for resource allocation to this proposed one. For the sake of the university's financial health as well as the morale of those deserving of additional resources, it is important that the transition to the new allocations be accomplished in as short a period as feasible. If this does not happen, there will be little benefit to the university from the new system. Other universities making similar changes have done so in a variety of ways. For example, budgets have been computed using both the old and the new methods, and then a weighted average of the two used, where the relative weight for the new approach is increased over several years from a small percentage of the final sum to 100 per cent. Alternatively, new procedures have been used immediately, but surpluses or deficits for the first year or two appear on paper only, and are not accrued. Our proposal for phasing in this new approach blends both methods, partly in recognition that ours is not a formulaic approach to resource allocation. Resource allocations will be done on the basis of the new scheme, but special allotments (both positive and negative) will be used for the first two years to ease, yet make explicit, the transition from the old to the new procedures.

The objection may well be raised that it is impossible to change departmental costs by very much within a year or two, because 85 per cent of the costs are salaries. There are three responses to this objection. The first is that the cost per BIU can be decreased both by

decreasing costs and by increasing BIUs taught. BIUs taught, in turn, incorporate not only the students enrolled in a department's programmes, but also students in service courses. Imaginative course or programme offerings can help to resolve the problem. The second response is that the costs charged to the university can be reduced by revenue generation for the department through short courses, post-professional courses, or other elements of lifelong learning offered on a full cost-recovery basis, as discussed in the section on revenue generation.

The third response is not constructive, as the other two are, but must be faced in the event that neither of the first two happen, or at least not in full enough measure to resolve the problem entirely. The situation can be summarized concisely. The university faces the need to reduce its costs overall, as provincial revenues are cut back. Some of this reduction will have to come from faculty salaries, since they constitute the major portion of the budget that has not yet experienced serious reductions. If the reductions cannot be achieved through the procedures outlined in the section on faculty career development and remuneration, they will need to be achieved through reductions in faculty numbers. It makes more sense to find this in departments that are expensive relative to their contributions than in those that are inexpensive. Hence, whatever approach is taken, these numbers on relative costs are important to resolving the financial problems, and they need to be implemented quickly.

It is our view that the procedures summarized here, and explained in more detail in the background paper, constitute fair and reasonable procedures to identify explicitly the full costs of operating each academic unit, and to set these against the revenues accruing to the university from the instructional and research activities of the unit—for the academic side of the university. On the administrative side, while the cost can be easily identified, it has proven more difficult to find a common measure of workload. Without that, we have not been able to provide a comparable basis for making budgetary decisions for the two aspects of the university. Some comparable data for administrative units are available at a macro level from the Council of Ontario Universities (COU). In some areas (e.g., Library and Physical Plant) bench-mark data may also be available. Similar analysis of the administrative units should still be sought, but will take longer than the time limit we have set ourselves.

The core of our first recommendation is that SRAC should engage in a balancing of the quality of contributions with relative costs and expected net changes in these. Two submissions to PAGIC suggested a different methodology: rank every activity (in one; the other said every individual) in terms of their contribution to the core activities of the university (does this activity add value in the production of graduates?), then allocate the available money moving down the list until it is all allocated. Anything not funded is dropped. (This is a crude rendition of what they suggested. Each took two pages to describe the idea.) We have not followed that suggestion. We think that balancing costs and contributions is a better approach. It allows for continued funding, but at a reduced level, for activities that contribute to the university's goals, even if their contribution is lower than that of another unit.

The fifth recommendation in this set (above) deserves some additional comment. In developing the methods for calculating dollars/BIU, it seemed both appropriate and sensible to work with them on a departmental basis; those numbers appear in the background document. However, it does not seem sensible to have SRAC become involved in micro-management, by setting the budget for each department. That would drastically weaken the role of the

faculty deans, whereas we wish to strengthen their role. They need to have the flexibility to provide resources at greater than the average level in their faculty to departments who they judge merit it on quality grounds. Fluctuations of this kind within a faculty, however, might be expected to be within 20 to 50 per cent above or below the average dollars/BIU. In addition, faculty deans may find it appropriate to look at cost figures from other universities for comparable departments or programmes. Departments whose numbers are higher than such benchmarks need either special justification, or more likely, an action plan designed to bring the dollars/BIU more in line with its sister departments. In short, while the faculty deans should continue to have considerable discretion regarding the allocation of their budget to their departments, they are accountable through the Provost to SRAC (and the Board) for the results. The recommendation is intended to make that explicit, and to set a reasonable time frame for bringing about change, recognizing that it cannot be done in just a few months.

The three additional recommendations regarding resource allocation, which can stand independently of the previous set, are as follows.

Recommendation 2.7

- That SRAC set aside \$1.5 million from future budgets to provide a continuing fund for one-time expenditures to improve efficiency, to meet costs associated with any phasing out that may occur of programmes and activities, or to bridge appointments.
- Monetary impact: Would be a reduction of funds available to the specific academic envelopes at the initiation of the fund, but since this would be used for academic purposes there would be, in total, no net cost to the academic units.
- Non-monetary impact: Provides the flexibility to be able to consider and implement different ways of doing things, especially those that can result in long-term savings from initial investments.
- Routing: President's Budget Committee (or SRAC).

It is as important to make clear what this fund is not intended for as it is to state its purpose (which the body of the recommendation does). It is not intended to provide start-up costs for new initiatives. After their initial start-up costs, such initiatives would represent a recurring cost to the university. Funding for new activities needs to be justified prior to their inception, in terms of the considerations discussed with respect to recommendations 2.1 through 2.6. It would be a mistake to allow new activities or programmes to be funded at the start from a separate pot of money, and then in a subsequent year to attempt to move them onto the regular operating budget.

The fund has been set somewhat arbitrarily at one per cent of the current operating budget. The magnitude of the fund is open to discussion, but it needs to be large enough to allow consideration of significant initiatives. One of the most likely, at least within the foreseeable future, is to aid in short-term bridging appointments, when those are appropriate, in view of the large number of retirements anticipated over the next decade.(approximately 20 per cent of faculty).

Recommendation 2.8

- That SRAC set aside \$1 million to \$1.5 million from future budgets to:
 - (i) pay for the deferred maintenance of buildings and facilities;
 - (ii) avoid the need for such deferrals in future.

McMaster University, like many others in North America, expanded rapidly during the 1960s and 1970s with a result that many of our buildings date from that era. In the early years, little maintenance is required for a new building, but different components of buildings have different life expectancies. Many universities, including McMaster, have failed to provide adequate funds for maintenance, which is a continuing operating cost. We have already reached a point where various components of buildings are coming to the end of their natural life and have to be replaced. One list that was compiled three years ago listed items of deferred maintenance totalling over \$12 million. Since then a more systematic review has been started; the findings to date indicate that the problem is significantly larger, and it will grow unless action is taken, because many of our buildings are between 20 and 30 years old. Within the last year we have had a number of critical incidents and so it is essential that the university make a significant provision in its operating budgets for maintenance. Failure to do so will only result in far larger costs later.

Recommendation 2.9

- That SRAC change the envelopes for graduate scholarships and teaching assistantships (TAs) such that the graduate support funds remain the responsibility of the Associate Provost (Graduate Studies and Academic Staff), and money for instructional purposes becomes part of faculty envelopes. This change would allow departments to use graduate support funds to provide additional TAs, should they so desire.
- Monetary impact: No direct savings in the TA envelope but will enable the faculties to utilize their overall resources more effectively; likely to be savings through need for less administration in the School of Graduate Studies.
- Non-monetary impact: Enable faculties to have direct control of more of their instructional resources; eliminate a major administrative task that occupies a considerable proportion of the time of the associate deans in the School of Graduate Studies as well as frustrations at departmental and faculty level.

The first step in making this change will be to desist in separately earmarking, at the level of PBC, one set of moneys for graduate scholarships, a second set for graduate TAs, and a third set for part-time instructional use, including all non-graduate-student TAs. This central control of detailed use of funds hinders effective use at the departmental level. In making this recommendation, we recognize that operating grant money cannot be used for graduate scholarships. Hence it will be necessary in the future to continue to ensure that money spent on graduate scholarships comes from other sources. It should not, however, be necessary to specify a priori what can be spent on TAs in order to ensure that this requirement is met.

Implementation of this recommendation would be as follows. First, teaching assistantship funds would be allocated to departments on the basis of a number of teaching assistant positions defined by instructional need, multiplied by the current undergraduate TA rate. This portion of the money would become part of the regular faculty envelopes, to be allocated by the faculty deans. It would consist of some of the money that currently appears under the part-time instructional budget, and some that is currently in the graduate TA budget.

Second, allocate graduate support money to departments separately, presumably on the basis of graduate programme strength. In order to ensure that the graduate support money is used explicitly to enhance the quality of graduate programmes, the allocation of this money would be the responsibility of the Dean of Graduate Studies (or Associate Provost). The money in this envelope would consist of what is currently the graduate scholarship budget, together with that portion of the graduate TA budget that is due to the difference between the graduate student rate of pay and the undergraduate rate. The departmental allocation of graduate support money could be used for scholarships, for paying the supplement necessary to hire a graduate student over an undergraduate for TA work, or for paying the full graduate student TA rate if a department felt that it was a better use of this money to increase TA positions over the number they received through the faculty envelope, rather than providing a scholarship.

One potential drawback to this proposal is that some departments stand to lose money that is currently available to them via the earmarked graduate TA money, since that is at present allocated primarily on the basis of graduate programme strength. This is a risk for those departments that currently export TAs, such as many of those in Engineering. If they have graduate students who are not successful in obtaining a TA in another department, the department stands to lose that portion of the support that is enough to pay an undergraduate TA. There are two positive consequences that could occur under this scenario. One is that the best graduate TAs will be encouraged to seek positions outside the department, so that receiving departments will be eager to hire them. The other is that the graduate student should be able to finish one term sooner, which will itself reduce the total money needed to support the student. (For example, in Engineering, a student can hold a TA for two years of a Master's programme; four terms of TA work would come to a total of 520 hours. That is equivalent to a full 13 week term, of 40 hours per week. Hence a student with no TA could well be able to finish one term earlier.)

A second potential drawback is that there could be a net reduction in the money available to support graduate students, with a consequent reduction in overall graduate programme strength. This would occur if the departments that will, under this plan, be receiving more TA funds than they do at present (e.g., Mathematics, which currently imports graduate student TAs from Engineering and Physics) choose to hire undergraduates or non-students rather than graduate students. It will be necessary to monitor the total amount of funding going to graduate students, to ensure that there is not a significant shift of resources away from the graduate enterprise. In order to accomplish this easily, it will probably be necessary to change the accounting procedures for TA and graduate student support.

Offsetting these potential drawbacks, the proposed approach offers several advantages, not the least of which is that it would probably lead to the creation of additional TA positions, which would help improve undergraduate instruction. Under the existing system of three separate envelopes, there is (in accordance with provincial regulations) no flexibility to spend

TA money on scholarships—but there is also little or no flexibility to spend scholarship money on TAs, about which there is no provincial restriction. There are several departments, such as Biology and Economics, that would prefer to have additional TA support, rather than have students who hold scholarships but do no TA work. This new scheme would encourage that. It would also facilitate greater use of fourth-year undergraduates as TAs where that is appropriate but is currently difficult to implement due to the separate envelopes.

In implementing this change, it will also be important to extend to departmental use of their graduate support allocation the provision allowed by the Board of Governors for a three-year time frame for achieving balanced budgets. That is, if due to the uncertainties of making graduate offers in small units, their budget is over- (or under-)spent in one year, they would have the next two years to bring this particular portion of their budget back into balance. Both positive and negative carry-overs would be allowed, but for negative ones, there would have to be a plan to remove them in the next two years.

Recommendation 2.10

- That a small group be established to investigate the effectiveness of the current distribution of undergraduate scholarships, as contrasted with a procedure whereby funds for these scholarships are allocated to the faculties, that would be responsible for awarding them.
- Non-monetary impact: Scholarships are awarded by McMaster in recognition of outstanding achievement by the student, but they are also awarded in order to enhance our recruitment of high-quality students. A major change in the way they are awarded may improve the achievement of the second objective.
- Routing: Senate, to delegate as appropriate.

One of the consequences of the current approach to the awarding of scholarships is that a much higher proportion of entering students in the Arts and Sciences programme receive scholarships than in any of the faculties. Yet this same programme has the highest ratio of applicants to places, and the highest admission cut-off average. It is reasonable to question whether the university is obtaining the best value for money from this use of the scholarship funds. If each faculty has an allotment of scholarship funds to use in its own recruitment effort, it is entirely possible that the increase in admission averages in the faculties would more than offset any reduction (and there may be no reduction) in the quality of students entering the Arts and Sciences programme.

The preceding discussion is written in terms of the Arts and Sciences programme simply to draw attention to the extreme case. It has been a matter of concern for some years that the distribution of scholarships across faculties is quite uneven, and various steps have been taken to deal with this. The recommendation suggests putting more emphasis on the value, in terms of quality of students recruited, that the university obtains from the scholarship funds (rather than on rewarding students for good high school performance), and seeing how to deal with scholarships to achieve this changed emphasis.

3 Revenue Generation

3 (a) Education

Recommendation 3.1

- That
 - (i) faculties and departments develop and offer programmes, courses and seminars, distinct from those currently supported through government funding, that would be fully supported from the tuition fee charged;
 - (ii) most of the income from the tuition fees be received by the department offering the course, which would pay a per-student levy for administrative costs and would pay for other services according to the normal schedules; and
 - (iii) such educational activities be directed at groups such as professionals, Canadian companies and organizations, international students and foreign governments and agencies.
- Monetary impact: The target is an increase in revenue of \$500,000 by 1995–1996.
- Non-monetary impact: This recommendation is designed to give a strong incentive to academic departments to develop courses and programmes such as those identified as post-professional programmes in the Strategic Plan. This recommendation could have an impact on the departments that choose to participate, because the revenues that they generate will accrue to the department. Raising revenue should be more attractive than simply reducing expenditures and cutting back activities.
- Routing: The President's Budget Committee (PBC), and in future years the Senate Resources and Accountability Committee (SRAC), should consider this recommendation and decide the appropriate charge for the administrative cost.

