



UNIVERSITY OF  
REGINA

## **Creating Our Future: 2005-2010 A Strategic Plan for the Faculty of Science**



**Laboratory Building (Departments of Biology, Chemistry and Biochemistry, Physics)**



**College West (Departments of Computer Science, Geology, and Mathematics and Statistics)**

**Faculty of Science**  
University of Regina  
Regina, Saskatchewan, Canada S4S 0A2

This document can be located at our website:  
<http://www.uregina.ca/science/>

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## DEAN'S EXECUTIVE COMMITTEE (AS OF SEPTEMBER 1, 2004)



Katherine Bergman  
(Dean)



David Chandler  
(Assistant Dean Undergraduate)



Scott Wilson  
(Assistant Dean Research)



William Chapco  
(Head, Biology)



Andrew Wee  
(Head, Chemistry and Biochemistry)



Brien Maguire  
(Head, Computer Science)



Janis Dale  
(Head, Geology)



George Lolos  
(Head, Physics)



Bruce Gilligan  
(Head, Mathematics and Statistics)



Audrey Perra  
(Faculty Administrator)



## VISION

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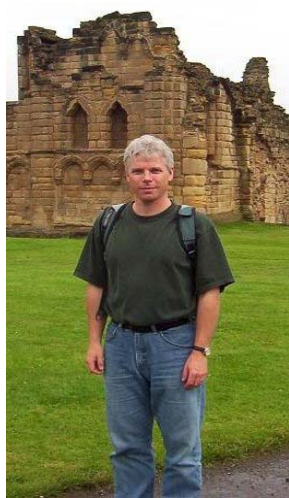
The Faculty of Science is committed to sustain excellence in the creation and dissemination of knowledge by research, scholarly publication and teaching in both basic and applied sciences.



## MISSION

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The mandate of the Faculty of Science is the creation and application of knowledge through pure and applied research and the dissemination of this knowledge through scholarly publication and teaching. Research and Teaching are the fundamental activities of the Faculty. The Faculty of Science has a dynamic, externally funded, peer-evaluated, nationally and internationally recognized research base. This base provides a solid foundation for our undergraduate and graduate programs, and is a mechanism for attracting and retaining high quality faculty, students and staff to the Faculty of Science.



## VALUES AND PRINCIPLES

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High quality, original research and high quality teaching are the fundamental cornerstones of a university. These activities distinguish the University from government research facilities, industry, colleges and technical institutes. In this context, the Faculty of Science is driven by curiosity, creativity and imagination, to seek new knowledge and understanding of our environment. This drive is fulfilled by the creation, enhancement and dissemination of knowledge. The catalyst for these activities is curiosity even where it may ultimately lead to a direct practical or economical application. Curiosity driven research is critical to the development of practical applications.

The Faculty of Science will foster an environment of individual responsibility and teamwork promoting collaboration among faculty, students and staff. As a result, individual and/or collaborative Research and Teaching are expected and will be supported. The mandate of the Faculty of Science is to recruit the best

faculty, students and staff from local, national and international areas to develop scientific and technological expertise within Saskatchewan, and to provide a supportive environment for retaining this expertise.

The Faculty of Science is committed to the following core values and principles, and will continue to build and expand on these foundational principles:

1. *Research and Teaching* are key activities of the Faculty of Science and it is important that these be of the highest quality;
2. *A Respectful Workplace* fosters an environment of individual responsibility and teamwork respecting academic and cultural diversity, and promoting cooperation and collaboration, among faculty, students and staff;
3. *Safety* means promoting a safe workplace environment that is compliant with the relevant legislation;
4. *Collegial governance* arises from the University of Regina and the Faculty of Science operating under a model of shared responsibility where it is expected that faculty and staff will contribute to the governance of the University and the Faculty;
5. *Accountability* to the relevant internal and external communities is the ultimate responsibility.



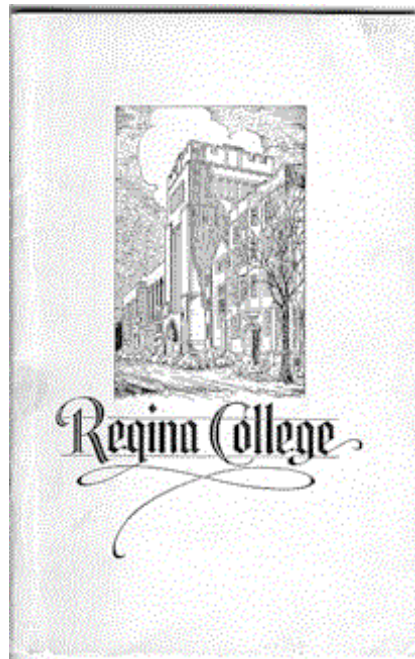


## INTRODUCTION

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### *The Early Years*

Prior to 1961, Regina College offered first- and second-year university-level courses in Biology, Chemistry, Mathematics and Physics. In 1961 that College was reconstituted as the University of Saskatchewan, Regina Campus to enable the campus to offer degree programs in these four disciplines. The Division of Natural Sciences, in which the Science departments and Mathematics were housed, was then one of four Divisions of the Faculty of Arts. The present Laboratory Building was built in 1965, and existing programs were moved from the College Avenue Campus to the new campus shortly after. By 1965 a few courses were also offered in Biochemistry and Geology, and by 1967 there was a degree program in Biochemistry. Geology was established as a department in the Division of Natural Sciences in 1967 following the hiring of a full-time faculty member when a three-year program was approved in principle. The four-year degree program was established in 1970. A full-time faculty member in Computer Science was hired in 1970 although there had been approval for a Campus Department of Computer Science in 1968. Approval for full degree programs in Computer Science was given in 1971.



The renewal that has been a major focus of the Faculty over the past five years has come as the result of the retirement of many of those staff members hired during the period of major growth, which occurred between 1965 and 1972.



In 1974 the University of Regina was created from the University of Saskatchewan, Regina Campus, and the Faculty of Science was formed with its own Dean. The Faculty then consisted of the present six departments although there have since been name changes; the Department of Physics & Astronomy became the Department of Physics, and Biochemistry was added to the Department of Chemistry

and Biochemistry, and Statistics to the Department of Mathematics and Statistics. Actuarial Science became a discipline in the Department of Mathematics and Statistics in the late 1990s and there is now a very popular BSc program in Actuarial Science. First- and second-year Astronomy courses are offered under the aegis of the Physics Department; however, there are not full degree programs in Astronomy.

