MINUTES

107th Special Meeting of the Science Faculty Council

Held on Thursday, March 15, 2007, at 2:30 p.m. in 111 Armes

Present:	M. Whitmore (Chair)	E. Worobec	R. Eskicioglu
	A. Gumel	J. Hoskins	G. Woods
	B. Macpherson	G. Krause	T. Berry
	G. Lukács	K. Sharma	G. Williams
	F. Gauvin	J. van Lierop	J. Fiege
	R. Padmanabhan	J. Chipalkatti	L. Wang
	C. Platt	P.N. Shivakumar	J. Birchall
	I. Waters	D. Punter	T. Kucera
	R. Sparling	S. Cardona	B. Southern
	G. Gwinner	P. Blunden	K. Gough
	T. Andres	J. Bate	H. Cameron
	J. O'Neil	S. Whyard	J. Brewster
	B. Johnson	B. Mark	K. Kopotun
	P. Loewen	P. Dibrov	J. McLeese
	K. Scott	J. Page	C. Leung
	E. Huebner	M. Docker	S. Sealy
	R. Thomas	G. Valdimarsson	M. Doob
	S. Portet	M. Piercey-Normore	J. Arino
	B. Hann	T. Booth	F. Schweizer
	X. Wang	T. Hegmann	P. Budzelaar
	J. van Wijngaarden	H. Perreault	A. Gerhard
	T. Schultz	J. Svenne	M. Beringer
	S. Kroeker	J. Sorensen	M. Shantz (recorder)
Guests:	U. Deonauth	J. Stoyko	M. Harris
	C. Juan-Odendahl	M. Langelaar	N. Friesen
	J. McConnell	R. Yunyk	M. Smith
	D. Kunec	T. Smith	L. Romuld
	G. Detillieux	K. Travis	T. Wolowiec
	S. Mullen	H. Aldwyn	G. Sobie
	J. Ogston	V. Matthes	Z. Dankova
Regrets:	T. de Kievit	K. Londry	G. Baldwin
	P. Hultin	M. Sumner	A. Worley
	S. Mandal	J. Sichler	G. Tabisz
	E. Smirnova	C. Kemke	P. Graham
	J. Hare	M. Freund	D. Jin
	G. Robinson	L. Graham	F. Hruska
	N. Hunter	D. Court	

1. Faculty Strategic Plan

Dean Whitmore presented the draft interim Strategic Plan. He also noted that the current draft is very "linear" in structure. An alternate approach would be to focus on the things we do well, and how to build on them. The goal is to have a Faculty Strategic Plan in place by the end of 2007. The presentation is available online at http://umanitoba.ca/science/about/planning.html.

The following issues arose during discussion:

Entry Requirements
- first year students, in general, are often not well-prepared for university
- seems to be a lack of standards
- Aboriginal enrolments are projected to increase and there is a need for entry upgrading
- suggestion to institute entrance exams in Math, however if enrolments decrease may not want to turn away students but rather offer them a means of support (i.e. screening courses, preparatory courses, special programs)
- Chemistry and Math both offer entry level courses with 5 hours of instruction per week rather than 3 hours. These are advised, not compulsory courses, and require additional teaching effort.
- other institutions have compulsory placement testing

Recruitment of Graduate Students:
- should Science be more pro-active in doing something about the increasing fees for international students
- Faculty of Graduate Studies could be more helpful
- how do we compete with places like UBC who offer free graduate student tuition and much more funding

Recruitment of Undergraduate Students:
- make UM the university of choice in the province to attract students
- losing IB students to other institutions in the province
- high school counselors recommending UW over UM
- keep in mind what other universities in the province are doing in their undergraduate programs
- students receive acceptance from UM much later than from UW (example was 6 weeks later than UW)
- take better advantage of Info Days - it needs to be more focused
- Evening of Excellence was more focused and received a good response
- perhaps more talks by professors at Info Days
- more presentations at high schools
- before leaving UM, students should complete an exit survey which could determine success of program and also provide information on job placements

Faculty Recruitment and Retention:

- if faculty opt for half time appointments it will impede replacement of faculty
- more staff needed
- the teaching load at other institutions is lower than at UM, and if increased further it could be a major issue in attracting new faculty

Lack of Funding

- accomplishments severely restricted by resources
- Manitoba is the province with the lowest funding for higher education
- stop spending on programs that are undersubscribed
- maintain pressure on Dean and government to increase funding

Miscellaneous Comments:

- Faculty should offer more interesting courses to the general public (eg. Math in Art)
- too few library resources (eg. Math journals)
- some students may take the easiest route to enter professional schools and if unsuccessful may not have a Plan B.

The meeting adjourned at 4:25 p.m.

