



UNIVERSITY OF
REGINA

FACULTY OF SCIENCE

Annual Report

January 1, 2003 – December 31, 2003

DEAN'S COMMENTS

The Faculty of Science has undergone a period of rejuvenation and rebuilding in all departments over the last four years through the recruitment and retention of young, enthusiastic, successful faculty members. The intensive recruitment phase for the Faculty is drawing to a close and the Faculty will now face the challenge of retaining these new colleagues who are shaping the research directions and programs of the Faculty in new and innovative ways, promoting both independent and integrated collaborative research and teaching programs in the Faculty and the University, Provincially, Nationally and Internationally. Our faculty members have attracted significant external research and infrastructure funding through the Natural Sciences and Engineering Research Council of Canada (NSERC), the Social Sciences and Humanities Research Council of Canada (SSHRC), the Canadian Foundation for Innovation (CFI), other government funding councils and the private sector. The Faculty has continued to expand and develop the research enterprise, and the infrastructure to support these programs because of the funding success of the faculty members. The Faculty of Science boasts a 95% success rate with NSERC supporting both new and existing faculty members research programs. The Faculty was successful this year in securing CFI funding to support new laboratories and research facilities. The Faculty of Science looks forward to the increased infrastructure and space that the new laboratory building on campus will provide. This new building and the research facilities contained within will be a powerful retention tool for the high quality faculty members that were recently recruited.

The Faculty of Science is increasing the opportunity for students to follow a wide variety of career options by developing new programs both within Science and in collaboration with other faculties at the University of Regina, with the Saskatchewan Institute of Applied Science and Technology (SIAST), and with foreign institutions. These partnerships allow us to expand our program offerings using existing resources to build capacity and provide new opportunities for our students and the residents of Saskatchewan, Canada and abroad. The Faculty of Science is exploring collaborative opportunities with international institutions particularly in China.

The Faculty of Science is an active participant and contributor to the local community and the Province of Saskatchewan. The Department of Mathematics and Statistics hosted Math Camp 2003 that attracted participants from across the Province. Math Central is a community-based interactive math web site. Many of our faculty members and students have been invited to elementary and high school classrooms. Others have given demonstrations and presentations to various community organizations or sit as board members or volunteers on a number of community based organizations. The Faculty of Science has been a continuing supporter of the Virtual Science Fair open to elementary and secondary students across the country as well as of the Saskatchewan Science Centre.

The Faculty of Science is proud of its accomplishments over the past year. I would like to take this opportunity to thank the faculty and staff for their dedication and support. In particular I would like to thank the two Assistant Deans (Drs. Chandler and Wilson), the Faculty Administrator (Audrey Perra), Coordinator, Science Operations (Gerry Brook) and the Department Heads (Drs. William Chapco, Biology; Andrew Wee, Chemistry and Biochemistry; Brien Maguire, Computer Science; Janis Dale, Geology; Bruce Gilligan, Mathematics and Statistics; George Lolos, Physics) for their assistance in compiling this report. I would also like to thank Raeanne Thompson (Program Advisor), Sandy Barker and Sorcha O'Rorke in the Science General Office, Janet Campbell, Office of Research Services, and Lori Pearce, Faculty of Graduate Studies and Research for providing the necessary data. Finally I would like to thank my secretary Marlene Miller for her effort in formatting this document. If you have any comments please do not hesitate to send them to the Dean's Office.

Dr. Katherine Bergman
Dean of Science

Faculty of Science – Strategic Planning Statement

VISION

The Faculty of Science will sustain excellence in the creation and dissemination of knowledge by research, scholarly publication and teaching in both basic and applied science.

Mission

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 will continue to build a dynamic, externally funded, peer-evaluated, nationally and internationally recognized research base. This base will also continue to provide a solid foundation for our undergraduate and graduate programs, and a mechanism for attracting and retaining high quality faculty and students to the Faculty of Science.

The Faculty of Science will foster an environment of individual responsibility and teamwork promoting cooperation and collaboration among faculty, students and staff. Individual and/or collaborative Research and Teaching is expected and will be supported. The mandate of the Faculty of Science is to develop expertise in the Province of Saskatchewan and to provide a supportive environment for retaining this expertise in the Province.