Recommendation 3.2

- That the Centre for Continuing Education
 - (i) provide assistance to departments that develop and offer programmes and courses fully supported by tuition; and
 - (ii) contribute towards the indirect costs associated with its current activities, starting in 1994–1995.
 1. Monetary impact: The target is a contribution of \$100,000 towards indirect costs, starting in 1994–1995.
 2. Non-monetary impact: More assistance and service to departments in support of Recommendation 3.1.
 3. Routing: PBC.

Fees for regular undergraduate and graduate degree programmes are regulated by the Ontario government. For many years non-credit courses and programmes have been offered by universities on the basis that they must be supported by tuition revenues. At McMaster University such courses and programmes have been offered by the Centre for Continuing Education. In recent years the revenues have exceeded the direct costs of the centre and the instructional costs so that a modest reserve has been built up. The centre has not been charged the indirect costs associated with the provision of instructional space or other costs such as the services provided by the Registrar's Office and Financial Services.

Further opportunities exist for offering programmes and courses that are not subsidized through the operating funds provided by the Ontario government. Revenues from such activities may come either from tuition fees or from sponsoring agencies with which a contract is developed or through some combination of the two. At a minimum the revenues should cover both the direct and indirect costs of the activities. We believe that departments should be seeking to go beyond that and generate income to support the general activities of the department.

The Strategic Plan of McMaster University recommended that this course of action be followed. In making this recommendation PAGIC wishes to push the project along. We note that recently BSCAP recommended that the possibility of doing this for the master's programmes in teaching (MA(T), MSc(T)) should be explored.

The following examples are designed to indicate some of the possibilities:

- (i) professional programmes: McMaster has offered the Primary Health-Care Diploma on this basis for a number of years. A number of other universities have offered Executive MBA programmes.
- (ii) overseas: McMaster's School of Nursing has participated for many years in the Aga Khan project. Similar options are being explored.
- (iii) cooperation with Continuing Education: The School of Business provides instruction, on a full-cost basis through the Centre for Continuing Education, that is the same as some degree courses.
- (iv) developing trends: In 1992 the Ministry of Colleges and Universities (MCU) announced that it would be withdrawing financial support from some courses taken by teachers who will have to pay full-cost tuition in future. In the correspondence the Ministry indicated that the more general issue of financial support to courses taken by professionals was under review.

The Centre for Continuing Education has expertise that could be used to assist academic departments that wish to undertake these ventures. The departments and the centre should enter into suitable arrangements such that the centre provides such assistance on a fee-for-service basis. Some departments may wish to use the centre in this role on a continuing basis and this could be a source of revenue to the centre. The Centre for Continuing Education should continue its current activities, but the centre should be making a financial contribution to the general operations of the university.

3 (b) Research

Recommendation 3.3

- That increased incentives be provided to researchers and department chairs, to encourage an increase in the amount of contract-research funding.

Recommendation 3.4

- That the levels of overhead and indirect cost charges applied to contract research and research grants from sources other than the federal granting councils be increased to enable the full recovery of overhead and indirect costs.
- Monetary impact: An increase of overhead of \$500,000 by the end of financial year 1995–1996; additional funds available for research, including the support of graduate students.
- Non-monetary impact: Improved morale of researchers involved in contract research, both through the additional funds available for research and the recognition of the importance of this research through the incentives; improved service to the external community.
- Routing: Vice-President (Research)

It is clear that McMaster has a capacity for conducting contract research that goes significantly beyond the current level of involvement in that activity. It is our sense that the major reason for this situation is that there are insufficient incentives in place for researchers to make the significant effort that is often involved to generate research contracts. Up until the very recent past, funds from the federal granting councils have been readily available so that most researchers did not need to consider other sources of funding. That situation has changed markedly in the past few years and we have not changed our policies accordingly.

One possible way to improve incentives is to change the overhead distribution policy, which is essentially the same as when it was first developed approximately fifteen years ago. That policy allocates overhead to the university's budget, to the faculty dean and to the department. It is our view that some overhead funds need to be returned directly to the researcher. Also, there probably should be a means by which both the researcher and the department are rewarded by sharing in some of the portion of the university's overhead when significant increases in contract research funding are achieved.

It is also important that the levels of overhead charged be increased so that it more fully covers the actual indirect costs of conducting research. Most overhead charge rates are unrealistically low, particularly on contracts with provincial and federal government agencies; McMaster needs to work with other research intensive universities to change governmental policy on these matters.

There are also indirect costs associated with research grants. For funds provided by the granting councils, these are covered to some extent through the provincial government's research overhead envelope (current funding is equivalent to an overhead rate of approximately 13 per cent). However, there is essentially no indirect cost recovery from any other research

grants. It is important for such indirect costs to be recovered if McMaster is to be able to continue to provide the important research infrastructure necessary to sustain our research activities.

The monetary target (i.e., for increased overhead) associated with our recommendations is perceived to be quite modest. It is provided as an immediate target but the Vice-President (Research) should work with the McMaster research community to develop more ambitious, yet realistic, long-term targets for both contract research funding and the associated overhead.

3 (c) Advancement

In this section, we offer an initial set of recommendations, with a following text that discusses them collectively.

Recommendation 3.5

- That the Advancement Office continue to receive support from operating funds as well as from other sources.

Recommendation 3.6

- That the Advancement Office report annually on income generated, and on its plans for the coming year in relation to previously agreed priorities.

Recommendation 3.7

- That advancement be given priority and support by all members of the university community.

Recommendation 3.8

- That faculties work with the Development Office to introduce decentralized fund-raising activities, coordinated with those of the Development Office.
- Monetary impact: Additional revenue through building up of endowments, and generating funds for designated and undesignated projects, including those that are faculty specific. The target is that, by the end of the financial year 1995–1996, this will achieve a \$500,000 increase in annual undesignated or broadly designated income through the central Development Office and a \$500,000 increase in broadly designated income through the decentralized faculty-specific fund-raising activities. (Broadly designated means that the funds can be used by the areas concerned to alleviate expenses that would otherwise be taken from the operating budget.)
- Non-monetary impact: Additional demands will be placed on human resources, e.g., senior administration and individual faculty members.
- Routing: Provost.

We recognize that advancement activities need to be very broadly defined, including the attraction of endowment funds that can be used to deal with long-term needs. In the shorter term, it is appropriate to set targets for actual income achieved through centralized and decentralized advancement activities. When determining whether these have been met, attention should not be restricted to undesignated funds obtained through the so-called Annual Fund. Income from increased endowments, and broadly designated funds (to the library or Theme Schools, for example) would also contribute to achieving our targets.

The 1960s induced universities into an unhealthy dependence on governments. We must now try to be more self-reliant. Effectively tapping into the private sector for support presents a major challenge, especially in an era of increased competition for resources. In Recommendation 1.6, we referred to the Ketchum Report, which was a review of advancement (that is, development, alumni and public relations) at McMaster, prepared by Ketchum Canada, Inc. in April 1993. The report revealed:

- (i) the existence of a relatively weak advancement culture;
- (ii) less than optimal support for advancement functions by some members of the university community;
- (iii) the need to strengthen the integration of academic and advancement planning;
- (iv) a low degree of credibility, especially among faculty members, with respect to the cost effectiveness of the Advancement Office (the lack of credibility was associated with the reporting standards and procedures);
- (v) strengths and weaknesses of specific components of the advancement operation;
- (vi) a move toward decentralization without coordination;
- (vii) a need for the university to promote itself more energetically in order to strengthen its national and international profile; and
- (viii) a need for more energy and resources to be devoted to advancement activities if the university is to be successful in an ever increasing competitive philanthropic marketplace.

It is the view of the members of PAGIC that the strength and viability of our academic programmes is likely to become increasingly dependent upon the success of the advancement operation. Failure to provide resources to support advancement at this university will, therefore, have a detrimental effect on the academic community. Integration of academic and advancement planning and strengthening the system of accountability should promote a more positive attitude toward advancement as an integral activity.

Clear fund-raising objectives reflective of the academic priorities provide the basis for measuring the performance of the Advancement Office. Annual business plans, including financial objectives and evaluation procedures to measure the performance of staff, and reporting procedures that allow the academic community to understand clearly the return on its investment, are essential to the establishment and maintenance of broad-based constituency support.

To be successful, an advancement operation requires strong entrepreneurial and marketing skills and a constituency that is supportive of strong strategic planning, institutional self-promotion and an aggressive corporate mentality. Universities that have been successful entrepreneurs, such as McGill, have strong advancement offices and an internal culture that supports advancement functions. Members of the university community need to be involved, committed and strongly supportive of advancement activities. These activities might include the cultivation of individual donors, who are becoming increasingly important. At McMaster, support is currently uneven and low-key. If this is to change, it requires that both senior administration and individual faculty members recognize and support the underlying assumptions regarding the role of the university and its relationship with the external environment.

Historically, the alumni, public relations and development functions have been planned and implemented by the central advancement operation. Decentralization to the faculty level has occurred on an ad hoc basis, e.g., the Faculty of Health Science and the School of Business. The potential for faculty-based fund-raising has been recognized by other universities. The benefits of decentralization are seen as outweighing the liabilities. The creation of a network of faculty-based advancement activities with coordination and overall direction and support being given by the central office and built-in incentives for Faculties will enable McMaster to capitalize on its potential.

The Ketchum Report has recommended that that the position of Vice-President (Advancement) be created. The entrepreneurial and marketing skills required for the advancement officer are not those usually associated with academics, and the McMaster community is anyway divided on the issue of the appropriate designation for this position. Opponents take the view that implementing the recommendation as would add unnecessarily to the senior administration, and polarize the institution at a time when relations between faculty and administration are strained. Supporters of the recommendation cite the breadth and nature of the responsibilities and the need to extend a clear message to the internal and external communities regarding the value of advancement activities. Other universities that have successful advancement offices have designated their chief advancement officers as vice-presidents.

Arguments have been made to incorporate the advancement activities with those of the Vice-President (Research) and rename that position. There is some overlap in the two positions in that the VP (Research) engages in external activities directed toward securing additional funds for research. Research is not the only area for fund raising, however. Others believe that it is more appropriate that the advancement officer report directly to the President given the latter's role as the senior administrator responsible for providing leadership by determining the policies and direction of the university. Recommendation 1.6 addressed the need to review the structure and responsibilities of the President and vice-presidents; it is important that the title, role and relationship of the senior advancement position to other senior positions be given some prominence in this review.

4 Faculty Career Development and Remuneration

4 (a) Accountability

The institution of academic tenure, long defended as the prerequisite of academic freedom, is under siege. It is not, though, that its protection of academic freedom is any less tenable than it once was. Rather, in an era in which accountability has become a central concern, it is increasingly recognized that this protection is not costless. The price paid for tenure is the encouragement it gives to a minority to flout convention by treating their position as a sinecure. If faculty members are to avoid this criticism, it is not unreasonable that they *should* be accountable; the question then is whether they currently are, and if so, whether they are to a sufficient extent.

Notwithstanding occasional popular commentary on the subject, faculty members, at least at McMaster, are accountable in a number of senses. With the notable exception of a small number of departments, student ratings on teaching are routinely collected, and are consulted in a variety of contexts when reviewing the performance of faculty members, for example, in the determination of career progress/merit salary awards, and when tenure and promotion decisions are made. Additionally, these same deliberations involve evaluation of research performance, and the extent of university service. In this regard, revisions of the tenure and promotion regulations have defined more rigorously than before what is required of a successful candidate for tenure and promotion to associate professor, and eventually for promotion to professor. Teaching, in particular, receives more attention than was the case hitherto. Finally, and most recently, the Senate Task Force on Educational Quality Assurance, chaired by William Coleman, has presented a report calling for increased use of formative assessments of teaching, in addition to the more familiar summative ratings that are traditionally collected.

There is though one significant gap. Once tenure is granted, the determination of career progress/merit has no memory. Each year, an increment for each individual is arrived at, but no examination is made of the history of these judgements. As a result, nobody's consistently subpar performance becomes anyone's responsibility to address, and if it is not anyone's responsibility, it is not surprising when it is not addressed. Recently, attention has been given to rectifying this oversight, using a system of periodic, post-tenure review, the simplest description of which, in the context of McMaster, might be a progress report of progress reports. Some might argue that this was the purpose of the salary anomaly correction procedure, but the preoccupation of that exercise was the asymmetric one of determining whether any salaries were unreasonably low. What we are proposing is a more wide-ranging review that is, by definition, periodic.

As a small piece of evidence to demonstrate that this would be a valid undertaking, consider the following. Excluding the Faculty of Health Sciences, for which data are not available on a comparable basis, there have been approximately 50 awards of career-progress/merit (CP/M) increments of 0.25 or less, and 150 of 0.50 or less, over the past four years. These have not been randomly scattered across the faculty members; rather there is a systematic tendency for the same individuals to appear in these counts year after year. To be precise, the 50 awards of 0.25 or less were confined to only about 25 individuals; similarly, the 150 awards of 0.50 were made to about 75 individuals. Put differently, for the subset of individ-

uals who received these low awards, there were on average two occurrences of such an award. We are persuaded by such data that periodic, post-tenure review deserved serious attention.

As we were preparing this report, we received an excellent discussion of whether periodic, post-tenure review poses any threat to the institution of tenure.⁵ The paper makes a convincing case for the argument that tenure and a willingness to be held accountable go hand in hand: “tenure [should] be used responsibly and primarily for the protection of academic freedom and not as a simple job security device.” Otherwise its value will decline and it will be removed, and “then academic staff will be neither safe nor, more importantly, free.”

Rather than rehash all the arguments set out so persuasively in this paper, we commend it to the attention of all concerned parties; we add only that our own sympathy for the idea of periodic, post-tenure review was sufficiently reinforced by this paper that we recommend its introduction at McMaster, the details to be worked out by the Provost, or the Provost’s delegate, in consultation with representatives of the McMaster Faculty Association.

Recommendation 4.1

- That a scheme of periodic post-tenure review be introduced for all tenured and tenure-track faculty, to be in place by July 1, 1994.
- Monetary impact: Indirect, in that other measures that eventually will be linked to the results of the reviews will generate savings (see the further recommendations in this section).
- Non-monetary impact: Preserves the credibility of tenure by defending the charge that it protects the incompetent; provides formative assessment of faculty, and thereby helps in maintaining and enhancing the university’s academic thrusts by encouraging excellence; assists faculty renewal, by identifying those whose performance is no longer competent and thereby lending support to the possibility of disciplinary procedures, including dismissal against faculty.
- Routing: Provost, Faculty Association.