An Agenda for Excellence, Innovation and Renewal: Positioning, Planning, Priorities and Projects for the Faculty of Science

Draft Interim Strategic Plan for the Faculty of Science

Part 1: The Setting

1. Introduction and Goals of the Strategic Plan

The Faculty of Science is a cornerstone of the University of Manitoba. Founded a century ago, it is now this university's premiere Faculty, with the strongest and most comprehensive combination of research and teaching. We are among Canada's best Faculties of Science. We offer a full range of undergraduate and graduate programs, engage in a wide spectrum of research, and provide invaluable, expert service to our communities. Many of our staff have won research and teaching awards.

Much of our research is of strategic importance both regionally and nationally, and involves local, national and international collaborations. It spans the full spectrum of biological and life sciences, physical sciences, and mathematical and information sciences. It is funded by the national granting councils, as well as other governmental and business ventures. Approximately 75% of our professoriate hold research grants and, depending on the CFI cycle, we win over $10 million in annual funding.

Since 2000, undergraduate enrollments have increased by over 20%, and graduate student numbers by about 50%. However, it appears that enrollments have begun to fall, and this trend may continue. The Faculty of Science provides in excess of 22% of the university's undergraduate credit hours, and almost 10% of the graduate students, almost all of whom are in research-based programs. Other Faculties depend on us: about 41% of our undergraduate teaching is to first year students, and 26% to other Faculties. Accreditation of Engineering relies on our courses. Teaching to our own students includes general, major, honours, and graduate teaching. Some programs are nationally accredited. There are many interdepartmental programs, many pairs of departments offer joint major and honours programs, there are joint programs with other Faculties. Looking to the future, student numbers will decrease unless we do something to attract more.

Much has changed over the past few years, and much will change in the future. This plan is intended to set forth a coherent vision for the future, and the steps to achieve that vision.

The goals of the strategic plan are to:

1. Best enable all members of the Faculty of Science to pursue successful academic and research careers.
2. Best ensure that the Faculty attracts the students and secures the resources necessary to fulfill its mission and role.
3. Best ensure that the Faculty of Science delivers high quality, modern, innovative academic programs.
4. Create a shared and coherent vision, and set strategic directions for the Faculty of Science.
5. Set priorities for investments and efforts.
6. Enhance the reputation of the Faculty of Science and The University of Manitoba.
7. Set our goals for the next five years hence, identify the steps necessary to achieve them, and measure our progress. This will include a "to-do" list, which may evolve over the coming years.

2. Process: The Development of a Plan

The goal for completion of the Faculty of Science Strategic Plan is December, 2007. Until then, this document will serve as the Interim Strategic Plan for the Faculty of Science. Between now and the final plan, departments will develop their own strategic plans. The Faculty Interim Plan may evolve during this process.

3. The University of Manitoba Strategic Plan

The University of Manitoba's strategic institutional plan, Building for a Bright Future, elucidates five "Institutional Priorities for Success":

1. Provide access to an exceptional education.
2. Attract and retain the best.
3. Be a centre of research and graduate education that makes a difference to our province, our nation, and the world.
4. Provide the human, physical and technological infrastructure necessary for learning and research.
5. Be at the centre of our community: on Manitoba.

The Faculty of Science fully supports these priorities. Our plans align perfectly with them.

4. Values of the Faculty of Science

1. Excellence and innovation in all that we do: research, teaching and academic programs, and service.
2. Open inquiry.
3. Our people. They are the basis of everything we do.
4. Dedication to our students.
5. Research. This is the foundation for quality in teaching and service. The Faculty values and supports both "team" and "individual" research, and both "pure" and "applied". Both are essential. Excellence and impact are the key measures.
6. Diversity.

All staff members are expected to conduct themselves in relations with colleagues, staff and students across the University in such a way as to promote the academic well-being of all concerned. Members of the Faculty of Science treat people with respect, and pass judgment on the work of others only in the proper academic forums. We strive to be helpful, readily contributing our time and expertise for the overall benefit of the academic community. We avoid actions of a disruptive nature as which hinder others from fulfilling their professional responsibilities, or that hinder the Department or Faculty from performing its academic mission. We support and foster the career development of the entire staff.

5. Mission of the Faculty of Science

The Faculty has formally adopted a mission statement. (A revised mission statement may result from this planning exercise.)

Mission Statement: As one of the faculties of the University, the mission of the Faculty of Science is to advance knowledge and culture:

- through education in science;
- through the exercise of scholarship in the creation of new ideas and knowledge; and
- through the dissemination and application of scientific knowledge in response to the needs of society.

From this mission flow the following objectives:

- To teach science from first year level to Ph.D. Our students include those in Science programs and in a wide variety of other faculties and schools. Programs and courses offered include Honours, Major, General, Access for Aboriginal Students, Co-operative, Distance Education, Non-Credit, Developmental.