## *Today*

Members of the Faculty of Science have a strong commitment to excellence in teaching and research. There are 77 faculty members, 2 instructors, 16 laboratory instructors, 6 technicians and 17 administrative support staff that are directly responsible for 1157 full time and 184 part time undergraduate students, and 140 graduate students.



The Faculty of Science is composed of six departments: Biology, Chemistry and Biochemistry, Computer Science, Geology, Mathematics and Statistics, and Physics. All departments offer undergraduate and graduate degrees.

The Faculty currently offers Bachelor of Science and Bachelor of Science Honours degrees in a number of disciplines, as well as Certificates in Computer Science and Indian Health Studies. A Bachelor of Medical Imaging (BMI) is also available. Laboratory work is an important aspect of the degree programs because it provides students with hands-on, practical experience in a controlled environment. Many of the programs may be taken with a cooperative work term option allowing students to gain valuable work experience in their chosen discipline. The Faculty is actively developing many of our courses for distance learning using closed circuit television (SCN) and also the Internet.

The Faculty of Science has graduate programs in the major disciplines leading to the degrees Master of Science and/or Doctor of Philosophy. The students in these thesis-based degree programs work under the direct supervision of a faculty member.

## *Changing Landscape*



The Faculty of Science has undergone a period of renewal, rebuilding and growth during the past few years. A number of young and enthusiastic faculty members have recently been recruited. These members, together with their more established colleagues, are shaping the research directions and programs in new and innovative ways, promoting independent as well as collaborative research efforts in the Faculty and University, provincially, nationally and internationally.

The Faculty of Science is enhancing the opportunity for students to follow a wide variety of career options by developing new programs in Science and in collaboration with other faculties at the University of Regina and with the Saskatchewan Institute of Applied Science and



Technology (SIAST). Interdepartmental programs (e.g., Biology and Biochemistry, Mathematics and Computer Science), interfaculty programs (e.g., 5-year BSc/BEd in Physics and Education, BSc in Statistics and Economics) and joint institutional programs (e.g., BSc in Environmental Biology, BSc in Chemical Technology and a Bachelor of Medical Imaging all in collaboration with SIAST) are available. These partnerships allow the Faculty to expand its program options by capitalizing on existing resources and to provide new opportunities for students. Currently there are several programs under review with SIAST as well as additional joint BSc/BEd programs. The Actuarial Science program in the Department of Mathematics and Statistics has approximately 60 majors registered although it began admitting students only in Fall 2001. The first graduates of this program received their degrees at the Spring 2004 Convocation.

Fundraising will take on increasing significance in the Faculty over the next few years. The focus will be on the development of undergraduate and graduate student scholarships to meet our goal of attracting and retaining the very best students. Plans are being developed for a new laboratory building that will improve our research and teaching environments, and provide the necessary infrastructure to attract and retain high quality faculty to the University of Regina.

The Faculty of Science plays an active and visible role in the community. Many of our faculty members, students and staff are involved in school visits, science fairs, career fairs, speaking engagements and community projects. Some examples include: 1) the Astronomy public viewing nights supported by the Department of Physics, 2) the bat rescue operation housed in the Department of Biology, 3) a Math Camp for high school students and Math Central, a web based resource for teachers and students in the Department of Mathematics and Statistics,



and 4) support for local, regional and national Science Fairs. Most recently, some of our Faculty Members were awarded an NSERC Promo Science grant collaboratively with the Faculty of Education to develop a Centre for Math, Science and Technology Education. This project was submitted in cooperation with the Saskatchewan Science Centre. Faculty members sit on the Board of Directors and have been available as consultants for programs and exhibits developed at the Saskatchewan Science Centre, and our students are employed as demonstrators. Other students volunteer to work at the Royal Saskatchewan Museum. Public Service is seen as an important component of our contribution to the community that supports us.



## *Looking to the Future*



The Faculty of Science faces the new challenges and opportunities that lie ahead with confidence and optimism. The renewal of the Faculty, coupled with the experience and established records of existing colleagues, provides a solid foundation for growth of the Faculty over the next five years. The future of the Faculty of Science is grounded in two fundamental principles, excellence in discipline-based research and teaching, and the recruitment/retention of high quality people. These principles have guided the development of this strategic plan that will serve as a framework for decisions about future directions and resource allocation. This plan is consistent with the vision, mission and goals statement of the Faculty and the Strategic Research Plan of the University of Regina.

Excellence in discipline-based research provides a solid foundation for collaboration and allows opportunities for interdisciplinary/collaborative research to grow as trends and needs dictate. At the same time, discipline-based research serves the long-term interests of student education, because research informs teaching. A strong research program enhances our teaching programs at the undergraduate and graduate level. These programs may be discipline-based or interdisciplinary. The Faculty has already established a record of excellence in discipline-focused and interdisciplinary/collaborative research and teaching programs.

Recruiting and retaining the best faculty and students is the single most important goal for future success. High quality and innovative researchers are self-motivating. The role of the Faculty is to provide these researchers with an environment that is flexible and facilitates their research programs through the provision of adequate financial and human resources. The Faculty of Science plans to develop its strength further based on the above principles. In so doing, it will meet its commitment to its faculty members, students, staff, the wider University and the Province of Saskatchewan.





### *Faculty Priorities*

Over the last five years the Faculty of Science has been successful attracting high quality personnel to drive the research and teaching enterprises. The Faculty will now face the challenge of retaining these new colleagues and sustaining the new initiatives in teaching and research that have come as a result of this growth. Over the next five years the Faculty needs to address the following concerns to sustain the current high caliber of teaching and research, and to support continued growth of research and teaching excellence. These issues focus largely around infrastructure particularly if we are to retain these highly qualified members and nourish the growth of the Faculty.



1. Facilitate and support the research enterprise to allow for continued and sustained growth;
2. Develop core infrastructure to support the variety of research programs in the Departments;
3. Initiate and sustain a Visiting Scholars program to increase the potential for national and international interaction and collaboration;
4. Provide increased funding for undergraduate and graduate student support;
5. Secure sustained funding to renew and maintain the existing undergraduate laboratories and to develop modern laboratory facilities designed to meet the needs of new or revised programs;
6. Develop our programs to meet current educational priorities and opportunities in the Province while reflecting the expertise in the Faculty; Propose and develop courses for delivery using Technology Enhanced Learning (TEL) opportunities and Campus Saskatchewan where appropriate.