We note that as a by-product of this recommendation, evidence will be collected routinely that should assist the university in dealing with the disciplining, and if necessary the dismissal, of those faculty members who fail to meet their obligations to the university.

4 (b) Workloads

According to a recent article,⁶ faculty workload is “perhaps the most pressing concern in higher education today.” Central to this, as the title of the cited article suggests, is once again the prevalent notion of the accountability of university faculty to those who fund them.

⁵See W.F. Foster, “Some Thoughts on Tenure and Periodic, Post-tenure Review,” a paper presented at the annual conference of the Canadian Association for the Practical Study of Law in Education, Halifax, NS, April, 1993.

⁶“Explaining what professors do with their time,” *The Chronicle of Higher Education*, July 15, 1992.

Perhaps in response to this, a number of faculties at McMaster have recently drafted documents addressing the question of workload, and more specifically, in some cases, alternative career paths. The Faculty of Science, for example, proposes that “the teaching duties of faculty who are no longer engaged actively in research will be double the department load expected of faculty members with normal research programmes.” Anyone who wishes to pursue this career path can approach the department chair, or chairs may suggest the path to individuals for whom they regard it as appropriate.

In the Faculty of Social Sciences, an ad hoc committee recommended that “post-tenure alternative career paths be discussed . . . paying particular attention to the introduction of time-limited emphasis on teaching,” and suggested that this was most appropriate for those already at the rank of professor. It also proposed that “the dean remind faculty of the authority of chairs and directors to make additional teaching and administrative assignments where necessary to offset inequities in workloads.”

In these examples, the scheme is either entirely voluntary, or left in the hands of the chair to take the initiative. Neither seems likely to be effective. Something, though, has to be done. The financial pressures that led to the formation of PAGIC are forcing a reevaluation of, *inter alia*, faculty remunerations and career development, and the latter topic is inextricably linked to career paths and changes therein through time. Additionally, McMaster’s Strategic Plan contained an explicit commitment to the encouragement of different directions in which faculty careers could develop.

A guiding principle adopted by PAGIC is the notion that we should do better, in fewer, for less. Put bluntly, there are two ways of doing more (though not necessarily better) for less in the category of faculty remuneration and career development: increased workloads and decreased salaries and benefits. Neither, indiscriminately applied, will do anything other than provoke unbridled hostility among faculty; some discretionary increase in workloads, or reduced salaries, however, is probably inevitable, and, furthermore, could also mean that the outcomes would be better than at present, and better too than plans currently being implemented, or discussed, in individual faculties.

We have already described some evidence on the tendency of certain individuals to be awarded subpar increments on a regular basis. Since career progress/merit increments are awarded on the basis of performance in three areas—teaching, research, and university service—and since the last of these counts for less than either of the other two,⁷ it seems likely that poor teaching, or poor research, or both, are the reasons for systematically low increments. Our belief is that a poor research performance is the predominant explanation. As justification for this, we cite a separate statistic. Each year, individual faculty members apply for research leave, which in some cases is refused. We estimated that, over the same four-year period, three to five per cent of the faculty outside the Faculty of Health Sciences had their applications rejected. Additionally, some will choose not to apply in the expectation that they will be refused. It is naturally more difficult to place a reliable estimate on this, but our enquiries suggest there could be as many as three to five per cent more in this category.

Scholarly work is a clear requirement of the job of a university professor at McMaster.

⁷In the Faculty of Science and the Faculty of Social Science, for example, teaching and research carry the same weight, 40 per cent each, and university service contributes the remaining 20 per cent.

A Senate document that was originally approved on September 13, 1972, and most recently amended on January 9, 1985, states that “faculty members on normal appointments encompassing a nine-month teaching year are entitled to a continuous period of three months in each year free from scheduled commitments to the university in order that they may have a one-month vacation and *two months in which to pursue their scholarly work*” (our emphasis). If this requirement is not being fulfilled, and in a significant minority of cases it seems that it is not, there is a long overdue need for some action to deal with this problem. Bolstered by the information collected for a post-tenure review, we believe it is possible to devise some measures that could deal with the problem in a constructive way by addressing it as an issue of career development. Indeed, we feel that many faculty members might willingly acknowledge a declining research role, but it is difficult for any number of reasons to envisage their volunteering to compensate for this by doing more teaching. Some further encouragement is required. This necessitates our eventually making recommendations regarding salaries. First, however, because the opportunities are more immediate, we make a recommendation that considers only the question of workload. Before we present the substance of the proposal, two qualifications are necessary.

First, it is undeniable that workloads differ across faculties, and perhaps between departments in a faculty. This aspect will not be addressed here: such differences reflect arrangements and practices that have evolved over long periods of time, and to try to impose top-down changes would almost inevitably fail. Within faculties, however, there are certainly fewer differences, and for the purposes of what follows, it will be assumed that there are none. To the extent that this is not true, it does little to affect the basic points being made. Additionally, we might add that our recommendations on resource allocation in Section 2 will naturally address such issues.

Our second qualification is that, though teaching and research are strongly related, the following discusses them as if they can be separately assessed. It bears noting that deliberations on career progress/merit components of salary increments do likewise of course.

Our recommendation serves as a precursor to others on faculty remuneration, designed for the longer term, that will work in conjunction with, and thereby support, this recommendation on faculty workloads.

Recommendation 4.2

- That deans, in consultation with their chairs, identify faculty members who are performing adequately as researchers (our investigations suggest these individuals to be 90 per cent of all faculty members), and to require of the remaining 10 per cent of faculty members that they each undertake additional teaching (e.g, six to 12 units), subject to the requirement that their teaching performance is satisfactory.
- Monetary impact: Extra teaching thereby generated could be of the order of 450 units or more (if 50 individuals were to teach an average of nine units more). At the current overload rates that would otherwise be paid, this would realize a saving of \$600,000, some of it from faculty budgets, some from the budget for Part-time Degree Studies.
- Non-monetary impact: An immeasurable contribution to both faculty and staff morale. The former recognize that some individuals are not contributing effectively, but get

handsomely paid nonetheless. The latter would see, perhaps for the first time, an example of the university dealing with a problem they themselves have been able to identify for years.

- Routing: No permission is required. This is something that is in the power of the chairs, and what is needed is a firm sense of direction to be indicated by the Provost to the faculty deans. Appropriate reductions in faculty budgets will probably help to provide this sense of direction.

As we have already indicated, scholarly work is a clear requirement of the job of a university professor at McMaster. The problem is determining when scholarly work is not being undertaken. The problem is not, though, insurmountable. As with many things, the faculty deans, in conjunction with individual chairs, are in the best position to pronounce on the question. Measures of research adequacy include the number of graduate students, grants (if any), and the number of peer-reviewed publications. These criteria, and perhaps others, are presumably those already used in consideration of career progress/merit increments and research leave applications. Post-tenure review would imply the use of a longer window, perhaps five years, and any individual identified as not performing adequately as a researcher could be given additional teaching for a three-year period.

Some extra teaching might be offered in the spring/summer sessions. On this point, note that the abolition of the February to July session has been accompanied by an extension of the spring/summer session so that it is now more easily possible to formalize a three-semester school year. With pressure on classroom and lecture-theatre space being what it is, and with the emphasis on lifelong learning that means people might take courses at times different from those in the past, the expansion of spring and summer offerings makes a lot of sense.

Other issues that have to be addressed include how to deal with arrangements where departments have already increased teaching loads for certain faculty members. Also, in the short-term absence of the salary adjustments to accompany workload changes, decisions on who to single out to do extra teaching, which will have to consider teaching ability, will mean that inadequate researchers who are also weak teachers will continue to draw a high salary without an increase in their workload. On this, see the discussion of salary that follows.

We should note that our presumption is that, for those undertaking extra teaching, the weights used to calculate the CP/M increase would be adjusted. For example, if the teaching load of the individual were doubled, it would not be unreasonable to reassign to teaching performance that weight normally attached to research.

This last issue suggests that any such arrangement entered into should be the subject of a contract, preferably explicit, between the faculty member and the chair or dean. The contract would specify the nature of the modified teaching load as the altered responsibility of the faculty member, and the modified arrangements for consideration of CP/M increments as the altered responsibility of the department and faculty. Additionally, we would suggest that the notion of alternative career paths, of which this is but a part, should be explicitly spelled out in contracts for new faculty members.

We should add that contracts specifying differential teaching loads are not a new idea. Within McMaster, such contracts, some explicit, some implicit, already exist. At other universities, plans are in place, or well advanced, to go even further, with the possibility of

dismissal in the event of unsatisfactory performance. This latter example takes us beyond the current issue into the realms of the relationship between post-tenure review and disciplinary procedures, to which we have alluded already.

Finally, we wish to draw attention to an asymmetry that many readers may already have noticed. There is much in the foregoing about how to adjust the teaching load of those who are not meeting the requirement that they undertake, and provide concrete evidence that they are undertaking, scholarly work. Nothing is said about those who fail to meet their obligations in regard to teaching. The reason is simple. We view teaching as the paramount responsibility of faculty members, and advocate most strongly that disciplinary procedures should be invoked against any whose performance is consistently unsatisfactory. As we have earlier stated, we expect the implementation of periodic, post-tenure review to work in conjunction with an effective system of disciplinary procedures for faculty.

4 (c) Salaries

The recommendation here relates to the use of salary adjustments to reinforce the recommendation described above. It requires little in the way of additional introductory discussion. We therefore present the recommendation first, then explain its purpose.

Recommendation 4.3

- That
 - (i) all faculty salaries be lowered to five-sixths of their current level, that is, as compensation for 10 months (including one month's holiday), with the remaining one-sixth becoming a research/teaching supplement;
 - (ii) those faculty members who are performing adequately as researchers be paid a research supplement;
 - (iii) those individuals who are not in receipt of a research supplement, but who are undertaking extra teaching, receive a full or partial teaching supplement, with the full award being paid for a teaching load that is twice the normal one in the individual's faculty.
- Monetary impact: We expect that around 90 per cent of current faculty will receive the research stipend, and that many of the remaining 10 per cent will receive a full or partial teaching stipend. The savings generated will not therefore be dramatic. If even 10 faculty members received neither a research supplement nor a teaching supplement, however, this would save close to two average faculty members' salaries, so it might not be unreasonable to identify a monetary impact of, say, \$150,000.
- Non-monetary impact: This is, however, likely to be significant. Again the improvement to morale is important: those who perform neither research nor teaching adequately will be identified and dealt with through the denial of either research or teaching supplement; additionally, their identification will aid the instigation of disciplinary procedures, where these are deemed appropriate.

- Routing: The Joint Committee, via the Provost.

The aim of this recommendation is not to lower total remuneration. Most individuals' salaries will be unchanged. Rather it is to make more explicit what the money is paid for. For the sizeable majority, it will be paid, as it is now, in recognition of the maintenance of high standards in teaching and research. For those who, for various reasons, are no longer able to provide evidence of a maintenance of high standards in research, the opportunity exists to pursue an alternative career path involving a compensatory higher level of teaching, with higher remuneration than would otherwise be paid, since those of this group who choose not to increase their teaching load will receive neither a teaching nor a research supplement.

In this sense, the recommended system contains incentives to undertake extra teaching that are completely absent from both the scheme introduced by the Faculty of Science that was described earlier, and that proposed for the Faculty of Social Sciences. It does not treat extra teaching as punitive, but leaves it to the individual to choose whether to accept a reduced salary or an increased teaching load. Furthermore, it is likely that those who are good at teaching will have the greatest incentive, other things equal, to increase their teaching load.

A further benefit of the recommended scheme is that it naturally reinforces, and allows flexibility in, the career progress/merit scheme. Those who are deemed not to meet the minimum threshold for research but who choose nevertheless not to take on extra teaching duties will continue, in consequence, to be judged by a merit scheme that attaches equal weights to teaching and research, and will receive a commensurately low weighting for research. If, however, they do choose to undertake extra teaching, they will automatically be judged in a modified merit scheme that reassigns to teaching some proportion of the weight normally assigned to research, with all of the weight being assigned to teaching in the event of a double teaching load.

Before such a scheme can be implemented, a number of issues will have to be addressed. Chief among these is the obvious concern of someone near retirement that he or she will not be allowed to undertake extra teaching and will thereby qualify for a lower pension. For these individuals, some security of pension rights must somehow be incorporated. There already exists a policy on reduced workload, to which reference could be made in this regard.

4 (d) Benefits

In recent months, McMaster has been criticized for its policy of providing tuition waivers to the dependants of faculty and staff. This is a taxable benefit (with the tax being paid by the employee, who is not, of course, the recipient of the free tuition), and is easily defended as something that would have to be balanced by some salary adjustment if it were eliminated, arising as it does out of negotiations with the Faculty Association and the Staff Association.

Our concern is that, as it stands, the commitment is an open-ended one that, given the likelihood of large increases in tuition, exposes the university to considerable risk. Recently, a tuition bursary has been added as an alternative benefit. This is still only available for dependants who choose to attend McMaster. Its advantage over the tuition waiver is that it is the recipient (more often than not a person with a lower marginal tax rate than the faculty member) who pays tax on it. To take account of this, the amount of the bursary

(denominated in dollars, not tuition fees) has been set at a level lower than the full cost of tuition fees.

Our recommendation is to remove the open-ended commitment that the university has made by effectively waiving tuition fees regardless of how high they should rise, and to retain only the bursary. The level of the bursary would then become an explicit item over which the university and the Faculty Association would negotiate, thereby making explicit what is already implicit, namely that it is a legitimate fringe benefit, determined as part of the overall compensation package for faculty members.

Recommendation 4.4

- That the tuition waiver for dependants of faculty members be eliminated, and only the tuition bursary retained, with the value of the bursary being fixed at its current level, and subsequently the subject of negotiations between the university and the Faculty Association.
- Monetary impact: There would be no reduction in current costs. There is a future saving in the sense of a cost the university would face in the future if our current practice were to remain in effect: each one per cent increase in fees would raise the university's costs by about \$5,500.
- Non-monetary impact: Identifies the bursary as an explicit fringe benefit, and forces the university and the Faculty Association to negotiate over its level.
- Routing: The Joint Committee, via the Provost.