- To pursue research of international calibre in pure and applied aspects of physical, mathematical, computing and life sciences. To promote areas of strength and to

develop areas of emerging significance. To seek and sign international exchange agreements.

- To provide service to the University, the scientific community and to the community at large, including the public school system, local and national industry, and international development.

The advancement and dissemination of knowledge at all levels are this Faculty's fundamental goals.

6. Strengths of the Faculty of Science

The Faculty of Science is a broad and diverse Faculty, with many strengths. It would impossible to list them all. However, there are broad themes that can be identified.

1. Our number one strength is the quality of our people. They are the foundation for everything.
2. The Faculty of Science is the largest Faculty of Science in the province of Manitoba, and one of the largest in Canada. We are among Canada's best Faculties of Science, with a strong and comprehensive set of academic and research programs.
3. The University of Manitoba is one of Canada's top comprehensive universities with a full range of Faculties, providing a wealth of opportunities for collaborative work of all kinds. We are a research-intensive Faculty in a research-intensive university.
4. Much of our research is of strategic importance both regionally and nationally.
5. We have many strong individual researchers and research programs.
6. We also have strong research themes with multiple researchers working in them. Some of our themes span much of the Faculty and university. These help define areas of special capability.
7. We have a number of unique research opportunities and facilities.
8. Approximately 75% of our faculty, and nearly all our new faculty, hold external research grants.
9. We will soon host 7 Canada Research Chairs, and an NSERC Northern Research Chair.
10. Our staff is in the midst of renewal. We have many new, creative staff members. Over 25% of our academic staff have been replaced over the last five years
11. We collaborate well with other Faculties and institutions, and there is a growing spirit of inter- and intra-Faculty cooperation.
12. We offer a very broad range of undergraduate and graduate programs, and serve students in many programs.
13. Our programs are of excellent quality. Our graduates are highly regarded.
14. We support diversity. Approximately 47% of our students are women. We have a number of Aboriginal Initiatives: Let's Talk Science, provide Access programs in three departments, development sections in others, support for CRYSTAL project,

the Peguis symposium, participation in the Faculty of Medicine's new Center for Aboriginal Health Education.

15. Our students are very supportive. (For example, they voted to double their annual contribution to the endowment fund.)
16. We run a substantial advising office, proud of, and known, for its dedication and service to students.
17. Our staff are active in national and international professional bodies, and serve on the national granting councils. In addition, they provide outreach services to the public in the form of talks, TV and radio appearances.
18. Some of our physical infrastructure is new, and excellent.

7. Challenges Facing the Faculty of Science

1. The number one challenge facing the Faculty of Science is long-standing, gross under-funding. The impacts include:
    - (i) Too few academic and support staff. These numbers have remained flat while teaching has gone up about 25%. They compare unfavourably with the numbers elsewhere. We need academic, technical, and administrative staff. Despite heroic efforts by our staff, we turn away many, perhaps over 2,000 undergraduate course registrations each year. A shortage of technical staff hinders our research, and ability to compete for research funds.
    - (ii) Although we have made progress with our physical infrastructure - EITC is an outstanding example, the Buller renovations, renewal of labs -, the quantity and quality of much of our space remain unacceptable. Much of our teaching equipment is archaic.
    - (iii) We are unable to provide new faculty with research space in a timely manner.
    - (iv) Limited start-up funds prevent us from competing in some areas of research. This, in turn, limits the research dollars we bring in which, in turn, limits our allocations of CRCs, indirect costs of research, etc.
    - (v) Our support for graduate students is unacceptably low. It is among the lowest in the country. The tuition that our students pay is not competitive with what graduate students in science actually pay elsewhere.
    - (vi) Introducing new academic programs faces serious administrative burdens.
2. The University of Manitoba now has (nearly) the lowest entry standards of any university in Canada, but we now have (nearly) the highest standards required for students to stay in good standing. This will impact graduation and retention rates.
3. Years of growth in graduate enrollments have stalled, and numbers have recently declined. This decline started at the same time international tuition increased significantly.

4. Our ability to provide new academic staff with labs and the resources they need to get started is inadequate. There have been unacceptable delays.
5. The Faculty has introduced a number of new programs and options over the years, but there are many opportunities for more. Innovation in programs and program delivery needs emphasis and encouragement.
6. There is potential to work even better as a coherent Faculty, rather than individual departments.
7. We are unable to accommodate all the students who satisfy the prerequisites in many of our courses. Other courses are under-subscribed. We do not always know why. There are mis-matches between student numbers and resources.
8. We do not attract enough Canadian graduate students.
9. The reputation of The University of Manitoba is problematic.
10. A surprisingly large number of students opt for our 3-year degree.
11. We do not celebrate each others' successes to the degree we should.
12. We do not promote the Faculty and our successes as well as we could.
13. Student numbers are falling.