These priorities will be achieved by securing funds as the result of a number of ongoing opportunities. The Faculty of Science is part of the new Laboratory Building project that will provide modern facilities to support the growing research enterprise in the Faculty. The University of Regina is currently involved in a major Fundraising project and the Faculty has targeted infrastructure, scholarships and a visiting scholars

program as key areas for support from this initiative. The Faculty is also involved in negotiations with the Provincial Laboratories and the RCMP about the possibility of pooling resources to develop shared core facilities that operate more efficiently. A number of other sources of funding are available to the faculty through the Canadian Foundation for Innovation (CFI), Canada Research Chair (CRC) programs and tri-council including Natural Sciences and Engineering Research Council (NSERC), Canadian Institute for Health Research (CIHR) and the Social Sciences and Humanities Research Council (SSHRC). All these sources of funding are and will be aggressively and successfully pursued.



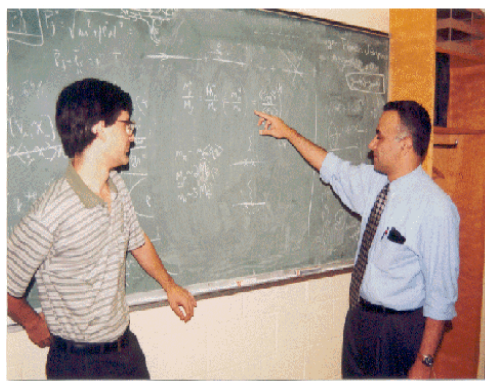
## ACHIEVING OUR VISION AND MISSION

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To meet the objectives described in our Vision and Mission statement the Faculty must focus on six key goals:

- *Research and Teaching:* The Faculty must provide an environment that promotes individual and collaborative research and teaching activities of its faculty, students and staff;
- *Faculty and Staff:* The Faculty must attract and retain high quality faculty and staff members, and support them in their academic responsibilities because the quality of the faculty and staff defines the quality of the Faculty;
- *Students:* The Faculty must provide high quality programs, which develop critical thinking and problem solving skills that build a solid scientific base of knowledge, and the Faculty must enhance these programs by introducing students to research at an early stage;
- *Recognition:* The Faculty must continue to promote the development of national and international research and teaching reputations by actively encouraging research and teaching collaborations;
- *Service:* The Faculty must continue to provide high quality community service delivery and to provide programs and lectures, for schools and community organizations;
- *Accountability:* The Faculty must be accountable to the University of Regina, the national granting councils, the community of its peers and the public for the evaluation of performance.

Since these goals are entwined, the mechanisms for achieving them are described under the following five main subject headings: People, High Quality Programs, Community Service, Resources, and Implementation and Accountability.



## PEOPLE:



People comprise the greatest resource in the Faculty of Science and it is the cumulative effort of the Faculty, Staff, Students and Alumni that ensures the success of the Faculty. The goal of the Faculty of Science is to attract and retain high quality faculty, and to support them in their academic responsibilities. The Faculty of Science is committed to attracting and retaining high quality staff, and to providing the necessary administrative and technical support for teaching and research programs because the quality of the faculty and staff ultimately define the quality of the Faculty of Science. The objective is to provide a wide range of

programs that develop critical thinking and analytical skills, and build a solid scientific base of knowledge, while enhancing these programs by introducing students to research. This will allow us to attract and retain the best students. The Faculty of Science will foster an environment of individual responsibility and teamwork promoting cooperation and collaboration among faculty, students and staff, which respects academic and cultural diversity.

Objectives	Actions
<p><b>Objective 1:</b> That all policies and procedures in the Faculty of Science reflect the Principles of Natural Justice to ensure fairness and equity for all members.</p>	<ol style="list-style-type: none"> <li>1. To review all of the policies and procedures of the Faculty of Science to ensure that the objectives of fairness and equity are promoted, and to ensure that these policies and procedures are up-to-date and consistent with relevant University documents and government legislation (Dean, Assistant Dean Research, Assistant Dean Undergraduate, Faculty Administrator, Department Heads).</li> <li>2. Ensure that these policies and procedures are followed (Dean, Assistant Dean Research, Assistant Dean Undergraduate, Faculty Administrator, Department Heads).</li> </ol>





**Faculty:**



The quality of the faculty members defines the quality of the research, teaching and professional activities of the Faculty of Science. The Faculty must ensure that the best faculty members are recruited and retained by providing an environment that supports their research and teaching achievements and academic responsibilities. Faculty members must demonstrate their commitment to research excellence in their area of expertise, and must disseminate new knowledge in an appropriate manner through peer-reviewed publication, classroom instruction and public awareness. Faculty members must demonstrate their commitment to the Faculty by performing their assigned duties in a professional and effective manner. Working together, faculty members will ensure that the Faculty of Science establishes and maintains the highest academic standards and supports the academic ambitions of all members. Sustaining this vision will require that the Faculty of Science focuses recruitment and retention in areas consistent with the

University of Regina Strategic Research Plan as well as in areas of strength identified by the Faculty to develop critical mass of national/international significance.

The Faculty of Science recognizes the important contributions made by sessional lecturers, adjunct professors and professor emeriti to the research and teaching programs in the Faculty.



Objectives	Actions
<p><b>Objective 2:</b> To attract and retain high quality faculty in areas of identified strength in the Faculty.</p>	<ol style="list-style-type: none"> <li>1. Focus faculty recruitment and retention so that faculty may complement one another with respect to research area and expertise in established or developing areas of research excellence identified by the individual Departments and consistent with the University of Regina Strategic Research Plan (Dean, Assistant Dean Research, Department Heads).</li> <li>2. Provide sufficient support to allow new faculty members to initiate independent research programs (Dean, Assistant Dean Research, Department Heads).</li> <li>3. Provide support for new faculty members in areas such as grant preparation, development of effective teaching methods, thesis supervision and effective time management (Dean, Assistant Dean Research, Assistant Dean Undergraduate, Department Heads, Professors).</li> <li>4. Provide orientation for new faculty members and ensure office is appropriately equipped (email, phone, computer) and accounts are established in a timely manner (Faculty Administrator, Science Operations, Department Heads).</li> <li>5. Foster an environment of individual responsibility and respect (Dean, Assistant Dean Research, Assistant Dean Undergraduate, Faculty Administrator, Department Heads, Faculty Members).</li> <li>6. Provide funding to researchers to help them achieve their academic goals (Dean, Department Heads).</li> <li>7. Develop a plan for leadership succession in the Faculty (Dean, Assistant Dean Research, Assistant Dean Undergraduate, Department Head, Faculty Members).</li> </ol>