Though we have not made a formal recommendation to this effect, we also suggest that consideration might be given to the university's contributing on behalf of its faculty members to a registered education savings plan. This would have the added benefit that the person on whom the plan's proceeds are spent need not be a McMaster student. Since many faculty members' offspring go elsewhere for their university education, it would seem appropriate for the discussion of the retention of only the bursary to be extended to include this possibility.

We should finally add a word about benefits regarding tuition as they relate to staff. In our discussion below of staff career development and remuneration, we make the parallel recommendation that the tuition waiver be abolished for dependants of staff, and that only the bursary be retained. We separate the two because we see no reason for retaining the same benefit structure for both faculty and staff. Should staff value a bursary more highly than faculty, for example, there is no reason why a higher level of bursary could not be negotiated for them.

4 (e) CP/M

Modifications to the CP/M scheme will probably be necessary if the recommendations already made are implemented. The next recommendation relates explicitly to the CP/M scheme, and furthermore could be implemented even if the other recommendations were not. It is sufficiently general that it is best to present it first, and to discuss it subsequently by way of examples.

Recommendation 4.5

- That the university explore with the Faculty Association ways of modifying the career progress/merit (CP/M) scheme, and enhancing its importance in ways that will contribute to an improved incentive structure for, and accountability of, faculty members.
- Monetary impact: None (that is, overall salary settlements will be no different from what they would have been).
- Non-monetary impact: Provides greater incentives to teach effectively and undertake high-quality research, and simultaneously makes faculty more accountable.
- Routing: The Joint Committee, via the Provost.

There are a variety of possibilities, some of which were proposed to us by those who responded to our requests for ideas on how to initiate change. We discuss each one only briefly.

As part of the social contract agreement, the Faculty Association will enquire of its members during the coming year whether they would be willing to accept a negative across-the-board settlement in exchange for increased merit awards. This is clearly one way in which the career progress/merit scheme can generally be enhanced at the expense of across-the-board increases. Another is to broaden the scope of the career progress/merit scheme by allowing for such awards to be negative. Indeed, in a period when the revenue from which salaries have to be paid is not growing, this latter possibility would still allow for the reward of merit, albeit at the expense of reduced salaries for those deemed less meritorious. This is, admittedly, also its biggest weakness, although it must be said that, however a constant salary bill is apportioned, there are always winners and losers in a relative sense.

A quite separate mechanism for bolstering the career progress/merit scheme at the expense of across-the-board settlements is to limit in some way the latter. Proposals for how to do this abound, but one appealing idea that deserves consideration is to link the size of the across-the-board settlement to some fixed salary, such as the floor for an assistant professor. This would mean that the across-the-board settlement would be a fixed dollar figure, and in consequence would represent a higher percentage increase to the lower-paid, younger faculty members than to the better-paid, older faculty. The dollars thereby released for career progress/merit increments could then be used more constructively to reward the current merit, rather than the past merit (in the form of high salaries), of the older faculty. A similar idea, and one that is already in effect in at least one major university in Ontario is to set a salary level beyond which no across-the-board increases are given. In other words, all increases beyond that point must be merit-based.

In conclusion, we reiterate something we have already stressed: beyond the clear positive incentives all these proposals provide for scholarship in both teaching and research, the acceptance of an increased importance of career progress/merit in the determination of salary increases will serve to indicate a greater willingness on the part of faculty to be accountable for their activities.

4 (f) Release Time

The final topic of this section is that of release time. During the last 10 years or so, there has been a marked increase in two types of release time. First, the proliferation of research institutes and interdisciplinary programmes has led to directors of such units being given release from their usual departmental teaching responsibilities. The recent report on a number of these units, carried out for the Board-Senate Committee on Academic Planning (BSCAP) by a committee chaired by F.A. Hall, made it clear that there is typically little consistency across the various arrangements. Second, a variety of other activities have been rewarded by the granting of release time, in what some may view as an even more uncoordinated fashion, usually with only meagre compensation to the affected department.

It also bears mentioning that there is, furthermore, a tendency for departments to use release time to lighten the burden on those who shoulder administrative and other loads, but our position on this aspect is that these are presumably mutually agreed upon in those departments, and not a matter for our investigation. (It is also the case that should such arrangements become excessive, they will be reflected in the calculations on relative cost per Basic Income Unit; see Recommendations 2.2 to 2.5.)

Our position on those arrangements that are visible is twofold. They should compensate adequately whichever department loses the teaching services of someone granted release time, and they should be broadly equitable between individuals. The resource allocation mechanism outlined in Section 2 will, if implemented, go some way to addressing both of these issues, but especially the first. Additionally, the shifting of the responsibility for research institutes and most interdisciplinary programmes to an appropriate dean (see Section 6), will force the faculty deans to evaluate these units in the same way that departments are evaluated. The result will be a playing field that, though not entirely level, will be more so than it is now.

To hasten the adjustment of existing arrangements to make them more equitable, we make the following recommendation.

Recommendation 4.6

- That
 - (i) in light of the transfer of responsibility for all research institutes and many of the interdisciplinary programmes (see Section 6), the deans, separately and together, review arrangements for teaching release for directors of these units, to ensure some degree of conformity across comparable units;
 - (ii) once the deans complete this task, the Provost, in consultation with the deans, and taking into account the outcome of their deliberations, undertake a similar review of the arrangements for release time for directors of units that continue to report to the Provost, or to anybody other than the deans.

This still leaves open the question of ad hoc arrangements for all manner of activities that attract release time. The solution here is so simple that it does not warrant even a recommendation. A protocol has already been established for the provision of instructors to programmes such as Arts and Science, which values three units of release time at \$7500. All

that is required is that this arrangement be henceforth extended to all ad hoc arrangements, by agreement between the Provost and the faculty deans, and additionally that the money goes directly to the department from which the individual is released. We predict two outcomes. There will be much less grumbling about ad hoc arrangements, and there will be fewer of them (which will be only one of the reasons there is less grumbling).

5 Staff Career Development and Remuneration

Recommendation 5.1

- That the Director of Personnel Services establish a task force with broad representation (including staff) to review McMaster's human resource policies and procedures and make recommendations for modifications that will facilitate staff development and organizational change.
- Monetary impact: Difficult to quantify.
- Non-monetary impact: Given the challenges the university faces, it is essential to provide opportunities for staff development, and to have policies that both facilitate change and are perceived as fair by staff.
- Routing: The routing will depend upon the nature of the recommendations.

Recommendation 5.2

- That the university extend the commitment to internal hiring for positions requiring generic skills to September 1, 1994.

The staff of McMaster play an essential role in the operation of the university and have adapted to changes in the way in which work is conducted. Nevertheless, PAGIC believe that greater emphasis on the staff is appropriate.

Decentralization of many of the decisions regarding hiring, appraisal and remuneration of staff has a number of consequences. Treatment of staff can vary tremendously from one part of the institution to another. The perception of different treatment of staff by supervisors adds to the perception among many staff that their concerns are secondary to those of faculty. The decentralization of hiring decisions militates against an organized career development. Staff who return from accidents may have limited opportunity to be placed in a modified job that might happen if there was a larger group of employees among whom one could make redistribution of duties.

Localised hiring may encourage supervisors to feel that they should not train their staff who might then leave and go to work for others. Many staff have participated in training programmes and seminars and have taken both credit and non-credit courses. Much of our training involves specialization so that a staff member sees very little of other parts of the university.

The way in which each job has its own description with individual salary scales may limit movement and organizational change.

The current reward system rewards individual effort and not team effort. This does not encourage staff to do any work that lies outside the department.

Organizations in North America are changing; this has been enabled by new technology and a better educated workforce. Decisions are being made at lower levels, employees are often encouraged to work in teams and carry out more diverse activities. Job responsibilities may be varied as organizational needs change. We believe that we have excellent staff at

McMaster who are capable of working in new ways and accepting responsibility, provided they are given the support, recognition and authority to do so.

Later in this report (Section 8: Supporting Services), we suggest a form of appointment of staff to broader units (e.g., faculties rather than departments) that is intended to encourage team-work and more effective use of staff. The more general point is that if staff are part of a larger work-unit, greater flexibility in how work is organized is possible, and the opportunities for staff development are enhanced. Although PAGIC has used faculties and academic departments as an example, the same principles apply in other areas. Some areas of the university, such as the Registrar's Office, are introducing new work arrangements that vary from time to time and in which duties of staff are more generally defined. In the case of faculties and departments PAGIC believes that the duties of staff are such that the necessary capabilities can be identified so that well-defined training programmes could be used; more explicit career paths could be identified; and job exchanges could take place.

Revised work arrangements such as those described above, changing technology and the need for organizational change make the provision of development and training essential. While many opportunities are available to staff, such as the Tuition Assistance Programme at an annual cost of over \$200,000, they are not clearly focused. Although many staff have used these opportunities, PAGIC believes that it time that the university placed greater emphasis on career development with the objectives of providing improved programmes to staff and of more effective use of the funds spent on this activity.

Implementing change successfully will require participation and cooperation of staff. In return staff expect that the university will try to plan such change and, where possible, will attempt to find other opportunities within the university for staff who may be affected by change. Existing policies and practices need to be reviewed within the context of organizational change.

In summary, we believe that a through review of human resource policies and practices must be conducted in order to develop an environment that supports the needs of both the university and staff. Below we have listed items that require attention and the direction in which we believe the university should be moving. This list should not be regarded as the full scope of what should be considered; PAGIC presents these as some of the items that require specific attention. The review must respect the relationships with employee associations and unions, and the university's obligations with respect to employment equity and the social contract.

- (i) Staff should be associated with larger work units (e.g., faculty rather than departments) in order to provide more opportunities for career development for staff and greater flexibility for the university.
- (ii) More attention should be given to the completion of performance reviews and a review of them in order to identify development and training needs, and opportunities for staff growth. Options such as staff exchanges and temporary placements should be considered.
- (iii) A more focused set of training opportunities should be developed. These might include the establishment of curricula and certificates to recognize achievement in specific areas.

- (iv) The nature of job descriptions, how they are assessed and salary administration policies should be reviewed to ensure that they facilitate career development and flexibility.
- (v) The annual decisions on merit should take into account contributions beyond the work unit and the lack of flexibility that may exist in small units.
- (vi) Staff should be rewarded for contributing to work improvement and change.

The social agreement for staff included a commitment to limit external hiring for positions requiring only generic skills. The implementation of PAGIC's recommendations will have an impact on staffing, and we believe that, in consequence, the commitment should be extended until at least September 1, 1994.

Recommendation 5.3

- That the tuition waiver for dependants of staff be eliminated, and only the tuition bursary be retained, with the value of the bursary being fixed at its current level, and subsequently the subject of negotiations between the university and the Staff Association.
- Monetary impact: There would be no reduction in current costs. There is a future saving in the sense of a cost the university would face in the future if our current practice were to remain in effect: each one per cent increase in fees would raise the university's costs by about \$5,500.
- Non-monetary impact: Identifies the bursary as an explicit fringe benefit, and forces the university and the Staff Association to negotiate over its level.
- Routing: Staff Association, via the Vice-President (Administration).

The issues involved in this recommendation were discussed at the end Section 4 (Faculty Career Development and Remuneration). They are essentially the same for both faculty and staff, although PAGIC recognizes that faculty and staff may place different values on this benefit, which is why the recommendation is made separately for each group: there is no reason at all why the benefit should be set at the same level for both.

The evidence from 1993–1994 is that many do not appear to understand the tax advantages inherent in the bursary scheme; twice as many have selected the waiver over the bursary. No matter what decision is made on this recommendation, it is essential that a clearer explanation of the two schemes be provided to faculty, staff and their dependants.

6 Academic Structures and the Provision of Instruction

There are three parts within this general heading. Section 6.1 deals with academic structures (faculties and departments) and reporting relationships. Section 6.2 looks at academic programmes, and at collaboration with neighbouring institutions. The third section looks at classes and the classroom.

6 (a) Academic Structures

Recommendation 6.1

- That deans work with department chairs to review current department alignments and, in appropriate cases, to develop new alignments that take into account anticipated staffing changes to the year 2000, academic strengths, and opportunities for improvement or for new areas of focus in undergraduate, graduate, and postprofessional education and in research. Three specific examples are clear enough already to warrant detailed mention.
 - (i) We strongly support the effort that is currently in progress in the Faculty of Humanities among the Departments of Art and Art History, Drama, and Music. We expect to see a specific proposal brought forward from that group very early in 1994 (if not by the end of 1993), for approval within the 1993–1994 academic year.
 - (ii) We have identified two other areas where talks should be started immediately, with the expectation of clear plans by April 30, 1994, which can be acted on in the 1994–1995 academic year: the Departments of Geology and Geography, and the Departments of Computer Science and Systems and Electrical and Computer Engineering.
 - (iii) There are a number of other areas where planning for realignments should begin. Examples include the Departments of: Classics and History; Physics and Astronomy and Engineering Physics; and Religious Studies and Philosophy.
- Monetary impact: Major. Approx \$250,000 annually in a few years time
- Non-monetary impact: Possibility for improved instructional programmes.
- Routing: Faculties, and departments, then Senate

In order to achieve the substantial monetary target for reduced expenditures that has been imposed by provincial cutbacks, it is clearly going to be necessary to have fewer employees than at present. It would be better for all employees if this could be accomplished by normal attrition (retirements and resignations), so that nobody had to be laid off, and no departments or programmes had to be closed due to financial exigency, but we don't think this is likely. Certainly it is our hope that attrition can provide the great majority of the reduction in work force, but attrition will not usually lead to the reductions occurring in the

places where they are needed. For the university to be able to rely on attrition as the main way to reduce the workforce, there will need to be much greater flexibility in dealing with positions and tasks than is now the case at McMaster. This affects the academic side of the university as much as it does the administrative side. This section of the report deals only with changes in the structure of the academic units to bring about this increased flexibility for both faculty and support staff. Administrative structures are dealt with elsewhere.

There are a sizeable number of faculty retirements scheduled to occur within the next five years, and an even larger number in the five-year interval after 1998. There are nine in each of the next two years, followed by four years with about a dozen each, and then another four years with over twenty retirements per year. The distribution varies by faculty, needless to say: Business faces only one retirement in the next five years, and four more in the five years after that; Science faces 25 in the next five years, and a total of 56 within 10 years. It will clearly not be possible, under present and foreseeable funding for the university, to replace all of those faculty. Unless the situation changes considerably, it may not be possible to replace very many at all.