8. Structure of the Faculty of Science

As of 2006, there are eight departments in the Faculty of Science: Botany, Chemistry, Computer Science, Mathematics, Microbiology, Physics & Astronomy, Statistics, and Zoology. In addition, the Faculty operates the Delta Marsh Field Station, the Institute for Industrial Mathematics, the Biology program, and an astronomy program with a physical presence at Glenlea. There are formal and informal research groups, and numerous joint academic and research programs, both within the Faculty of Science and with other Faculties. The office of the dean includes a complement of student advisors, renowned for the service they provide to students.

Effective July 1, 2007, the Department of Botany, the Department of Zoology, and the Biology Program, will combine to form a new Department of Biological Sciences. This is a major initiative of the Faculty of Science. It is being driven by academic reasons, and is one element of the renewal of biological sciences. The other two are the development of new undergraduate programs, within new "thematic areas", and the realignment of research areas, formation of new research groupings and themes, and joint acquisition, and use, of research infrastructure.

Part 2. Planning Assumptions and Strategic Goals

1. Changes in the Environment

There have been a number of important changes in the environment in which the Faculty of Science operates.

1. Major research funders invest strategically. The Canada Foundation for Innovation can provide major start-up packages, but numbers are limited.
2. NSERC funding appears to be under threat.
3. In some cases, research funding relies increasingly on the strength of research groups and available infrastructure, not individuals, and infrastructure support can sometimes be provided to coordinated groups more effectively than to individuals. The research funding environment has shifted towards large-group activities, and in the direction of applied/strategic research. CIHR provides new opportunities for Science researchers.
4. Winnipeg is becoming a center for health and health-related research.
5. Student enrollments have been growing, but may now be heading down, unless action is taken. This applies to both graduate and undergraduate levels.
6. The Aboriginal population is growing.
7. Students today use Information and Communications Technology, and communicate with each other, in very different ways compared with a few years ago. They "breathe" the internet.
8. Graduate tuition, especially for international students, has recently increased significantly.
9. The university central administration appears to be aware that our needs are real.
10. University 1 has changed. Students can no longer automatically transit to Science; they need a GPA of 2.0.
11. Entry to U1 has dropped the requirements of Math.
12. Recruiting needs to be recruiting to programs, not just to U1.
13. There are numerous questions about the 3-year degree. Whom does it serve?
14. The M and W requirements are under review.
15. When academic staff retire, the Faculty needs to argue to retrieve the position. All salary savings, and more, are retained by central administration.
16. The relative numbers of students in each department have changed, a lot in some cases.
17. There are many reasons to seek out partnerships and collaborations of all kinds. Internationalization is a major focus of The University of Manitoba.
18. We have means of renewing infrastructure, but we need to priorize.
19. We have new funding for undergrad labs, both through the enhanced endowment fund and through the budget reallocation.
20. Education requirements for "teachables" now require 3rd year courses.

2. Planning Assumptions

1. We will be able to argue for some additional revenue from the central administration.
2. We need to find more resources on our own.
3. It is unrealistic to assume that we will be satisfactorily resourced in the next five years. The gap is too large to close in this period. Accordingly, we will have to make choices.
4. Student demand will fall, unless we take steps to reverse the trend.
5. The trends in research funding indicated above will continue.
6. All our academic programs will be reviewed over the coming years.
7. We will continue to renew our staff, with approximately constant total numbers.
8. Our staff want to introduce innovations that reflect their interests and abilities.
9. Our new professorial staff will all pursue active, externally-funded research programs and supervise graduate students.

3. Positioning and Vision of the Faculty of Science

We will position and promote ourselves as the pre-eminent Faculty of Science in Manitoba, with a strong emphasis on research and innovation, and a commitment to our staff, our students, and the province we serve. We will promote and recognize excellence in teaching. We will be the Faculty of Science of choice for top students and new colleagues. At the same time, we recognize the importance of serving our evolving province. Our vision incorporates a renewed commitment to excellence, and a new commitment to innovative academic programs. We owe our students the best, most modern and innovative programs we can provide.

Our goals include having our entire professorial staff doing internationally acclaimed research, and a healthy and thriving graduate program. Our combined commitments to research and to our students mean that we must excel in both research and teaching, and that our students must benefit from our research mission.

4. Strategic Priorities for the Faculty of Science

The strategic priorities for the Faculty of Science for the next five years are:

1. Secure a significant increase in resources, of all kinds and from all sources.
2. Provide modern, innovative and excellent undergraduate programs, which meet the needs of students.
3. Create an atmosphere that fosters innovation and experimentation with new programs and program options.
4. Attract students who will be successful while, at the same time, strive to accommodate all qualified students who wish to learn from us.
5. Align entry requirements and academic standing rules.
6. Maintain (or reach) appropriate numbers in each program.