Objectives	Actions
<p><b>Objective 3:</b> To attract and support high quality sessional lecturers to contribute effectively to the teaching goals of the Faculty.</p>	<ol style="list-style-type: none"> <li>1. Advertise for all sessional positions (Assistant Dean Undergraduate, Department Heads).</li> <li>2. Provide assistance as required, especially to new sessional lecturers (Assistant Dean Undergraduate, Department Heads, Faculty Members, Staff Members).</li> <li>3. Explore ways to recognize accomplishments in teaching by sessional lecturers (Dean, Assistant Dean Undergraduate, Department Heads).</li> </ol>



**Staff:**

The non-academic staff members are essential to the success of the Faculty of Science because they provide the administrative and technical support for the activities of the Faculty of Science, and make it possible to accomplish the identified goals in all areas of activity. To ensure the sustainability and high quality of the Faculty of Science, it is important to recruit and retain outstanding staff members by providing an environment that supports their administrative and operational activities and responsibilities, and recognizes their contributions. Working together will ensure that the high quality teaching, research and public service activities of the Faculty of Science are sustained.



Objectives	Actions
<p><b>Objective 4:</b> To recruit and retain high quality staff to provide administrative and technical support for the activities of the Faculty of Science.</p>	<ol style="list-style-type: none"><li>1. Develop an orientation program for new staff (Dean, Faculty Administrator, Department Heads).</li><li>2. Explore ways of rewarding exemplary service by staff members (Dean, Faculty Administrator, Department Heads).</li><li>3. Explore ways of enhancing professional development for staff (Dean, Faculty Administrator, Department Heads).</li></ol>



***Undergraduate Students:***

Changing demographics in the Province of Saskatchewan suggest that there will be a marked shift in the composition of the student body, and that our students will come from more diverse age groups, backgrounds and regions than they do today. The Faculty will need to provide a learning environment that is sensitive to this changing student body without compromising the quality of the



undergraduate programs. If enrolments are to remain at current levels or show growth, the Faculty must be in a position to actively attract students from other regions by providing high quality programs that stimulate intellectual curiosity, offer financial support to the academically gifted, and provide an environment that is respectful of cultural diversity.

Objectives	Actions
<p><b><i>Objective 5:</i></b> To recruit and retain high quality undergraduate students both locally and from diverse regions.</p>	<ol style="list-style-type: none"> <li>1. Maximize opportunities for student recruitment (Dean, Assistant Dean Undergraduate, Academic Program Advisor).</li> <li>2. Maintain high quality undergraduate programs (Dean, Assistant Dean Undergraduate, Department Heads).</li> <li>3. Continue to explore ways to provide increased financial support to students (Dean, Assistant Dean Undergraduate, Faculty Administrator, Academic Program Advisor).</li> </ol>

Objectives	Actions
<p><b><i>Objective 6:</i></b> To increase the number of First Nations students registered and successfully completing degrees in the Faculty of Science.</p>	<ol style="list-style-type: none"> <li>1. In cooperation with the Department of Science at the First Nations University of Canada, explore ways to enhance the recruitment, retention and graduation of First Nations' students in Science (Dean, Assistant Dean Undergraduate, Academic Program Advisor, Department Heads, First Nations University of Canada, Science Department Head).</li> <li>2. Support the Department of Science at the First Nations University of Canada in the development of curricula and methodologies supportive of the needs of the First Nations Community (Dean, Assistant Dean Undergraduate, Department Heads).</li> </ol>

Objectives	Actions
<p><b>Objective 7:</b> To build a sense of community among all students in the Faculty of Science.</p>	<ol style="list-style-type: none"> <li>1. Create a Faculty of Science Student Society that has membership from all disciplines in the Faculty (Dean, Assistant Dean Undergraduate, Academic Program Advisor, Department Heads, Student Society Presidents).</li> <li>2. Enhance campus living by increasing the number of academic and social events available for students in the Faculty of Science (Academic Program Advisor, Student Society Presidents).</li> <li>3. Support student activities within the Faculty and the Departments (Dean, Assistant Dean Undergraduate, Academic Program Advisor, Department Heads, Faculty Members, Students).</li> <li>4. Explore mechanisms for highlighting student success (Dean, Assistant Dean Undergraduate, Academic Program Advisor, Department Heads).</li> </ol>

**Graduate Students, Postdoctoral Fellows and Research Associates:**

Graduate students and Postdoctoral Fellows/Research Associates play a critical role in the research activities in the Faculty of Science. Their participation in faculty members' research programs is a requirement of the Natural Sciences and Engineering Research Council of Canada for successful funding of a particular research program.



Objectives	Actions
<p><b>Objective 8:</b> To recruit and retain high quality graduate students both locally and from diverse regions.</p>	<ol style="list-style-type: none"> <li>1. Explore avenues for increased funding for graduate students including base resources (e.g., Teaching Assistantships and Research Associates) and external funding opportunities (Dean, Assistant Dean Research, Department Heads, Faculty Members).</li> <li>2. Emphasize the importance of the graduate students, Postdoctoral Fellows and Research Associates to the success of the Faculty research and teaching programs, and the necessity of research and teaching space to support this learning environment (Dean, Assistant Dean Research, Department Heads, Faculty Members).</li> </ol>

**Alumni:**

Graduates from the Faculty of Science indicate a high degree of satisfaction with their education and on campus experiences. The Faculty of Science could benefit greatly by an increased involvement with, and support from, our alumni.



Objectives	Actions
<b>Objective 9:</b> To increase the engagement and involvement of our alumni in the support of the activities of the Faculty of Science.	1. Develop and implement a strategy that will increase the involvement with and support from our alumni (Dean, Assistant Dean Undergraduate, Assistant Dean Research, Academic Program Advisor, Program Coordinator, Department Heads, Faculty Members).

**HIGH QUALITY PROGRAMS:**



The success of the Faculty is dependent on the quality of the activities in which the Faculty is engaged. The goal of the Faculty of Science is to be recognized nationally and internationally by our peers. To accomplish this the Faculty must choose carefully the areas that are supported, and these choices should be driven primarily by the strengths in discipline-based research. The areas of research focus will be determined by the Departments based on the research strengths of the faculty members within the Department

and academic programs should be competitive with other institutions. The Faculty will also need to explore new opportunities internationally if this goal is to be achieved.

Objectives	Actions
<b>Objective 10:</b> To continue to explore international opportunities in the research and teaching programs in the Faculty of Science.	1. Continue to support University activities in the area of internationalization (Dean, Assistant Dean Undergraduate, Assistant Dean Research, Department Heads). 2. Facilitate international exchange opportunities for faculty, students and staff (Dean, Assistant Dean Undergraduate, Assistant Dean Research, Department Heads, Faculty Administrator, Academic Program Advisor, Program Coordinator).