Two approaches are possible in light of that outlook. The first, and clearly preferable, is that departments and faculties cooperate with each other to promote realignments that build upon the strengths remaining after retirements, and to provide new areas of focus that may not have been obvious before. Many of the current departments have been defined historically. While they make sense from the point of view of the discipline or profession (or the professors), it is less obvious that the current alignments and programmes provide the best education for people who won't be going into those specific professions, which is the case for the majority of our students. The alternative is that departments compete with each other for the few replacement positions, in order to attempt to maintain their current internal structure and strengths. If the university takes this approach, there may be a few winners, in the sense that they are able to make a case for remaining as before, but there will be more losers, whose faculty complement will be reduced, and who will lose some of their present areas of expertise.

Four examples may help to illustrate the possibilities. First, with the active encouragement of the Dean of Humanities, Evan Simpson, the Departments of Art and Art History, Drama, and Music are already discussing details of amalgamation. This combination should be able to provide improved undergraduate programmes, weather faculty retirements better, and in all likelihood save on staff positions as well. From all accounts, all three departments are enthusiastic about the prospects. This kind of grass-roots initiative is exactly what is needed: all involved should be commended for their efforts.

The second example is the Geology Department, which has experienced low enrolments for several years, and faces a number of retirements in roughly five years. Because of the low enrolments, it will be exceedingly difficult to justify replacement appointments for the retirees. If there are no replacement appointments, it will not be possible to continue to offer either the undergraduate or graduate programmes. Amalgamation of the remaining faculty members in Geology with the Geography Department holds promise both for creating new opportunities for improved academic programmes in Earth and Environmental Sciences, and for making good use of the expertise of the remaining faculty members. Courses and programmes will obviously need to be rethought; it will not be possible to retain everything that is now offered. The Geography Department currently has a dual nature, in that it includes

both physical geography (which is the part that has some commonality with Geology) and human geography. Consequently, like Psychology, it enrolls students through both the Social Sciences and Science Faculties. Although there may be concerns within the Geography Department about the effect of this amalgamation on the dual nature of the department, it seems highly probable that the dual nature can still be retained, and that an amalgamation can in fact strengthen the Environmental aspect of new programme offerings.

The third example involves the Department of Computer Science and Systems and the Department of Electrical and Computer Engineering. This combination appears to offer considerable scope for rationalization of programmes and courses, and to provide opportunities for graduate student supervision by active researchers in the current department of Computer Science and Systems. We understand that there is already a small group involving members of both departments that is looking into this opportunity.

The final example is the Physics and Astronomy Department. Like Geology, it faces a number of retirements, especially among their experimentalists. Engineering Physics has good young people active in related areas. Whether a merging of departments is needed to make use of this complementarity is not obvious, but certainly a loosening of departmental boundaries would be valuable. There has been good cooperation in the past, for example in PhD supervision; increased cooperation will be needed in the future.

These four examples are ones of which members of PAGIC are aware. There are many other departments facing retirements that need also to look at the possibilities for change, given that it will not be possible to replace many of the retirees. It is simply not feasible to continue into the future with the expectation that McMaster will be exactly as it has been in the recent past. A normal reaction to such a situation is to bemoan that fact, but such a situation can also be welcomed as an impetus to draw upon the creativity and imagination that universities have in abundance, in order to develop new ‘departmental’ structures or programmes that make the most of the opportunities available. PAGIC does not have all the answers, but it is important that all faculty members, not just deans and chairs, begin to look at the opportunities for doing things differently in the future.

Along the same lines, we asked the Deans of Humanities and Social Sciences to consider the benefits and drawbacks that might arise from amalgamating those two faculties. They have discussed it with two representatives from PAGIC, in their faculty councils, and at a full meeting of the Faculty of Social Sciences. There has also been a suggestion made for amalgamation of the Faculty of Science with these other two.

Recommendation 6.2

- That the Provost convene a meeting of the key individuals in the life sciences arena, including the Vice-President/Dean of Health Sciences, the Dean of Science, and the chairs of appropriate departments, to propose a mutually satisfactory resolution of current differences. This meeting should occur before the end of 1993, the services of an impartial facilitator should be used to lead this discussion, and the group should be charged with developing a solution that can be approved in the 1993–1994 academic year for implementation in the 1994–1995 academic year.
- Monetary impact: too early to say

- Non-monetary impact: potential resolution of a major irritant
- Routing: after the meeting, most likely to Senate

There are several issues to be addressed with regard to the Life Sciences disciplines. Chief among them are the overlapping of the disciplines, and the current overcrowding due to high student demand. With regard to the first issue, there is increasing collaboration among the several departments, and academic integration of the disciplines. A restructuring of the departments and other units involved in this field could promote doing better in fewer programmes or departments, and potentially for less cost. There is also considerable tension within the Faculty of Science, and with the Faculty of Health Sciences, as a consequence of the massive increase over the past several years in student enrolments in Biology, Psychology, and Biochemistry. PAGIC considered proposing a separate Faculty of Life Sciences, but this would impinge heavily on the existing Faculty of Health Sciences. Alternatively, one might consider moving all of Biology and Psychology into Health Sciences, where Biochemistry is already located. This would not necessarily improve the workload/resources imbalance, however, in that Health Sciences is already facing severe financial difficulties, due to recent decisions of the Ministry of Health as well as the Ministry of Education and Training. We in PAGIC were not able to identify a solution to this difficulty. Instead our recommendation in this instance is for the primary stakeholders to deal with it directly.

Recommendation 6.3

- That research institutes be assigned to an appropriate faculty dean, instead of reporting to the Vice-President (Research), effective July 1, 1994.
- Monetary impact: Minimal.
- Non-monetary impact: Improved linkages between research and teaching functions.
- Routing: Provost, Vice-President (Research), and deans.

The primary intention of this recommendation is to promote the interaction among research, graduate education, and undergraduate education envisioned in the Strategic Plan, by reinforcing the linkages between the research institutes and the faculties. The secondary effect will be that the VPR is relieved of certain of the operating functions now located in that office, allowing greater focus on the external activities. An additional consequence will be that the faculty deans will have increased knowledge of, and control over, more of the budgetary activity taking place in their areas.

Certainly it is true that a number of the research institutes are interdisciplinary in nature, with active membership that crosses faculty lines as well as departmental boundaries. It is not our intention in making this recommendation to suggest that this interdisciplinary involvement should be reduced. It is extremely valuable, and should be maintained or augmented. The rationale for this change is to help bring the strengths of the interdisciplinary efforts into the instructional arena, as well as the research area.

Recommendation 6.4

- That interdisciplinary programmes in general report to a faculty dean. In that context, and in line with the recommendations in the review of these units for the Board-Senate Committee on Academic Planning (BSCAP) prepared by a committee chaired by F.A. Hall, the Centre for Peace Studies, Indigenous Studies, the Office of Gerontological Studies and the Women's Studies Programme should report to the Dean of Social Sciences, instead of the Provost, effective July 1, 1994.
- Monetary impact: Minor.
- Non-monetary impact: Improved interaction of interdisciplinary programmes with regular departmental programmes.
- Routing: Senate.

There are two difficulties with the present structure, which has these units reporting to the Provost. The first is that as a consequence they are not explicitly tied into the normal instructional and student counselling patterns. On the one hand, this means that they each need to act like a mini-faculty, and do all of the things a regular faculty does regarding their undergraduate programmes and students. The result of this is that rather than promoting interdisciplinary behaviour, these units tend to become disciplines unto themselves, defeating one of the purposes for which they were formed. Having them report to a dean would solve this problem.

The second problem is that the Provost simply does not have the time to devote to close interaction with the directors of these units, in the way that a dean and the department chairs interact. This means that in practice these units operate more in isolation than they should, augmenting the first problem. In addition to this difficulty, the Provost is in the position of both arguing for the budgets of these units, and mediating among the competing claims of the faculties, which could at some point in the future be even more awkward than it is now. The Provost should not be required both to set overall policy and direction for the whole of the academic side of campus, and at the same time to have managerial responsibility for a dozen or so units with three or four people in them. Assigning each of these units to a faculty dean would solve this problem as well.

6 (b) Academic Programmes

The second issue related to academic restructuring as it applies to faculty members is the set of programmes that are offered at McMaster, and potential interaction with neighbouring postsecondary institutions regarding academic programmes.

Recommendation 6.5

- That, in accordance with the Strategic Plan, and building on the recent curriculum changes in the Faculties of Science and Social Sciences, departments continue to modify their undergraduate programmes to meet the needs of students, most of whom do not pursue as a career the particular discipline in which they take their degree. Monitoring

of progress in this regard should be the responsibility of the new Academic Council of Senate, which should also have the responsibility for facilitating the introduction, and monitoring the functioning of, interdisciplinary programmes.

- Monetary impact: None
- Non-monetary impact: Improvements in the programmes offered at McMaster (i.e., the “doing better” part of changes).
- Routing: Senate.

We recognize the importance of a strong disciplinary base for developing a disciplined thinker. (The play on the word is intentional: the two common usages of ‘discipline’ are not unconnected with each other.) Yet we also recognize that only a minority of honours graduates go on to advanced work and a career in the discipline they study at university—and that almost none of those who take a three-year degree do so. Despite this, many of our undergraduate programmes are structured as if the students were going on in the same field. Curriculum reforms approved last year were a recognition of this, and more can be done along those lines.

The emphasis on disciplines in the preceding paragraph is not meant to neglect interdisciplinary work, which is an important focus of the Strategic Plan. ‘Interdisciplinary’, however, refers to work among or between disciplines, or disciplines working together, not to work done outside of disciplines. It will be important to continue to develop interdisciplinary programmes, not least because most of our students will be working across disciplinary boundaries after they leave McMaster. It will be equally important to continue to ensure that the student gains the benefits of at least one sound disciplinary base as part of such a programme.

Recommendation 6.6

- That Senate form an ad hoc committee to review the degree programmes being offered at McMaster, and consider removing or combining those programmes that are specified in full in the McMaster University Undergraduate Calendar, yet have few students.
- Monetary impact: In the long-term, potentially major, from the rationalization of degree programmes and consequent modification of department complement.
- Non-monetary impact: A clearer calendar, with fewer programmes, that is easier to comprehend.
- Routing: Faculty undergraduate curriculum committees.

This recommendation addresses the large number of programmes at McMaster with few students. The 1993–1994 McMaster University Undergraduate Calendar lists 70 ‘programmes’ in which the university offers undergraduate degrees. Among them, these programmes offer 43 honours degrees, 39 professional degrees, 23 bachelor’s degrees (i.e., three-year degrees), and one major degree. In addition, 40 of the 70 “programmes” are shown

to be available as part of a combined honours degree (which means there are potentially as many as 780 combined degrees available). As an indication of the number of combined degrees actually taken, the Registrar's report of degrees awarded from Spring of 1992 through Spring of 1993 lists 288 undergraduate programmes.

The Combined Honours programmes are probably not a source of difficulty: indeed, they may represent the best of our interdisciplinary programmes, even though they are not generally described as such. There is a potential problem, however. Of these 288 programmes in the list of graduands for the past two years, 89 had only a single graduand over the two-year period. Of these 89, 68 were in Combined Honours programmes, available under the permissive rubric found in all departments in the Faculties of Humanities and Social Science. Two were programmes that had been deleted from the calendar several years ago but in which long-standing, part-time students have yet to complete all requirements. Two more were combinations of an honours programme with a minor. Seventeen of the programmes, however, are fully specified, i.e., there are 17 programmes listed in complete detail in the undergraduate calendar that have had only a single graduand in the past two years. Six are in combined fields, and five are in Arts and Science, but there remain another six that are single-discipline programs.

The following questions arise primarily from consideration of these low-enrolment programmes, but probably apply equally well to the large-enrolment programmes. Is it necessary to specify the requirements for the programme so tightly for so few students? Is the programme necessary, in the sense that it leads directly to a specific job that must have this particular title and combination of courses, or is it a combination that has meaning primarily within the university? Would a less restrictive specification of the requirements, and consequent combination of existing programmes into a smaller number lose anything of value? Would such a reduction in programmes make it easier for students to understand the programme requirements, and therefore to register without aid or intervention from the associate deans' offices? These are questions that PAGIC is not in a position to answer, but, under, McMaster's current structure, no-one seems to be in a position to ask.

In discussing academic programmes, we would be remiss if we did not identify the need to develop more academic linkages with colleges and other universities. We perceive that the public has a strong desire for publicly supported institutions in Ontario to work more closely together to rationalize the use of physical and human resources, as well as providing more opportunities for students to benefit from studying in several institutions, whether within the university sector or in both the university and college sectors.

Recommendation 6.7

- That McMaster work to increase its academic linkages with Mohawk College, including, but not restricted to, transfer arrangements, advanced training, continuing education, and professional education in the health sciences.
- Monetary impact: No direct immediate impact for McMaster's budget, but long-term financial effectiveness of both institutions will be enhanced significantly.
- Non-monetary impact: Improve accessibility to educational programming, which involves both college and university-level instruction; positive public image.

- Routing: Provost, faculty deans, departments.

McMaster already has some academic linkages with Mohawk College; these are concentrated in but not restricted to the health sciences sector. However, there is the potential to increase these linkages considerably. For example, a study is currently underway to determine the feasibility of developing a major collaborative project, including a new building, to provide a full range of professional education in the health sciences. We also note the report (April 1993) of the Task Force on Advanced Training (chaired by Walter Pitman), which was established by the Ontario government. While that report contains a number of recommendations, two major thrusts are worth noting:

- (i) the need to eliminate barriers to inter-sectoral (i.e., between university and college sectors) transfer for postsecondary learners; and
- (ii) the importance of partnerships between colleges, universities and the employment sector to provide opportunities for individual development and contributions to the economic renewal of the province through the provision of advanced training programs.

Recommendation 6.8

- That McMaster work to increase its academic linkages with neighbouring universities (primarily, but not exclusively, Guelph, Toronto, and Waterloo) to develop joint graduate programmes along the lines of the current Guelph/McMaster Ph.D. programme in philosophy.
- Monetary impact: No direct immediate impact.
- Non-monetary impact: Enables graduate programme development that would otherwise be financially or academically nonviable; broadens opportunities for McMaster faculty and students to participate in graduate work; positive public image.
- Routing: Dean of Graduate Studies, faculty deans, departments.