7. Provide programs and support for the growing Aboriginal population.
8. Recruit and retain top new colleagues.
9. Renew infrastructure.
10. Maximize research success of all our colleagues.
11. Maximize research and graduate student funding.
12. Enhance the reputation of the Faculty of Science and The University of Manitoba as a place for excellent students to get an excellent education and do excellent research.

The changes noted above present opportunities to re-define research directions, create innovative research and academic programs, re-define how we position ourselves, and ensure that all these changes benefit our students. Our many new members of faculty bring their own aspirations and creative ideas for the research and academic programs of the future. There are opportunities for innovation in undergraduate and graduate programs. All our programs are being reviewed, and we embrace this process. There are opportunities to work with other Faculties, to mutual benefit. New internal funding allocations provide for some optimism. Major external funding opportunities demand that we make strategic decisions, and so do the constraints under which we work. It is best to address our choices directly, and to make informed decisions within the context of our overall goals.

Part 3: The Next Five Years: Priorities and Initiatives

1. Funding Initiatives

We must seek every opportunity to secure additional funding. Actions will include:

1. Introduction of innovative new programs, program options and courses that will attract students and new funding. All new programs will be carefully costed out.
2. Departments to work with the office of the dean to make strong cases for budget reallocations and incremental staff.
3. Continuing support for NSERC and other grant applications, including mentoring and, where appropriate and possible, financial support.
4. Developing stronger relations with alumni and external organizations.
5. Work with the Office of Development to raise funding. We will identify our priorities and set goals.
6. Departments will seek external funding, for example from Western Economic Diversification.

2. The Undergraduate Years: Excellence, Innovation and Accessibility

The Faculty of Science currently offers major and honours degrees, as well as a three-year general B.Sc. Prior to 2006, entry was available via an automatic transit from University 1, although students with weak academic records entered on probation. This has changed. Students now need a minimum GPA of 2.0 to enter the Faculty.

Students entering from high school are guaranteed access to our first year courses, irrespective of their grades, but students in second year and beyond are not. We turn away many students from our courses, mainly because of a lack of funding, staff, lecture and lab space, and lab equipment.

We have many programs. Many are over-subscribed, some are under-subscribed. Most existing programs will be reviewed in the coming few years. It is an opportune time to ensure that our programs are modern, to introduce new and innovative ones, and make use of the talents of our new people.

However, challenges are imminent. The number of applications has fallen in the last two years. Our new academic standing rules have been raised to, or near, the highest in the country. Today's "problem" may be too many students; tomorrow's may be too few students. In any case, our goal is to attract the best students, and help ensure their success.

Student Success

We will examine relationships between students' high school records and their success at university, and seek to align policies. We will continue to support our students with advising and advisors.

Program Innovations

Our academic programs lie at the very heart of what we do. The development of new ones is a priority. They can be a major tool in attracting excellent students, and building our reputation for both excellence and innovation.

1. The Faculty will make a special effort to stimulate the development of new programs.
2. We will review our programs with a view to ensuring there is enough breadth in them. The review of the "M and W" requirements opens the door to this discussion.
3. We will work with other Faculties, as appropriate, to develop new programs.
4. We will look at various programming possibilities: majors, minors, specializations (e.g. astronomy), multi-department minors.
5. Programs with low enrollment will be examined, and the reasons for the low enrollments identified. For example, do we sometimes require too many courses? Why does biotechnology have such low enrollments?
6. The new Department of Biological Sciences opens the door to new ways of thinking about academic (and research) programs. A number of possibilities have already been identified. Some may involve other departments.
7. Is there a role for an integrated first year science program, e.g., a 9-credit hour biology/physics/chemistry course?
8. There is a long list of possible new programs that could be considered: mathematical biology, bioinformatics, various thematic areas of biology, forensic science, biophysics, biological materials, soft materials, systems biology, ...
9. We will pursue innovative, effective, uses of ICT.

Research-Enhanced Educational Experience

As we position ourselves as a research-intensive Faculty in a research-intensive university, it is important that the benefits of this emphasis accrue to our students. Currently:

1. Virtually all our graduate students are in research-based programs.
2. We offer undergraduate thesis options in some honours programs.
3. We typically engage about 45 undergraduate students in summer research projects, jointly funded by NSERC fellowships and faculty research grants.

4. Until recently, we funded an additional 16 undergraduate students in summer research projects jointly funded with Faculty funds and faculty research grants; this could be re-examined.
5. We support undergraduate and graduate students attending conferences.
6. Faculty hire some undergraduate co-op students to do research as their co-op placements.
7. Some of our senior undergraduate courses are research-based.