**Research:**



The research enterprise in the Faculty of Science is based on a solid foundation of discipline-based research in the six principal areas of Biology, Chemistry and Biochemistry, Computer Science, Geology, Mathematics and Statistics, and Physics. Since scholarship is a fundamental function of a university, it follows that all faculty members are expected to be active in scholarly endeavours. The Faculty recognizes the importance of research and will provide an environment that promotes, facilitates and supports the growth of high quality, peer-evaluated research in these core areas. The Faculty also recognizes that several of these research fields may

group naturally to form integrated collaborative areas of interdisciplinary research. These areas may complement the Strategic Research Plan of the University and include Energy and the Environment, Information Technology, and Population Health and areas of strength in discipline based research. The Faculty is committed to providing support for these areas of research. For example, one Canada Research Chair (Tier I) has been dedicated to Energy and Environment; a second Canada Research Chair (Tier II) is in the area of Information Technology. The Faculty will continue its policy of hiring high quality personnel in the core discipline areas, but is also cognizant of the opportunities for collaboration and interdisciplinary research that are potentially available by hiring faculty in areas that are complementary.

**Faculty Research:**

Our faculty members have attracted significant external research and infrastructure funding through the Natural Sciences and Engineering Research Council of Canada (NSERC), the Canadian Foundation for Innovation (CFI), other government funding councils and international grants and contracts, and the private sector. It is largely through the efforts of these faculty members that the Faculty has continued to expand and develop the research activities and the infrastructure necessary to support these programs. In the 2004 competition, the Faculty of Science achieved a 100% success rate with NSERC grant applications in support of faculty members' research programs. The Faculty was also successful in securing CFI funding to support four laboratory research facilities. Three of these laboratories were funded through the CFI New Opportunities Fund: the Environmental Quality Analysis Laboratory (EQAL), the Laboratory for Computational Discovery (LCD), and the Biophysics Laboratory. The Subatomic Physics Alpha Computing Environment (SPACE) and the Trace Analysis Facility (TAF) are two of the University's successful CFI grant applications in open national competition that are located in the Faculty of Science. More recently the Faculty has been awarded CFI money under the new opportunities program to develop the area of theoretical computational chemistry, to create the new Geofluids Laboratory and to establish the Fluorescent Scanning Electron Microscopy Laboratory. Faculty members were also key collaborators on two other recent CFI awards, one to develop a multimedia research centre and the other a high-resolution NMR analytical facility. These successes have increased the research infrastructure of the Faculty significantly. Faculty members continue to widen research initiatives in the Faculty of Science. The results of their research are published in a variety of peer-reviewed journals and conference proceedings. New research opportunities, either individual or collaborative, are constantly being proposed and developed on an ongoing basis.



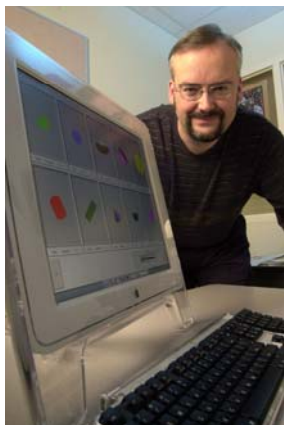
Objectives	Actions
<p><b>Objective 11:</b> To sustain and grow a strong national and international calibre research enterprise in the core disciplines of the Faculty of Science.</p>	<ol style="list-style-type: none"> <li>1. Provide the necessary support to recruit the best faculty members in the individual disciplines (Dean, Department Heads, Faculty Members).</li> <li>2. To provide the necessary resources (e.g., startup funding, matching funds, space) to allow faculty members to achieve their goals and maximize our success in external funding competitions (Dean, Faculty Administrator, Department Heads).</li> <li>3. Promote and facilitate individual research programs (Department Heads, Faculty Members).</li> <li>4. Develop shared research facilities to build sustainable infrastructure to support the growing research enterprise (Dean, Faculty Administrator, Department Heads, Science Operations, Faculty Members).</li> </ol>

Objectives	Actions
<p><b>Objective 12:</b> To sustain and grow a strong integrated collaborative research program in the Faculty, with other faculties and with other institutions locally, nationally and internationally.</p>	<ol style="list-style-type: none"> <li>1. Provide support for discipline-based research to develop a solid foundation for integrated collaborative research programs (Dean, Assistant Dean Research, Department Heads, Faculty Members).</li> <li>2. Recruit the best people in the disciplines with an emphasis on hiring faculty members that complement one another with respect to research area and expertise (Dean, Department Heads, Faculty Members).</li> <li>3. Promote and develop internal and external integrated research collaborations (Dean, Assistant Dean Research, Department Heads, Faculty Members).</li> </ol>

Objectives	Actions
<p><b>Objective 13:</b> To increase the awareness and recognition of the research contributions of members of the Faculty of Science.</p>	<ol style="list-style-type: none"> <li>1. Nominate faculty members for prestigious awards and appointments (Dean, Assistant Dean Research, Department Heads).</li> <li>2. Develop a communication plan to raise the profile of the research accomplishments of the Faculty of Science in the University community and the broader community (Dean, Assistant Dean Research, Department Heads).</li> </ol>



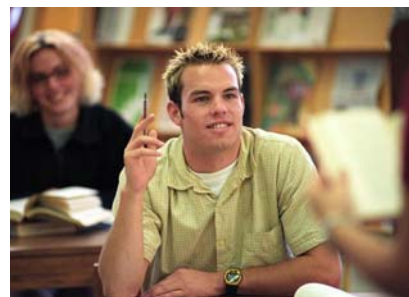
### *Academic Programs:*



Since excellent teaching is required in the Faculty of Science it follows that there must be a consistent and reliable method of evaluating teaching on a regular basis. We recognize the importance of teaching, however its evaluation is difficult. The Faculty of Science is committed to maintaining high quality instruction and high standards at all levels in our teaching programs through the development of critical thinking and analytical skills, and the building of a solid scientific base of knowledge in our students. Our teaching programs will be enhanced by introducing our students early on in their careers to research through laboratory experience and faculty supervised individualized or team research. The Faculty of Science is committed to continuing the development of programs and infrastructure that provide our students with a rich educational environment.