With reference to academic linkages with other universities, we note the success of the joint Guelph/McMaster doctoral programme in philosophy. Through collaboration between the two institutions, that programme has enabled doctoral work to be developed when it would not have been possible for either of the two institutions to develop a programme on its own, because of a lack of critical mass. Collaboration has also enabled the institutions to complement each other so that its joint strength is considerably more than the sum of two parts. This provides a good example of the potential to use the vehicle of collaborative joint graduate programmes. Another example is the discussion taking place among Deans of Engineering at McMaster, Toronto and Waterloo. Such collaboration will be particularly important during the next few years, when severely constrained resources will make it difficult, if not impossible, to strengthen disciplines at any one institution to levels required to initiate and sustain new graduate programmes. Such collaborative ventures would also enable institutions to use complementary strengths to develop new interdisciplinary graduate programmes.

6 (c) Provision of Instruction

PAGIC considers that the maintenance and improvement of quality in delivering instruction within our academic programmes are among the most important goals for McMaster, particularly in a period when many changes are taking place. While we are providing relatively few recommendations in this regard, we do believe that these are significant in achieving this goal during a period when fewer resources are available. The impacts of the next two recommendations are combined, and listed after recommendation 6.10.

Recommendation 6.9

- That departments review the effectiveness and efficiency of various modes of delivery for each of their courses, taking into account, among other things, the educational objectives for the course, possible course formats, new technologies that have educational potential, and the personnel resources available.

Recommendation 6.10

- That faculties institute, through departments, a review of course offerings, with particular attention to duplication of courses across departments, the number of courses offered relative to the number of programme students enrolled, and the number of courses with very low enrolments.
- Monetary impact: Savings achieved through improving efficiency in modes of delivery, use of new instructional technology, elimination of unnecessary duplication of courses and the reduction in the number of courses with very low enrolments is estimated to be in the order of \$400,000. However, there is likely to be a need for some one-time investments for course development and the introduction of new instructional methodology.
- Non-monetary impact: Resources available for instruction will be used more effectively so that quality of instruction will be improved.
- Routing: Deans, departments, instructors.

In determining the appropriate mode of delivery for our courses, we have to consider the resources we have and make some difficult decisions on how best to utilize them. For instance, with reference to human resources, should our use of faculty distinguish clearly between those in the tenure track and part-time instructors? That distinction would be reflected both in teaching loads and the nature and level of course offerings. We have to ask ourselves to what extent we capitalize on the differences in teaching abilities between and among teaching resources (tenured faculty, part-time instructors, TAs)? Are there courses that emphasize skill acquisition, for instance computer literacy, that could be taught effectively by faculty who have fewer academic and research qualifications? Some of these questions touch on the fundamental values within the university, that is, equality among faculty and autonomy of faculty, and may require a change in the culture itself. There is a general belief that we are not making the best use of the available teaching resources.

The manner in which we provide instruction is affected by the methods used, the number and size of course offerings, the nature of courses and the availability of support resources. The methods of instruction vary from the use of electronic media to the teaching style of the professor/instructor. We need to examine carefully the nature of the material to be conveyed, how that material is learned best and the range of alternative modes from the ideal to the acceptable (from the perspective of both the learner and the teacher). If additional resources are required to develop or to implement alternative modes, the long-range cost savings will need to justify the initial costs and the former ways of delivering instruction need to be replaced. For instance, where students have access to electronic-mail, are instructions for assignments and feedback given through that medium? Have we looked at the first level classes, especially those with large enrolments, and identified the most effective and acceptable mode of instruction? The Instructional Development Centre and other groups on campus have been generating information on the teaching-learning process, but greater effort is required to ensure that the information is not only assessed critically by the faculty and teaching assistants, but implemented in practice. The continued development of the teaching skills of faculty and teaching assistants will enhance the quality of instruction. The expertise on campus needs to be channelled to improve the mode of instruction so that we utilize the most effective and efficient teaching methods.

Disciplines have the autonomy to determine what courses are needed and offered for specific programmes; that judgement of the disciplines needs to be respected. However, the university as a whole has a responsibility to ensure optimal use of resources. Thus, while course offerings must meet the needs of the disciplines, unnecessary duplication needs to be avoided. Are there courses that are listed as discipline specific but actually address content that is common to a number of disciplines? Statistics on enrolments in undergraduate courses over the past five years shows that 30 per cent of all courses had fewer than 10 students enrolled in an academic year. As well, other data show that there has been a considerable increase in the number of courses offered over the past 10 years, led by a 30 per cent increase in the Faculty of Humanities. Have programmes/disciplines analyzed critically the number of course offerings required/offered? To what extent do the course offerings reflect the increasing specialization of the faculty rather than the knowledge and skills required by the graduates? Are there areas in which more courses could and should be offered? Conversely, are there courses that should be deleted? To what extent are the service courses meeting the needs of programmes and how could they be packaged differently but meet the needs? A critical review of the course offerings by departments and programmes is warranted.

The great variation in class size is influenced by a myriad of factors, including students' interests, the quality of the instruction, societal changes and programme enrolment. What is the range from ideal or preferred to acceptable size and what are the underlying assumptions that should guide our decisions? What are the determinants of class size and how can we ensure that class size reflects informed decisions based on sound educational principles as well as the most effective use of faculty resources? What strategies can be introduced and evaluated on a short term basis? on a long term basis? To what extent are the predicted fluctuations in enrolment used to assign resources? What improvements can be made? How can we develop the flexibility to respond positively when class size falls outside the range of acceptable limits?

The level of student and the nature of the content influences both mode of instruction and size of the course. Are there graduate courses that should have smaller enrolment? undergraduate courses that should have increased enrolment? How are we addressing the needs of the senior undergraduate students? Should we have specialized undergraduate seminars? What are the trade-offs? For example, larger first level courses and smaller senior level courses or smaller first level courses and more independent study at the senior level? How effective are the mechanisms to ensure that the content of courses reflects the changes in a discipline? Do we have the luxury of having student enrolment to be the indicator of relevance? In some disciplines, the offering of programmes jointly with other institutions is preferable in terms of the availability of qualified resources and accessibility for students. That issue is addressed more fully under inter-institutional relations.

Audio-visual resources are an integral part of the provision of instruction, but there has been little distinction made between basic and preferred requirements. Basic instructional services need to be provided within the instructional budget, but all other services should be on a full cost recovery basis.

In summary, mode of instruction, nature of content, level of student, teaching style of professor/instructor, number of course offerings and class size are interactive factors that need to be addressed. We believe that the mode of instruction should reflect both educational principles, available technology and optimal use of faculty resources. There should be minimal duplication of courses within and across disciplines and the number of course offerings should be minimized. An acceptable range for class size needs to be established that takes into consideration the level of learner and nature of the material to be learned. No one optimal size will be acceptable to all course offerings, but optimal sizes and acceptable limits of deviation need to be identified. Mechanisms need to be in place that will allow the university/department/programme to respond positively when class size falls outside the predetermined limits of the optimal size. The continued development of faculty and teaching assistants with respect to teaching skills, especially modes of instruction, will facilitate the optimal use of resources while enhancing the quality of instruction.

Recommendation 6.11

- That the university fully utilize electronic-classroom linkages, such as those currently existing with the Universities of Guelph and Waterloo, with a view to reducing the number of low enrolment senior undergraduate and graduate courses offered at McMaster.
- Monetary impact: Some savings in direct instructional costs by McMaster offset by some additional operating costs for the electronic link; estimated annual saving of \$100,000.
- Non-monetary impact: Enables students to have access to some specialized courses that otherwise might have to be eliminated or that would not normally be available anyway.
- Routing: Deans, departments, instructors.

McMaster was able to develop the current electronic-classroom link using a grant from the provincial government through the Transition Assistance Funding programme. We need to fully utilize that facility in order for our students to continue to have access to specialized senior undergraduate and graduate courses that we would not otherwise be able to offer at McMaster alone. Further linkages should be developed as needed. For example, the Engineering Faculties of Toronto, Waterloo and McMaster are planning a linkage to facilitate collaborative graduate programming in manufacturing engineering, including linkages with industrial sites.

7 Provision of Non-instructional Services to Students

Currently a number of services are provided to students by various offices: those offices that report to the Assistant Provost (Student Affairs), the Registrar, Financial Services, faculties and to a lesser extent academic departments. These various services can be characterized in three broad groups:

- (i) information processing (e.g., admissions, registration, students records, financial aid, payment of bills);
- (ii) academic counselling, which is conducted primarily by the faculties;
- (iii) services that are designed to support the well-being of students (e.g., Recreation and Athletics, Student Health Services, Student Counselling Services, Student Housing Services, etc.).

7 (a) Information Processing and Academic Counselling

Recommendation 7.1

- That the task group established to review and re-engineer processes associated with student information make its recommendations on Phase One by January 31, 1994, through the NISS (Non-instructional Services to Students) Steering Committee (which comprises a dean, an associate dean, the Registrar, the Assistant Provost (Student Affairs), and the Assistant Vice-President (Financial Services)) to the Provost.

[Note: Phase One of the project deals with modifications to the processing for Level I students. Subsequent phases, to be completed by 1995, will address other processes including those for upper-level students.]

Recommendation 7.2

- That a group comprising two or more associate deans and the Registrar review and make recommendations regarding:
 - (i) academic counselling;
 - (ii) regulations, and the structure of curriculum; and
 - (iii) the division of responsibility between students and the university for registration and compliance with regulations and degree requirements.
- Monetary impact: Implementation of both recommendations will together save in excess of \$500,000 annually, once the full project, which extends to 1995, is completed.
- Non-monetary impact: Some services may not be offered or they may be scaled down. It is hoped, however, that with simpler procedures service might be improved and students would not have to go from office to office in order to obtain related services.
- Routing: The Provost will need to involve whichever groups are appropriate in order to implement the recommendations.

Much of the processing of student information is centred in the Registrar's Office, but that office must work with others in a cooperative manner. The faculties have the ultimate responsibility for admitting students, for counselling them and approving their registrations. In some cases the faculties may need to have advice from academic departments. In other cases responsibilities, such as those to admit specific groups of students, may be delegated to the Office of the Registrar. With this arrangement it means, of course, that those involved in academic counselling are also involved significantly in the processing of admissions and registrations.

On financial matters there is significant interaction among the Registrar's Office, the Accounts Receivable section of Financial Services, and the Office of Student Financial Aid and Scholarships. In addition there are many interactions between the Registrar's Office and other offices that require student information in order to carry out their functions (e.g., Student Housing, Parking, Library).

Many of the processing activities are similar to those that are carried out in other organizations. In many organizations these processes are being re-engineered in order to simplify them and to remove unnecessary steps. For the client the advantages are that there would be fewer places to which one has to go to obtain service and that service can be received more speedily. For the organization costs are reduced. It is now sixteen years since there was a comprehensive review of all the activities and processes that involve student information.

PAGIC has therefore asked the Assistant Provost (Student Affairs) and the Registrar to work with associate deans and others in order to review the way in which processing and academic counselling might be changed and improved.

A major review of this kind is a large task. Phase One of the project will focus on Level I admission and registration. Subsequent phases, which are to be completed by 1995, will address other aspects of processing.

Organizations that are involved in the re-engineering of processes are seeking to bring about radical change and simplification. Generally the objective is to reduce processing costs by at least 20 per cent. PAGIC has provided specific ideas, issues and suggestions to the team that will be conducting this review.

7 (b) Services

Recommendation 7.3

- That the Assistant Provost (Student Affairs) make recommendations to the Provost on the shape, delivery and funding of the services that support student well-being in two scenarios where the contribution from the university operating budget is \$1 million and \$500,000 respectively. In both scenarios the other sources of revenue should be clearly identified.
- Monetary impact: The target is a saving of either \$600,000 or \$1.1 million, depending on which option is chosen.
- Non-monetary impact: Some services may not be offered or may be scaled down.
- Routing: The Provost will need to involve whichever groups are appropriate in order to implement the recommendations.

Those services classified as supporting student well-being are funded from a variety of sources. The contribution from the Operating Budget to Athletics and Recreation and to the student services envelopes (excluding Student Financial Aid) is approximately \$1.6 million. Students and other users pay fees that may be of two types:

- (i) general levy that provides access to activities; and
- (ii) user fees for specific services.

In some cases (e.g., Athletics and Recreation) revenues are generated from programmes such as the Sports Fitness Camp or from rental of facilities. The Student Employment Centre is supported partially by revenues from the Bookstore.

Within the last two years efforts have been made to find ways in which the various units can work collaboratively in order to make more effective use of resources; for example, the Student Health Services and Athletics and Recreation have been able to work together in the area of sports injuries and generate revenue by doing so.

In 1993, some universities introduced new student service fees. PAGIC believes that there should a thorough review of the services and the underlying systems for financing them. For this reason the Assistant Provost (Student Affairs) has been asked to ensure that the review is conducted and recommendations made to the Provost by January 31, 1994 so that appropriate action may be taken for the 1994–1995 budget.

8 Supporting Services

There are many services and service units at McMaster. Many of them are addressed in preceding sections, for example, Section 3 (Revenue Generation) and Section 7 (Provision of Non-instructional Services to Students). There are, however, some major services and service units that are not explicitly mentioned elsewhere. Of these, four—academic and non-academic office support, computing services, financial services, and physical plant—are discussed in this section. Others could be identified, though it is probably easiest to note that many of the principles we espouse as being appropriate for the four we do examine apply just as obviously to those we do not analyze.

We are firmly of the opinion that a guide to the activities of service units should be set out clearly for each such unit by the Senate Resources and Accountability Committee (SRAC). As an indication of what we believe should be taken into account by SRAC, we offer the following recommendation.

Recommendation 8.1

- That SRAC,
 - (i) determine which services should be supported (that is, substantially subsidized) by the university and which others should be operated on a user-pay basis;
 - (ii) put more control of resources in the hands of the consumer (for example, by returning some research overhead funds directly to the researcher);
 - (iii) identify and use appropriate benchmarks for support units;
 - (iv) ensure that service units operate on a level playing field, so that consumers can make the most effective use of their limited resources (and, where appropriate, take their business off campus).