All our honours programs will be examined, with a view to introducing thesis options in as many as possible. Other opportunities for using our research strength to enhance the undergraduate experience will be identified.

Three-Year General Degree Program

Many universities outside Ontario do not offer three year degree programs. Where they are offered, student numbers are generally lower than they are here. It is not clear what students it attracts or serves, nor how well it serves them. Changes to teacher education requirements, at least, imply needs for raising the minimum science requirements. On the other hand, it is a very popular degree, and treated on the same footing as four-year degrees for entry into many professional Faculties.

We have recently proposed that this program require two courses beyond second year. The Faculty will review the 3-year degree program, including the following questions and options:

1. What is the student profile for this degree?
2. Is the offering of a 3-year degree consistent with our positioning ourselves with a focus on excellence?
3. Do we need to keep it, given the university entry requirements and our academic standing rules?
4. Should it be kept, changed, eliminated,...?

Programs and Options for High Achievers

The Faculty will examine what we can do to recruit, retain and serve the best students. Options include: special courses, identifiable sections of multi-section courses available to those with the best academic record, student cohorts, direct entry to Science, and others.

Recruitment Initiatives and Entry to Science Programs

We have recently created a new "Recruitment CD", and are working more closely with the Admissions Office. We need to recruit aggressively. Some other Faculties have a "direct entry" option, available for the very best high school students.

With the changes to University 1 and its relationship with the Faculties of Arts and Science, the elimination of Math as an entry requirement to University 1, and the introduction of a minimum GPA of 2.0 for entry into the Faculty of Science, it may be time to introduce additional formal entry requirements into the Faculty of Science. Balancing this, and to enhance recruitment, the Faculty will re-consider options for entering the Faculty. They include:

1. Status quo.
2. A core of required courses, or different "packages".
3. Admission process, with option of direct entry for high school students with very good records.

Entry to Science Courses

We are currently turning away students from many first and second year courses. In some instances, large numbers of students are denied access. Among the students denied access are, possibly, some very good students, and our own Science majors. At the same time, we reserve places for students in other Faculties. We have been striving to increase capacity, and will continue to do so, but it is largely limited by space and so is beyond our control. The Faculty will:

1. Continue to identify the enrollment limiters and work to reduce them.
2. Examine registration priorities and change as appropriate. In particular consider implementing priority registration based on previous academic record (GPA), whether or not students are Science majors, and if the courses are needed in order to graduate.
3. How can we attract students to those courses in which we have capacity?
4. Are there academic considerations that would induce a re-balancing of some enrollments?

Transfers and Transfer Credits

The Faculty will continue to pursue agreements with other universities to attract good students, in particular to our upper level undergraduate and graduate program.
The Faculty will work with appropriate units to improve the transfer credit processes.

M and W Requirements

If the university eliminates the M and/or W requirements, should we institute our own as a Faculty requirement?

Supplementary Exams

Supplementary exams can provide a way of helping students pass who almost passed in a previous attempt. If organized to coincide with deferred exams, they do not require the

setting of a special exam. The Faculty will examine the introduction of supplementary exams, coupled with a suitable fee payable to the Faculty.

Student Discipline

The Faculty has recently updated its disciplinary procedures, but this will need continued monitoring.

3. Aboriginal Issues

The Faculty of Science offers a number of special sections of courses. Very recently, we have put a major effort into the Peguis Science and Technology Symposium. We will undertake a needs and opportunities assessment of this important area, and respond accordingly.

4. Strategic Research Plan

The Faculty of Science does not, currently, have a formal Strategic Research Plan. We have, however, made decisions on areas for Canada Research Chairs, and we have been required to partially rank various grant applications and CRC nominations with reference to our Strategic Research Plan. Departments make decisions on what areas to pursue. All of this implies that we have, *de facto*, an emerging plan Faculty Plan and departmental plans, even though they are not written down. Two areas of importance that have developed as ones of strength and priority are Materials Science and Structural Biology. We need a more complete set of priorities, and understanding of how we will support them and other research.