### *Undergraduate*

The Faculty currently offers Bachelor of Science and Bachelor of Science Honours degrees in a number of disciplines, as well as Certificates in Computer Science and Indian Health Studies, and a Bachelor of Medical Imaging. There are combined programs in the Faculty as well as combined degree programs with the faculties of Arts and Education, and joint degree programs with SIAST. Laboratory work is an important aspect of all the degree programs because it provides students with hands-on, practical experience in a controlled environment. Cooperative Work/Study options in Chemistry, Computer Science, Mathematics, Physics and Statistics, along with an optional internship in Actuarial Science, provides alternate methods for students to complete their programs. Students also have the option of enrolling in science courses and programs through one of the Federated Colleges, Campion or Luther or through the First Nations University of Canada.



The undergraduate program is monitored continuously to ensure that our programs are current and nationally recognized. New programs are developed within departments as well as in cooperation with other departments, faculties or institutions as areas of potential need are identified.

### *Graduate*



The Faculty of Science offers graduate programs in all the disciplines leading to a Master of Science (MSc) degree or a Doctor of Philosophy (PhD) degree. Students work in these thesis-based degree programs under the direct supervision of a faculty member(s). The MSc degree typically requires two years of study while the PhD requires four years.

Graduate education is an integral part of Faculty of Science activity and is a shared responsibility with the Faculty of Graduate Studies and Research. Graduate students obtain important advanced education in scientific methodology and research by working with professors, and much of the research undertaken by Faculty members could not be fully





realized without the participation of graduate students. To further underscore the crucial role of graduate education in research, the Natural Sciences and Engineering Research Council of Canada (NSERC) requires that each research program receiving NSERC funding be structured in a manner that provides for training of highly qualified personnel.

Graduate students receive individual attention from their supervising professors and benefit from low student-to-

professor ratios. The Faculty of Science fosters a collegial atmosphere whereby students and professors interact as colleagues. The student body is made up of a mix of first-rate domestic and international students, enhancing the learning experiences of the graduate student and bringing much needed potential expertise to the province.

### *TEL Initiatives*

The Faculty is currently developing a number of courses for web-based instruction with the aid of funding from the provincial government. MATH 101 has been offered on-line for three years with an enrolment of about 20 students. An on-line section of CHEM 100 was given for the first time Fall 2002. GEOL 102 will appear on-line shortly and proposals are currently being developed for offering CS 130, CS 170, CS 408/808, as well as BIOL 100 and 101 Laboratory Resource materials. The Faculty is committed to continuing the development of appropriate courses for web-based instruction.



Objectives	Actions
<p><b>Objective 14:</b> To continue to sustain and develop high quality undergraduate and graduate programs.</p>	<ol style="list-style-type: none"> <li>1. Promote and sustain the expectation of high quality teaching in the Faculty of Science (Dean, Assistant Dean Undergraduate, Department Heads, Faculty Members).</li> <li>2. Promote a strong research program that will enhance teaching, particularly at the graduate and senior undergraduate level (Dean, Assistant Dean Research, Department Heads, Faculty Members).</li> <li>3. Encourage faculty members to serve as role models and mentors for young scientists (Faculty Members).</li> <li>4. Review and renew all programs on a regular basis (Assistant Dean Undergraduate, Department Heads).</li> <li>5. Provide an environment that promotes and facilitates the teaching activities at all levels (Dean, Assistant Dean Undergraduate, Department Heads).</li> <li>6. Continue the program of laboratory infrastructure revitalization (Dean, Faculty Administrator, Science Operations, Department Heads).</li> <li>7. Continue to develop collaborative programs with other faculties and institutions (Dean, Assistant Dean Undergraduate, Department Heads).</li> <li>8. Explore ways (e.g., web-based instruction) to expand the impact of our teaching programs (Dean, Assistant Dean Undergraduate, Department Heads).</li> <li>9. Ensure accessibility to programs for all qualified students without compromising academic standards (Dean, Assistant Dean Undergraduate, Department Heads).</li> </ol>

**Support Services:**

The academic mission of the Faculty can only be met if the necessary administrative and support services are in place to support the research and teaching programs and to respond in a timely manner to the needs of the faculty and students. The administrative and support staff in the Faculty of Science are one of the foundations on which the success of the Faculty is built.



Objectives	Actions
<p><b>Objective 15:</b> To provide the necessary support services for the research and teaching programs.</p>	<ol style="list-style-type: none"> <li>1. Provide support services that meet the needs of the Faculty (Dean, Faculty Administrator, Science Operations).</li> <li>2. Review and renew these services on a regular basis to ensure that the needs of the Faculty are being met (Dean, Assistant Dean Undergraduate, Assistant Dean Research, Faculty Administrator, Science Operations, Department Heads).</li> </ol>

## COMMUNITY SERVICE:

The Faculty has an important role to play in providing service to its professional communities as well as to the local community. The Faculty of Science must be accountable to the University of Regina, the national granting councils, the community of our peers and the public for its research and teaching. It is the responsibility of the faculty members to ensure that the results of publicly funded research programs are conveyed to the research community and the broader community in the appropriate venue and in an understandable manner.





**Professional:**



Since the Faculty of Science is the home of world-class research it attracts significant amounts of funding from the granting councils. The Faculty actively pursues both basic and applied research, combining curiosity-driven research with direct economic development.

Liberal Arts and Sciences are the core of the University, and are the foundation of many pre-professional and professional programs on campus. It is imperative that the quality of our introductory courses meets the demands of the professional programs.

Objectives	Actions
<p><b>Objective 16:</b> To continue to build our relationship with other institutions, government and industry.</p>	<ol style="list-style-type: none"> <li>1. Enhance the national and international reputation of the Faculty of Science by disseminating research results in a timely manner through peer-reviewed publication, teaching and public service (Faculty Members).</li> <li>2. Continue to actively pursue opportunities to attract external funding to support and sustain the research enterprise with external partners (Assistant Dean Research, Faculty Members).</li> </ol>

Objectives	Actions
<p><b>Objective 17:</b> To continue to improve service delivery to other programs on campus.</p>	<ol style="list-style-type: none"> <li>1. Explore ways to enhance our teaching programs (Assistant Dean Undergraduate, Department Heads, Faculty Members).</li> <li>2. Explore opportunities for collaboration to develop programs to meet the needs of the community (Assistant Dean Undergraduate, Department Heads, Faculty Members).</li> </ol>

**Local:**

Since the Faculty of Science is part of the local community it plays an important role in the life of the community. We recognize that we represent an important educational resource for the rapidly changing demographics in this region. The goal of the Faculty of Science is to be recognized as a key contributor to the educational needs of the community, the province and the country.