More specifically, we suggest that the following steps should be followed. SRAC should, in each case:

- (i) identify the range of services that are, and should be, provided in support of whatever academic and non-academic activities are relevant in any particular case. Who are the clients for each service? What services are basic and should be provided to all clients (the client group may be students, or faculty, or support staff, or some combination, depending on the service in question)? What services should be considered optional?
- (ii) for each service, identify the bare minimum standard, the ideal, and a compromise that is affordable (we may not get what we want, but we should want what we get);
- (iii) determine if existing services are being provided effectively and efficiently;
- (iv) to determine for what services, and at what level, some form of cost-recovery makes sense;

- (v) ensure that the academic community has adequate input to committees and administrators with respect to monitoring performance, suggesting corrections where appropriate, and revising goals;
- (vi) encourage the service organizations to set clear goals and standards and to communicate these to faculty, staff, and students.

With this having been said, we turn our attention to specific forms of supporting service.

8 (a) Office Support

We believe the following questions to be appropriate:

- What work is being done where, for whom, and why?
- Should it be done at all?
- Can it be done better or more easily?

There are at least three reasons for asking these questions in regard to office support:

- external financial constraints;
- significant technological advances that have altered the means of delivery of office services; and
- the long (indefinitely long, to many) time interval since an in-depth, system-wide review has been conducted.

We must preface our remarks by noting that activities vary widely across offices, partly because of the functions of a particular office, and partly too because priorities are different in different offices. There are, though, some common threads, and what follows discusses these in the context of the three questions posed at the outset.

For each broad area of office support, we propose that a standard of office support should be defined, in light of which there should be a revision, and possibly an elimination, of some current practices. As an example, this may entail establishing a minimum standard for hardware and software, and the means to train faculty and staff according to this standard. It may be necessary to find a way that the acquisition of computer hardware and software can be partially funded. In short, the goal here is to ensure that dependency on staff is significantly reduced in those areas where the changes in technology make this feasible and desirable.

The modern personal computer or workstation, together with access to a modestly priced laserprinter, have completely revised the ways we prepare documents of all kinds. Many individuals already prepare drafts through final versions for all of their own correspondence, for research papers, and for course work.

On the other hand, many of us are aware of inefficiencies and bottlenecks in the university that reduce our ability to function effectively. There often appears to be a proliferation of bureaucratic layers, with the accountability for the delivery of the service in question

inappropriately assigned. As well, it is by no means clear that the deployment of office support staff in departments (and other comparably sized units) is optimal, both with respect to the delivery of services and for staff career development.

With regard to support staff in departments, for example, it will be necessary to seek more flexible types of organization, just as it is with faculty. As departments change, and as electronic facilities such as voice mail and electronic mail alter the requirements for central secretarial support (in which context, see also Recommendation 8.3 below), the need for support staff in departmental offices will undoubtedly decline. If staff are thought of as employees of the department, opportunities for relocation are almost non-existent. Rather than deal with staff reductions solely within each department, it would be better to expect that the dean's office can assist in the movement, temporary or permanent, of staff from one department to another as vacancies occur or workloads within the departments vary. As part of the effort to retain people in the face of decreasing workloads, staff members should also be offered the possibility of eight- or nine-month positions, or three- or four-day workweeks, or other flexible employment opportunities, while still retaining permanent employment with the university.

Though the foregoing discussion uses departmental offices as an example, similar issues extend to all forms of office support. For example, in the interactions between central administrative and departmental offices, there probably exist processes that are unnecessarily time-consuming or irritating and should therefore be reduced or eliminated. We have in mind particularly ones that involve an intermediate step from computer to paper or from paper to computer, such as occurs in the placing of purchase requisitions.

Our specific recommendation is directed at all those responsible for areas of office support on campus.

Recommendation 8.2

- That (i) the deans, in consultation with their chairs, and (ii) others in comparable positions (in both academic and non-academic areas), in consultation with those reporting to them, review the arrangements for the provision of office support in order to achieve optimal use and development of human resources by taking into account: the possibility of sharing resources, the opportunities for providing new learning experiences for staff, and the changes in technology that have occurred and are forthcoming.

One important consideration to be borne in mind once changes that might result from this review are put into effect is that of determining where ultimate responsibility lies. For example, if, as seems reasonable, it should be resolved that, voice mail will become the default method of leaving messages for individuals, secretarial staff cannot generally be held accountable for passing on telephone messages.

8 (b) Computing Services

The widespread use of electronic mail, like the imminent arrival of campus-wide voice mail on the telephone system, has the potential to change greatly the ways in which faculty, staff, and students communicate. For example, it is already the case that, in many departments,

all or most faculty and staff are kept abreast of a variety of issues (from the mundane to the strategic) almost entirely by e-mail. In courses, we can and should expect more e-mail communication with students both directly and through electronic bulletin-board services. With this in mind we offer the next recommendation.

Recommendation 8.3

- That Computing and Information Services (CIS) proceed expeditiously to complete the campus network by providing ethernet connections, free of charge, in the offices of all faculty members and appropriate members of staff (in both academic and non-academic areas). Any of these individuals still without an electronic-mail account will be provided with one, and a system of distribution lists will be developed and maintained. Effective July 1, 1994, university business at all levels will be conducted primarily by electronic mail and it will become the responsibility of faculty and staff to monitor their electronic-mail accounts on a regular basis.

Monetary impact: A one-time expenditure of \$300,000 to provide the necessary connections (though not the ethernet cards; these, like the personal computers, will remain the responsibility of the individual to provide), the additional mail servers that will be required, and the upgrading of the modem pool. The initial cost will be offset in the longer term by savings realized as a result of other recommendations (e.g., Recommendation 8.2) that will require the implementation of this recommendation if it is to be effective.

Computing services involves more than simply the provision of a communications network of course. Apart from its responsibility to provide administrative computing, Computing and Information Services also provides instructional computing (clusters of personal computers and printers), research computing (system administration, advanced software expertise, but for several years now no actual computers), and limited support for (though not provision of) computing down to the departmental level.

Recently, an external review of CIS was conducted, the report of which we considered. Our recommendations follow naturally from the discussion in this document, and we therefore offer no supporting commentary in our report.

Recommendation 8.4

- That the Provost review the organization chart for CIS, with specific consideration of the roles of the Assistant Vice-President (Information Systems and Technology (IST)) and the Director (CIS), and the functions of the middle management layer.

Recommendation 8.5

- That, in line with the recommendations of the recent external review, the Provost, Vice-President (Administration) and the Assistant Vice-President (IST) establish a single committee, along the lines of the University Library Users' Committee, to oversee all matters relating to information services and technology on campus. All existing CIS planning and advisory committees will be disbanded.

Recommendation 8.6

- That, as soon as this committee is established, the Assistant Vice-President (IST) report to it on the following:
 - (i) a plan for better communications with the user community, which would include a clearer delineation of responsibilities;
 - (ii) the provision of support for research computing;
 - (iii) the desirability of further devolution to the faculties of the budget for instructional computing;
 - (iv) the desirability of transferring the budget and responsibility for administrative computing to the appropriate units in the administration; and
 - (v) the desirability of transferring the budget and responsibility for the computerization of the library catalogues and services to the library.

8 (c) Financial Services

No specific recommendations are presented, because an external review is due to be conducted in November 1993 under the auspices of the President's Budget Committee (PBC). The review will focus on offices like Financial Services, Purchasing, Analysis and Budgeting, and Investments, and those who use the services will be consulted. Attention will be given to the processes that are used and the way in which information is provided throughout the university.

Following the review the Vice-President (Administration) will be responsible for making recommendations to PBC. A target base reduction of \$100,000 should be used. PAGIC believes strongly that further work must be taken to build upon the efforts of recent years to simplify procedures and to improve service in ways that are identified below.

In recent years a number of changes have been introduced and these have enabled reductions in staffing to occur. New systems have been designed or purchased: the new Accounts Receivable system makes provision for the calculation and recalculation of student fees thereby eliminating manual effort. A software package has been purchased to support the purchasing function and the system has been extended to meet the needs of Accounts Payable. Accounting information is available online to account holders. Electronic links off-campus have been established in order to obtain information and to produce foreign currency bank drafts. The development and redesign of processes must be continued. Increased cooperation with banks and other external agencies should provide opportunities for using new technology such as electronic data interchange.

PAGIC believes strongly that the Vice-President (Administration) should ensure that further modifications continue to be made and that the following objectives, principles and actions should guide both the external review and future work:

Objectives

- (i) Establish financial processes and services that are efficient and effective in terms of resource utilization, accessibility of information and responsiveness to changes within

the internal and external environments.

- (ii) Streamline functions, eliminate duplication and support financial responsibility at the level of departments, faculties and the university as a whole.

Principles

- (i) Financial responsibility has to devolve to the departmental level and chairs and faculty deans should have readily accessible information that can be discussed with faculty members.
- (ii) There should be minimal duplication of services.
- (iii) The reporting process should allow departments, faculties and the university to be responsible and accountable, but should not be excessive. A minimum of reports with information available on request should be the norm.
- (iv) Only basic-level services should be provided from operating funds. Enhanced services may be provided on a user-pay basis.

Actions

- (i) Review all financial services and identify the basic services and how they should be provided and by whom.
- (ii) Obtain information on financial expertise existing at the departmental and faculty levels and develop mechanisms to determine whether the departments and faculties have the expertise required.
- (iii) Review whether it is appropriate to separate research accounting from the accounting functions carried out by the Financial Services office, and identify the costs and benefits of the options.
- (iv) Review the existing services and identify logical groupings and how those services could be provided more effectively and efficiently, e.g., all services relating to students.
- (v) Review the services offered to individual faculty and identify alternatives or means by which those services could be handled more effectively and efficiently.
- (vi) Review the financial services associated with investments and develop alternate systems that will enhance the services.
- (vii) Review the means of providing information so that the appropriate bodies can make informed decisions which take into account costs and benefits and availability of funds.
- (viii) Evaluate the financial processes and services for payroll and personnel and determine the most efficient and effective process/services within the context of financial services as a whole.

- (ix) Evaluate the financial linkages between the central services and faculties/departments and identify areas in which there is duplication or opportunities for enhancement.
- (x) Identify technologies that are available and should be used to enhance the effectiveness and efficiency of the financial processes and services.

8 (d) Physical Plant

Recommendation 8.7

- That the Director of Physical Plant and the Director of Planning and Construction work together to achieve base savings of at least \$250,000, to maximize the proportion of resources devoted to the delivery of service to clients, and to maintain or improve the level of service. Any savings achieved in excess of \$250,000 should be devoted to meeting the needs arising from deferred maintenance.
- Non-monetary impact: In order to achieve the target savings it will be necessary to simplify procedures and improve the systems that support the two departments. If these changes are made effectively, the quality of service should also be improved. It is anticipated that some reorganization will be required in order to focus on the delivery of service and to make most effective use of the talents of two departments.
- Routing: The recommendations of the two directors will be made to the Vice-President (Administration) in January 1994.

The Physical Plant Department is responsible for the maintenance of buildings and grounds, for the utilities supplied to the hospital and the university, for cleaning, and for receiving and transporting goods. There has been a significant reduction in staffing through a combination of reduced service and improvements and efficiency. Major reductions in energy conservation have been achieved particularly in the last four years. A waste reduction programme has offset costs the university would have encountered from dumping fees, which have increased dramatically.

The Planning and Construction Department is responsible for organizing and overseeing the construction of new buildings and the large renovation and maintenance projects. The university is completing a major capital expansion programme that was planned in 1986 and carried out in the intervening period. Two major projects are planned in the next three to five years: redevelopment of the Hamilton Teachers' College building and a University Centre. The department has developed a computerized information system that replaces the engineering drawings of the past and captures data about buildings and rooms within them. Such a system has facilitated the receipt of information from architects, and it is used for design projects. Staffing has been reduced as the major projects have come to completion.

The two departments are responsible for related activities and occupy the same building. The pause in major building projects provides an opportunity for the two departments to work together in order to develop a more effective use of resources. The directors of the two departments have been asked by PAGIC to work together to develop a plan for increased cooperation.

Since July they have examined:

- Areas of duplication where one department can perform the work required for both. These include but are not limited to bidder qualifications, handling of building permits. Other areas being examined include work planning and scheduling.
- The possibility of providing services to external clients in the broader public sector. This would provide a source of revenue; it would also be consistent with the urging of government for greater cooperation among publicly funded agencies.
- The use of computer networks to improve the efficiency of both departments and to make this technology available to other university departments. (The information system developed by Planning and Construction is used currently by Environmental Health and Safety for recording information about the location of hazardous materials.)
- More efficient deployment of human resources in order to improve customer response time and to obtain greater productivity.
- The review by the two directors will form the basis for the recommendations that are to be made by the Vice-President (Administration).

A PAGIC's Terms of Reference

The terms of reference for PAGIC were communicated to the President's Budget Committee on May 14, 1993. They included the following:

1. The Provost's advisory group in conjunction with PBC is to examine all university operations and activities without restriction, except Board and Senate governance (as defined in the McMaster Act). Examples include alternate income sources, internal organizational structures, decision-making, remunerations structures, societal expectations, support services, academic programmes and ancillary operations.
2. The strategic plan is the primary reference document regarding McMaster's institutional objectives and priorities.
3. The effectiveness of overall university-wide processes are to be addressed to as great an extent possible, rather than focusing on narrow subdivisions of work.
4. Quality concerns should be given a high place in considering potential actions and initiatives.
5. University activities will need to be assessed in terms of necessity to meet specific university objectives while recognizing that regulatory requirements do govern the nature of some activities.
6. The Provost's advisory group will begin working immediately and will attempt to identify some initiatives during the next month or so. However, the primary objective is for the action plan to be completed by the end of August.

In addition, the terms of reference contained the following statement on financial objectives:

The initiatives endorsed and approved by PBC through this process should ensure that the university's budget is in balance over the three-year period (1993–1994 through 1995–1996) and that there are good prospects for continued financial stability after that period. Decreased reliance on government funding is one of the specific objectives to be achieved.

B The Need for Change

B.1 External Influences

Even with the fiscal constraints introduced by the provincial government this past spring through the expenditure control programme, the social contract, and the provincial budget, Ontario continues to face a mammoth debt burden. As a result, we are likely to see more government fiscal measures to deal with that situation rather than a resumption of previous patterns of growing expenditures. The message for McMaster and other Ontario universities is clear: we can expect to see further reduction in the provincial transfer and should try to develop alternative income sources to the largest extent possible.