The goals of the Strategic Research Plan include:

1. Summarize the current research of the Faculty of Science.
2. Help all members of the Faculty of Science pursue successful research careers.
3. Clearly identify and highlight what currently distinguishes us from other Faculties of Science, and how we would like to become distinguished.
4. Identify particular opportunities for growth and strengthening of research.
5. Articulate the importance of research that does not necessarily fall within an identified theme.
6. Understand how to provide support for certain areas of focus while simultaneously supporting the research enterprise of all faculty members.
7. Articulate the most important challenges we need to overcome.
8. Guide related decisions on staffing, CFI support, space and infrastructure

To achieve these goals, we need to recognize:

1. What are our current strengths?

2. What are the unique opportunities available to us?
3. Do some areas require individuals with similar and/or complementary expertise? If so, how many individuals are required to allow this area to achieve critical mass? And if critical mass is the goal, are we prepared to forego expertise in other areas?
4. Where applicable, should we retain the traditional model of one person one lab? Could we more efficiently use our resources by developing common laboratory facilities?
5. Given that there are considerably more funding opportunities for applied research, will this become a consideration in determining the areas that will form part of your strategic research plan? Should we give more emphasis to applied research?
6. It is reasonable to assume that major grant competitions such as CFI and Genome Canada (and its regional counterparts) will occur in the future. To be competitive in these competitions we require strong research groups with a proven record. Should we be developing strategies to make us more competitive in these grant competitions?

In developing the Faculty of Science Strategic Research Plan, we will integrate the information provided by departments with the goal of identifying linkages that occur between departments, as well as seeking interactions that can occur across faculties. To further enhance the research capacity of the Faculty of Science, additional practical issues must be addressed that include:

1. The cost and time to complete laboratory renovations. Can we develop a plan that makes us superior to other institutions that may provide a competitive edge in recruiting new faculty?
2. Strategies to recruit the best graduate students, hopefully increasing the number of students with external scholarships.
3. While funding for graduate students is currently limited, there is no funding for post-doctoral fellows. Should we shift some financial support to attract post-doctoral fellows, and should this be done as a potential pre-recruitment activity?
4. Are there mechanisms that can be adopted by departments to provide faculty with more time to devote to research?

5. Graduate Matters

The Faculty is committed to a thriving graduate program with excellent students engaged in great research. We wish to grow our programs, with a large cadre of excellent students. There are issues:

1. What is the (approximate) ideal number of graduate students in each program?
2. What are the main barriers to reaching these numbers?
3. What are existing and appropriate levels of graduate student support?
4. Are there program issues, e.g., number of courses required?

5. What opportunities are there for synergies with other Faculties?
6. What new programs could or should be developed? Can they, or should they, have special relevance to Manitoba?
7. Graduate programs in thematic areas in Biological Sciences?

6. Internationalization

Internationalization is a priority for the university. The Faculty of Science is currently heavily engaged in international activities, but this does not seem to be documented or recognized.

1. Currently, 1/3 of our graduate students are international, and we host 20% of the university's international graduate students.
2. We will document our current international activities, including the numbers of international graduate students, collaborations, visits, etc.
3. We will examine the effects of the recent increase in tuition.
4. We will continue to pursue the internationalization of our research, graduate and undergraduate programs. We will identify our priorities for development, and suitable funding arrangements.
5. Recruiting of suitable students to our senior undergraduate years is of particular benefit.

7. Teaching Excellence and Innovation

We will continue to pay careful attention to teaching excellence in faculty annual activity reports. We will encourage innovation in program delivery. We will encourage faculty to take advantage of programs intended to support and enhance their excellence and innovations. We will recognize teaching excellence and innovation.

8. Celebration of Excellence and Innovation

The Faculty will expand its program of recognition and rewards for excellence and innovation. The awards we introduce will reflect our priorities. Ones consistent with these priorities are:

1. Faculty of Science Medal for balanced contributions to research, teaching and service.
2. Faculty of Science Academic Staff award for research excellence
3. Faculty of Science Academic Staff award for innovations in teaching and/or academic programs.
4. Faculty of Science Support Staff award for innovation.
5. Student awards (e.g. overlooked medal for best Ph.D. graduate)
6. Faculty of Science annual alumni award.

9. Promotion and Tenure Policies

Promotion and tenure procedures were recently updated. We are currently considering other changes. We want to ensure that we maintain appropriate standards, and treat all applicants with the fairness they deserve.

10. Positioning, Publicity and Student Recruiting

Due to a shortage of staff, the Faculty of Science has not promoted itself as well as it could. Once we have agreed on how to position ourselves (excellence, innovation...), we should tailor our message and media appropriately. We will get the information where we want it. Our student recruitment efforts will target the students we seek to attract. Specific mechanisms could include:

1. We will make our new Faculty of Science Celebration of Excellence an annual event.
2. Continuing the emphasis on attending alumni events (dean).
3. Additional newsletters promoting our successes.
4. More award events, with invitations to external people.
5. Departmental Brag sheets.

11. Departmental and Faculty Staffing Plans

We will develop a strategic staffing plan with the following goals:

1. To attract and retain the best candidates.
2. To maintain healthy and vibrant undergraduate core programs (Honours and Major) .
3. To fulfill service teaching commitments.
4. To satisfy the Faculty and departmental strategic research plans.
5. To encourage interdisciplinary research collaborations.
6. To promote the development of innovative interdisciplinary undergraduate programs.
7. To achieve a critical mass in each department in selected areas of research specialization.
8. To plan for succession for both academic and support staff.