Objectives	Actions
<p><b>Objective 18:</b> To enhance the public perception and appreciation of the importance of the role of the Faculty of Science in the community.</p>	<ol style="list-style-type: none"> <li>1. Continue to provide programs and lectures for schools and community organizations (Academic Program Advisor, Program Coordinator, Faculty Members, Students).</li> <li>2. Continue to provide support for community programs and activities for the public on campus (Dean, Department Head).</li> <li>3. Strengthen our relationship with Saskatchewan Science Centre, Museum of Natural History and other relevant community-based organizations (Dean, Department Heads, Faculty Members, Students).</li> <li>4. Promote and support community-based science programs (e.g., Virtual Science Fair) relevant to the mandate of the Faculty of Science (Dean, Department Heads).</li> </ol>

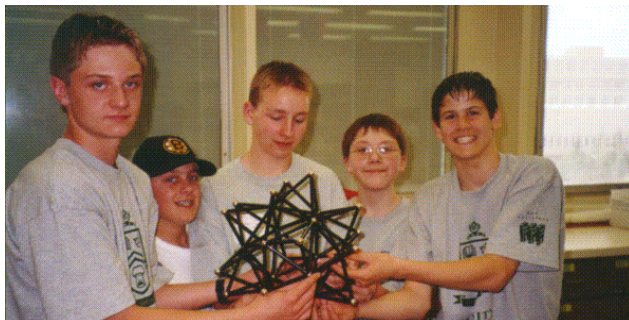
## RESOURCES:

It is critical to the ongoing success of the Faculty that there be sufficient financial and physical resources available to support the research and teaching activities. Our funding is allocated centrally based on money received by the institution, principally from the Provincial Government Grant and from student tuition. The research enterprise is funded primarily through federal tri-council funding and other grant initiatives as well as through provincial and private sector grants and contracts. The Faculty has actively explored opportunities with other faculties, institutions, government sources and the private sector to find innovative ways to develop research and teaching programs, which make more efficient use of existing resources as well as through partnerships. The Faculty will continue to collaborate with governmental agencies and the private sector to find ways to use resources more effectively.



### **Funding:**

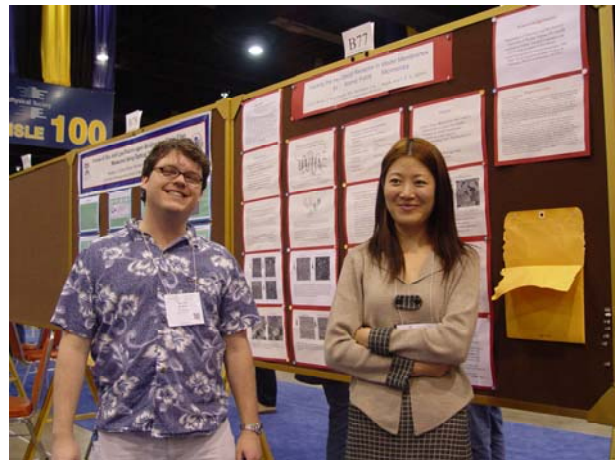
The Faculty of Science faces a significant gap in the necessary financial and physical resources required to operate the activities of the Faculty and the money the Faculty receives. This shortfall creates tension between different areas requiring support to sustain and grow. The Faculty also recognizes that there is significant opportunity to attract funding from outside resources, particularly to support capital projects.



Objectives	Actions
<p><b>Objective 19:</b> To obtain sufficient financial and physical resources to meet the current and future needs of the Faculty of Science.</p>	<ol style="list-style-type: none"> <li>1. Actively pursue opportunities internally and externally to acquire additional financial and physical resources to support the activities of the Faculty (Dean, Faculty Administrator, Science Operations, Department Heads, Faculty Members).</li> <li>2. Review all operations on an ongoing basis to make certain that resources are used effectively, and that the needs of the research and teaching programs are being met (Dean, Assistant Dean Undergraduate, Assistant Dean Research, Faculty Administrator, Science Operations, Department Heads).</li> <li>3. Ensure there are sufficient resources in place to maintain the integrity and the currency of the infrastructure that supports the research and teaching programs (Dean, Faculty Administrator, Science Operations, Department Heads).</li> </ol>

**Fundraising:**

The Faculty of Science recognizes that there is a significant opportunity to enhance the support we receive from alumni, the community and the private sector. The Faculty of Science has ongoing discussions with the University Relations Office to develop a fundraising strategy. The target for this fundraising program will be an increase in the number and value of scholarships available to students in the Faculty of Science, the development of a Visiting Scholars Program and support of the outreach activities of the Faculty. This will provide increased leverage to recruit and retain faculty members and to attract the best students into all our programs.



Objectives	Actions
<p><b>Objective 20:</b> To develop continuous and growing revenue for the Faculty of Science from private donations.</p>	<ol style="list-style-type: none"> <li>1. Work with University Relations to develop and implement a fundraising program that is integrated with the academic needs of the Faculty and the Departments (Dean, Faculty Administrator, Academic Program Advisor, Department Heads).</li> </ol>