There has been a simultaneous and not unconnected growth in the public expectation that universities be more accountable for their activities. Members of the public, at a time when money is exceedingly tight, want to see value for money. Universities must therefore be more responsive to concerns about how the public funding allocated to universities is utilized. The quality of our instructional programmes is where the public gaze is directed; universities have had little success in increasing public awareness of the important role of their scholarship and research activities. For research-intensive institutions like McMaster, this has serious negative implications for both direct and indirect research support.

B.2 Internal Environment

The McMaster community has been broadly aware of continuing cutbacks over a number of years. Yet the institution has managed to survive each cutback with little overt long term effect. Through various cost-cutting measures, the annual budgets have been approximately balanced: there is no significant cumulative deficit. Some members of the community have interpreted this history to mean that, in some mysterious way, money will always be found to solve our financial problems without the university having to do very much to change its ways.

Others have recognized the signs of decline: higher student/faculty ratios, fewer faculty and staff replacement appointments, more pressure on faculty time and less money for instructional supplies, research support, library acquisitions and the maintenance of our buildings and grounds. Yet, despite a recognition that simply cutting costs at the margin cannot continue indefinitely, there has been little communal will for fundamental restructuring. Recently, though, there has been an observable shift in attitudes towards a recognition that we must make fundamental changes. This has undoubtedly provided a more receptive environment for the activities of PAGIC than might otherwise have been the case.

The large majority of staff and faculty continue to work hard in McMaster's interests in spite of our increasing financial difficulties. Nevertheless, we must acknowledge that there has been a noticeable decline in morale during the past few years. This is most noticeable among support staff, many of whom fear that constraints will ultimately mean the elimination of their positions. They are concerned that the university pays too little attention to issues such as job security and training. They often feel that their contributions are not valued and that, when things get really tight, the predominant influence of faculty will result in staff rather than faculty positions being eliminated. The decline in morale among faculty shows up in

different ways. Some have become cynical about the directions taken by the university's leadership in these difficult times. Others choose to concentrate on their own individual academic responsibilities and have consciously reduced or eliminated their contributions to university service and governance.

With respect to the strategic plan, the community's attitudes range from support through ambivalence to cynicism. One source of cynicism is that the plan identifies things McMaster should be doing but does not identify those which we should stop doing, that is, it does not recognize the need to make hard choices and seems more like a wish list than a guide to decisions. Others feel that the plan is largely a public relations exercise. Still others have expressed the view that the important objectives are vacuous. Nevertheless, it must be recognized that considerable progress has been made along the plan's directions during the past two years, in spite of an increasingly difficult financial situation. In its work, PAGIC has taken the view that, while the plan has served to indicate directions, the need to make hard choices is very real and that a considerable proportion of our work should be to assist the university, through both its academic and support units, to make those choices.

It is appropriate in this context to comment on some other dimensions of the internal environment, particularly as they relate to the readiness of the McMaster community to accept, and even embrace, change:

- Many faculty and staff feel that there is a mismatch between the responsibility delegated to them and their authority to act, that is, a lack of empowerment.
- There is a serious lack of communication; people want to know what is happening and why certain actions are being taken or not taken. They also want to have supporting information at hand for analysis and evaluation.
- Many individual faculty and staff do not have any motivation or incentive to contribute positively to change; they perceive that the system at McMaster is sluggish and that it is hard to make things happen.
- Human resources have been identified as a key dimension; McMaster relies almost entirely on those resources to achieve its objectives and must cultivate those resources much more carefully in order to function more effectively; staff and faculty should find McMaster to be a working environment that values their individual contributions.
- Decision-making structures are perceived to be inadequate in many respects; they are slow to respond and committee processes are often perceived to avoid accountability.

This downward spiral must be arrested and reversed. The current funding climate is obviously not propitious, but precisely because of this, we cannot afford failure. In view of the foregoing comments about the internal environment, it is clearly not enough to initiate change by force. We have therefore identified devolution and incentives as our vehicles of change. It is our belief that this approach represents the best way forward for the maintenance, and enhancement, of McMaster's academic excellence in the face of a rapidly deteriorating financial situation.

C The Financial Objective

After the announcement of the government's expenditure control and social contract initiatives, it was decided that the President's Budget Committee (PBC) should develop a balanced (interim) budget based on the assumptions and conditions in place prior to those initiatives. The Provost and other vice-presidents, in consultation with the Chair of PBC (Peter Sutherland), presented such a budget first to PBC, and then to the Finance Committee; both approved the interim budget. Approximately \$1 million to \$1.5 million in one-time adjustments were made, and measures to deal with this outstanding problem on a continuing basis needed to be included in PAGIC's financial objectives.

The remunerations agreements reached with the various McMaster employee associations and union locals under the terms of the Social Contract Act have enabled the social contract fiscal target (reduced to \$5.6 million because of reaching these agreements) to be met almost entirely by reduced compensation costs. Consequently, PAGIC's financial objectives do not include any costs associated with the social contract.

Subsequently, the effect of the provincial government's expenditure control and budget measures was to impose an additional burden on the university's 1993–1994 operating budget of approximately \$2.5 million, including the impact on Health Sciences arising from operating grant reductions but excluding impacts from other sources of funding, particularly from the Ministry of Health.

Furthermore, it is already clear that the various measures taken earlier this year have not solved the provincial government's fiscal problems. It would be premature to make a detailed projection, but it seems prudent to assume reductions of at least \$1 million to \$2 million during the next several years. Also, McMaster has a deferred maintenance problem of a significant magnitude. This arises from inadequate expenditures from our operating funds, over a number of years, to ensure that buildings remain in good condition. Capital grants from the province have not been able to deal with that problem and these grants will likely decline rather than increase. McMaster nevertheless has an institutional responsibility for deferred maintenance, as evidence of which we note that the report of the OCUA Task Force on University Accountability recommended:

that each university have a current assessment of the costs of deferred maintenance and renewal, and that the governing body take these costs into account when reviewing the institution's financial plans and when approving the annual operating and capital budgets.

It is thus clear that McMaster must include deferred maintenance costs in its financial plans; these costs are estimated to be in the range of \$1 million to \$1.5 million annually.

Finally, though our recommendations include initiatives with respect to a resource allocation system, it is clear that a dynamic institution requires some flexibility in allocating operating funds when phasing out old programmes and implementing new programmes, or when making new appointments to replace retiring faculty members. Consequently, PAGIC recognizes that our financial objective should not only aim to cover recognized (or estimated) increased costs. Specifically, we recommend that at least one per cent of the annual operating budget, that is approximately \$1.5 million annually, should be set aside as a flexibility fund.

Taking all this into account, PAGIC estimates that a target of \$7 million to \$9 million (annually) needs to be achieved from the implementation of its recommendations. Action on the budget for 1993–1994 has already been taken. Consequently, the PAGIC measures are intended to have an effect in 1994–1995 and subsequent years.

D Relative Costs per BIU Taught, by Department within Faculties

In considering the information in this Appendix, it is important to keep in mind the fact that PAGIC has not proposed to allocate resources to academic units on the basis of a formula contained here. Rather, the information described in this Appendix is intended to be used as one part of the information to be considered, along with departmental quality and contributions, in allocating resources.

The relevant information on relative costs by department is contained in Table 1. The Table is based on data for 1991-92, because that is the last year for which complete information is currently available. For applications of this method for decision-making, an average of several year's data should be used.

This text simply lists the primary assumptions used to produce Table 1. Details of the calculation procedures, together with discussion of some of the ramifications of the assumptions, or of alternative assumptions, are contained in a background paper.⁸ The assumptions are listed in three sections below, dealing first with the choice of Basic Income Units (BIUs) as a measure, then with the allocation of BIUs to departments, and finally with the calculation of costs.

D.1 Selection of BIUs as a Measure of Workload

BIUs are the province's means of identifying the relative costs of different types of programmes. For example, a first-year student in Social Sciences (and in Humanities and Science) entitles the University to 1.0 BIU for the full year of study. A PhD student, in any discipline, can (within certain limits) entitle the University to 6.0 BIUs per year. The university receives its provincial funding grant on the basis of BIUs, not directly on the basis of enrolments. Hence in attempting to match costs with instructional loads, it was deemed both sensible and prudent to measure the instructional loads in terms of BIUs.

D.2 Allocation of BIUs to Departments

There are two types of information on which one might base departmental BIU calculations: programme enrolments, or course registrations. The provincial government BIU tally is based on programme enrolments, so those numbers are immediately available. The instructional load on a department, however, is felt in terms of course registrations. The following assumptions were used in moving from the programme-based BIU values for each department to the instruction-based ones.

- 2.1 Course registrations are (regularly, by the Office of Analysis and Budgeting) converted to Full-Time Equivalent students (FTEs), on the basis of the average course loads

⁸The background paper, entitled "A measure of relative costs for use by Senate and PBC (or SRAC)," is available free of charge through the Bookstore, from the customer services desk or by calling extension 22422. Copies of the paper will be printed on demand, using DocuTech, the technology recently adopted for custom courseware. Orders will be filled within 24 hours, or 48 hours if mailing to an on-campus address is requested.

carried.

- 2.2 Service teaching was calculated as the difference between the undergraduate FTEs taught in a department and the Fiscal Full-Time Equivalent students (FFTEs) enrolled in the department's undergraduate programmes. A negative value from this calculation indicated a department that, in net, drew upon service teaching rather than providing it.
- 2.3 First-year instruction was handled separately. All first-year teaching was considered to accrue 1.0 BIUs, which is what all students enrolled in Humanities, Science, and Social Sciences (where the great majority of first-year teaching occurs) are deemed to cost by the provincial BIU weighting. The BIUs that arise from all first-year students were allocated to departments teaching first-year courses, in proportion to the enrolment in those courses.
- 2.4 Following the crediting (and debiting) of first-year teaching, the amount of service teaching done (or drawn upon) above level 1 in undergraduate programmes was calculated for each department, based on original service teaching less first-year service teaching. BIU transfers for teaching above level 1 were done on the basis of the average programme weight in the department concerned. This was calculated by dividing the total BIUs registered in a department by the total FFTEs for those BIUs. Honours students are given a higher BIU weight by the province than 3-year degree students, so a department with a higher proportion of honours students will have a higher departmental average programme weight. In short, treating service teaching in this fashion means that a department receives credit for service teaching at the same rate as the average credit they receive for teaching students in their own programmes. Likewise, departments drawing on service teaching pay the same BIUs for it as they would receive if it were taught in their own department.
- 2.5 The final step in allocating BIUs to departments was to distribute any faculty general BIUs (as from irregular or continuing students, or an excess remaining from level 1) to the departments within the faculty. This was done in proportion to the departments' programme BIUs, on the grounds that this was a good indicator of what had drawn students to the faculty initially.
- 2.6 Total BIUs credited to a department then consisted of the sum of the BIUs earned through teaching courses, plus BIUs for students enrolled in graduate programmes in the department.

D.3 Allocation of Costs to Departments

- 3.1 The starting point was the operating budget for each department or unit.
- 3.2 Cross-teaching (e.g., the teaching within Arts and Science done by members of other departments) was charged at an approximation of real costs, as follows. First, the average instructional load was assumed to be 18 units, covering undergraduate and graduate courses, and graduate supervision. Second, it was decided to use the average

salary (plus benefits) of a faculty member in the providing faculty. Thus, as an example, one-third of the average salary of a faculty member in Humanities would be charged to an interdisciplinary unit (or other department) drawing on 6 units of teaching from a member of the Department of English, and that department would be credited a like amount.

- 3.3 In the case of graduate TAs performing their instructional duties in a department other than the one they are registered in, costs were partially transferred to the department receiving the service. The transfer rate used was the middle (non-student) rate, in recognition of the fact that the TA service could have been purchased at that price, and that the sending department receives some benefit in terms of graduate student support from the higher rate paid to a full-time graduate student TA.
- 3.4 Faculty general costs were allocated to departments in proportion to the regular departmental costs.

Table 1: Relative costs per BIU taught, and data used to derive them for academic year 1991-1992

	Column 1	Column 2	Column 3	Column 4	Column 5
	Total of costs after allocating Fac general to Depts	net BIUs taught after taking into account service teaching	\$/BIU (Column 1 divided by Column 2)	Ratio of Faculty \$/BIU to University average \$/BIU	Ratio of department \$/BIU to Faculty average \$/BIU
ARTS & SCIENCE	591,347	156	3794	1.162	
BUSINESS	6,851,182	1987	3447	1.056	
Chemical Engineering	1,787,236	422	4232		1.295
Civil Engineering	1,933,663	642	3013		0.922
Elect. & Comp. Engineering	2,609,263	970	2690		0.824
Engineering Physics	1,469,786	398	3692		1.130
Materials Sci. & Engineering	1,865,669	392	4758		1.457
Mechanical Engineering	1,818,714	691	2631		0.805
ENGINEERING	11,484,332	3516	3267	1.000	1.000
Art & Art History	753,527	198	3807		1.121
Classics	861,351	284	3037		0.894
Dramatic Arts	532,553	155	3425		1.008
English	3,496,465	1105	3164		0.932
French	1,677,471	379	4426		1.303
History	2,323,572	785	2960		0.871
Modern Languages	1,972,733	391	5045		1.485
Music	1,019,604	253	4035		1.188
Philosophy	1,660,177	659	2519		0.741
HUMANITIES	14,297,452	4209	3397	1.040	1.000
Biology	3,502,107	1128	3104		0.986
Chemistry	3,716,523	963	3858		1.226
Computer Sci. & Systems	1,630,676	406	4018		1.276
Geography	2,432,286	956	2545		0.808
Geology	1,841,212	229	8054		2.558
Mathematics & Statistics	4,337,318	1578	2748		0.873
Physics & Astronomy	3,517,142	743	4734		1.504
Psychology	3,270,840	1699	1925		0.611
SCIENCE	24,248,105	7702	3148	0.964	1.000
Anthropology	1,727,899	641	2696		0.830
Economics	3,443,400	774	4448		1.370
Gerontology	548,119	173	3174		0.978
Labour Studies	360,757	142	2536		0.781
Physical Education	2,030,064	792	2562		0.789
Political Science	2,239,123	624	3591		1.106
Religious Studies	2,020,949	532	3800		1.170
Social Work	1,260,846	230	5490		1.691
Sociology	2,431,898	1040	2339		0.720
SOCIAL SCIENCE	16,063,055	4947	3247	0.994	1.000
FIVE FACULTIES	73,535,472	22,517	3266	1.000	