In order to implement the staffing plan, each department will be requested to formulate a strategic departmental staffing plan with both short term and long term goals which will:

1. Establish and justify a realistic target complement of professorial staff, instructors and sessionals consistent with the research and teaching activities of the department.
2. Establish and justify a realistic target complement of support staff, which includes administrative staff, undergraduate laboratory staff, computer staff, and technical staff.
3. Identify a short list of research priorities and define a critical mass for each group.

The Faculty of Science will assemble these individual departmental plans into a coherent Faculty staffing plan and will:

1. Request replacements through the SIP process for retirements/resignations/tenure-denials/half-time-conversions.
2. Request incremental positions under special circumstances (formation of new departments and programs).
3. Prioritize SIP requests according to their impact on undergraduate teaching and to their furtherance of the strategic Faculty research agenda.
4. Normally allocate SIP replacements to the department of origin, but will
5. Reassign SIP positions from one department to another if warranted by significant, long term trends in the redistribution of the undergraduate student population.

12. Space and Infrastructure

With the possible exception of EITC, physical infrastructure across the Faculty of Science in Allen, Parker, Buller, Duff Roblin, and Machray Hall is aging rapidly, and teaching, research and office space is at a premium. We will develop a strategic space assignment and renovation plan with the following goals:

1. To renovate undergraduate teaching facilities, including experimental laboratories, lecture rooms, computer laboratories, IT capabilities.
2. To design a flexible, "generic" , possibly department-specific research laboratory "shell" equipped with a suite of basic facilities which can accommodate any new hire.
3. To ensure adequate study space for graduate students.
4. To ensure adequate office space for academic staff.
5. To address equipment needs for individual departments.
6. To address needs shared by multiple departments (Faculty-based computer labs) .
7. To address needs of special units like Glenlea and Delta Marsh.
8. To renovate common spaces (Armes).
9. To address routine maintenance issues.

In order to implement the space plan:

1. Each department will be required to submit an annual prioritized list of renovations which will include undergraduate teaching, research labs, office space for graduate students, office space for academic staff, computer needs, and routine maintenance issues.
2. the Faculty of Science will develop a comprehensive prioritized inventory of needs in each category, and will develop a renovation schedule in consultation with Physical Plant and IST.

13. Measuring Progress

This exercise is not intended to be one of bean-counting. Nor is it empty fluff. We will measure our progress, and this progress will be reported in the Faculty of Science annual reports. Measures will include:

1. Funding Successes.
2. New academic programs and innovations.
3. Enrollment issues: changes, students turned away, etc.
4. Consideration of, and changes to, academic policies.
5. Space: new, renovated.
6. Equipment.
7. Academic and support staff numbers each year.
8. Research successes.
9. Research funding.
10. Graduate student numbers and successes.
11. New awards.

Faculty of Science
Departmental Strategic Plans - 2007
Template

I. The Department Today

1. Overview of Department
2. Department Values
3. Department Mission
4. Areas of Specialty
5. Existing and Potential Connections to Other Departments, Faculties or Institutions
6. Current Academic Programs
7. Strengths and Weaknesses of the Department
8. Infrastructure Needs

II. Planning Assumptions and Strategic Goals

9. Anticipated Changes in the Environment in Which the Department Operates
10. Planning Assumptions
11. Major Initiatives the Department is Currently, or Potentially, Pursuing
12. Strategic Priorities for the Next Five Years
13. Research Plan

    - Depth vs breadth, single investigator vs team
    - Areas of focus
    - New areas, new initiatives, new opportunities
    - Hurdles to overcome

14. Staffing Plan

- Assume: only growth in academic staff comes from new initiatives
- establish and justify a realistic target complement of support staff, which includes administrative staff, undergraduate laboratory staff, computer staff, and technical staff.
- identify a short list of research priorities and define a critical mass for each group.
- Relate to breadth vs depth.
- Describe how department allocates new positions internally.

III. Specifics: Priorities and Initiatives for the Next Five to Seven Years

15. Academic Programs

- What programs should be reviewed?
- What new programs should be considered?
- What opportunities are there for new and innovative programs? Majors? Minors? Other possibililties?
- What other departments, faculties, etc, should be involved.
- Include graduate and undergraduate

16. Infrastructure

17. Staffing and Hiring

- Priorities
- Academic and support staff

18. Student Recruitment and Promotion

- How do your enrollments compare with those of similar departments at other, comparable universities?
- Are there initiatives your department can take to recruit more students?
- How can your department better promote itself?

19. Simplifying Our Lives

- What rules could we change?

20. Other?