## **IMPLEMENTATION AND ACCOUNTABILITY:**

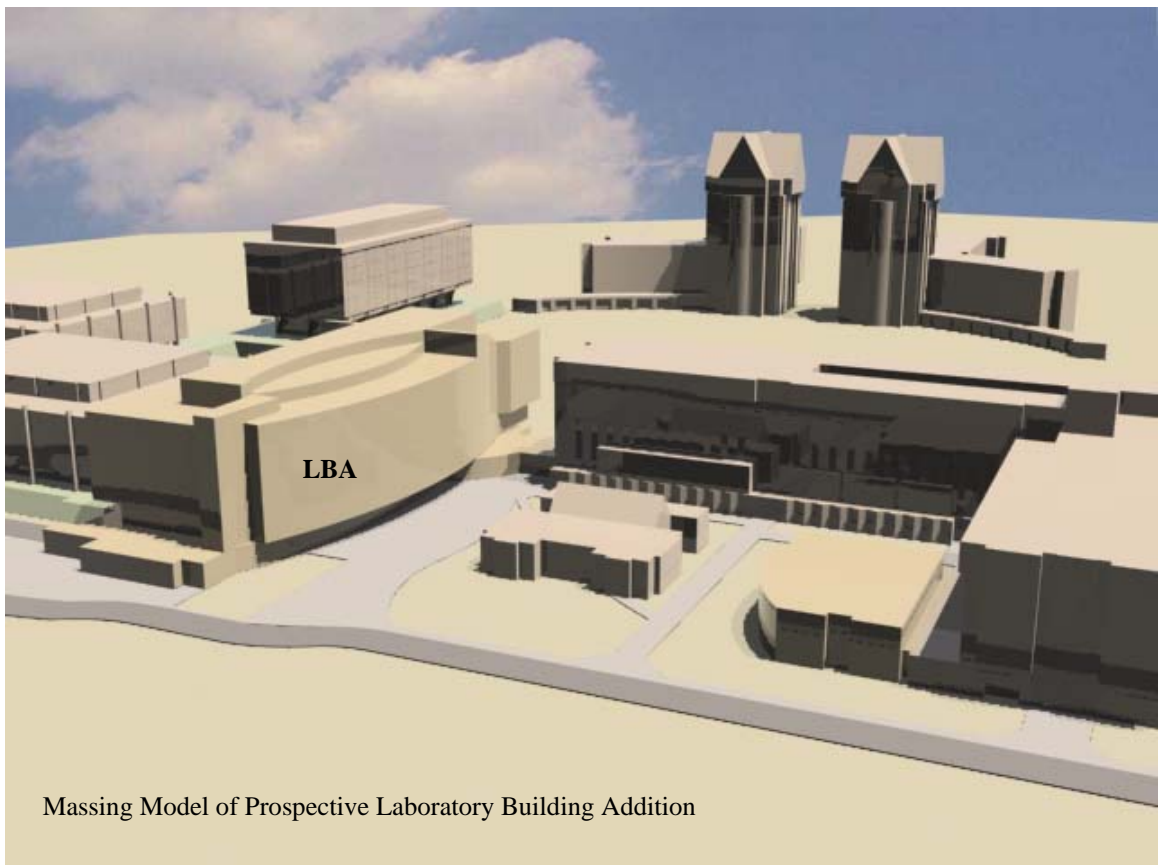
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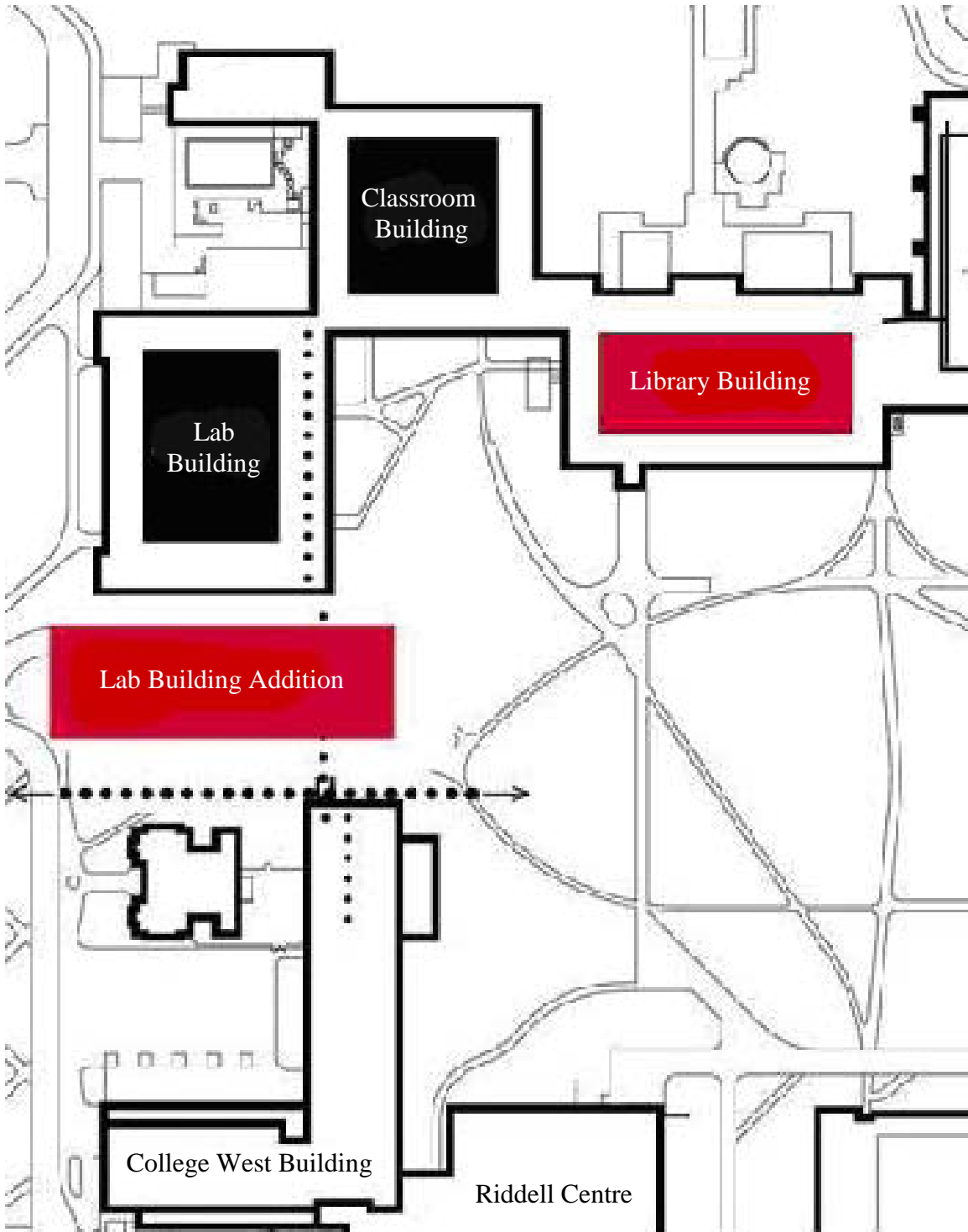
The responsibility for the implementation of this plan rests with the Faculty of Science generally and particularly with the Dean's Executive Committee. This Committee will provide the leadership required to establish priorities in the Faculty of Science. This plan sets specific objectives and necessary actions that have measurable outcomes. The Dean's Office will be responsible for monitoring the progress of the Faculty in achieving these goals. Progress will be reported to the President's Office

annually and will be documented in the Faculty of Science Annual Report. An assessment of the implications of resource constraints and other variables on our ability to achieve our goals will also be presented.

This is a living document subject to regular review and update by the Dean's Executive Committee in the context of the ongoing growth, development and changes. Members of the Faculty of Science are invited to share their thoughts on the development of the plan with the Dean's Executive Committee.



Massing Model of Prospective Laboratory Building Addition



*Back Cover:* Proposed Laboratory Building Addition - South West Side Perspective