Goals

- *Research and Teaching:* To provide an environment that promotes and facilitates both individual and collaborative research and teaching activities of faculty, students and staff.
- *Faculty:* To attract and retain high quality faculty and to support them in their academic responsibilities because the quality of the faculty define the quality of the Faculty of Science.
- *Students:* To provide high quality programs that develop critical thinking skills and build a solid scientific base of knowledge and to enhance these programs by introducing students to research.
- *Recognition:* To continue to promote and develop both national and international research and teaching reputations by actively pursuing research and teaching collaborations in Canada and abroad.
- *Service:* To continue to improve service delivery and to provide programs and lectures for schools and community organizations.
- *Accountability:* To be accountable to the University of Regina, the national granting councils, the community of our peers and the public for the evaluation of our performance.

TABLE OF CONTENTS

Dean's Comments	i
Faculty of Science – Strategic Planning Statement	ii
PART 1: INTRODUCTION	1
PART 2: FACULTY OVERVIEW	3
2.1 Departments	4
2.2 Human Resources	11
2.3 Faculty Committees	14
2.4 Fundraising	16
PART 3: NEW FACES IN THE FACULTY	17
3.1 Canada Research Chairs	17
3.2 Faculty Members	17
3.3 Laboratory Instructors	19
3.4 Faculty Laboratories	20
3.5 Faculty Administrative Staff	20
PART 4: UNDERGRADUATE PROGRAMS	22
4.1 Enrollment Trends	22
4.2 Student Recruitment Strategies	25
4.3 Co-operative Education Program	25
4.4 Departmental Programs	25
4.5 Undergraduate Societies	26
4.6 Undergraduate Scholarships	28
4.7 Awards for Excellence in Undergraduate Teaching	28
4.8 Dean's Honour List	28
PART 5: GRADUATE PROGRAM	30
5.1 Enrollment Trends	30
5.2 Departmental Programs	31
5.3 Graduate Scholarship and Support	32
5.4 Graduate Student Awards	32
5.5 National Scholarships and Fellowships	33
5.6 NSERC Committees	34
5.7 Centennial Student Employment Program	34
PART 6: RESEARCH	35
6.1 Departmental Research Activities	35
6.2 External Funding and Granting Agencies	37
6.3 Canada Research Chairs	38
6.4 International Research Development	39
6.5 Research Opportunities for Undergraduate Students	39
6.6 Research Journals	39
PART 7: UNIVERSITY SERVICE	40
7.1 Representation on University Committees	40
7.2 Professional Organizations	40
PART 8: PUBLIC SERVICE	43
8.1 Schools	43
8.2 Community	43
APPENDIX 1: PROFESSOR EMERITI FOR 2003	44
Appendix 2: Adjunct and Associate Members for 2003	45
Appendix 3: Sessional Lecturers for 2003	46

Part 1: Introduction

The Faculty of Science has enjoyed a successful year in research and teaching. Many new people have joined the Faculty this year and several new initiatives have been successfully pursued. This report highlights the major accomplishments in the Faculty of Science between January 1, 2003 and December 31, 2003. The Faculty commitment to research and teaching demonstrates to others that we are a critical and innovative part of the University of Regina, the City and the Province.

This document summarizes accomplishments of 2003, and gives an indication of future directions and potential. The Faculty has undergone many changes over the last year as long time members retired, while others pursued opportunities in other locations and were replaced by new faculty members with new ideas about future directions and expectations. Many exciting new initiatives in both research and teaching within the Faculty, between faculties, and with outside agencies and institutions are currently being explored, and will be reported next year. Additional and more detailed information about our programs and program requirements, research, faculty members, students and staff is available on our web site at www.uregina.ca/science.

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. There are joint degrees with the faculties of Arts and Education, and combined degree programs with SIAST including the new Bachelor of Medical Imaging. The Faculty is exploring collaborative opportunities with foreign institutions particularly in China. Many of the programs in the Faculty of Science offer a Cooperative Education option. Laboratory work is a compulsory aspect of the degree programs because it provides students with practical experience in a controlled environment. The Faculty of Science has a strong commitment to teaching and our members are recognized for their contributions to teaching. This year Ms. Gwen Jones (Laboratory Instructor, Biology) was awarded the Alumni Award for Excellence in Undergraduate Teaching at the Spring 2003 Convocation. Mr. Terry Ross (Laboratory Instructor, Biology) received an Inspiring Teachers Award in Fall 2003.

The Faculty of Science offers graduate programs in the various disciplines leading to degrees in a Master of Science or a Doctor of Philosophy. The student works in these thesis-based degree programs under the direct supervision of a faculty member.

Faculty members continue to develop 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 proposed and developed on an ongoing basis. This year the Faculty announced the successful nomination of two Canada Research Chairs. Dr. Peter Leavitt (Department of Biology) was awarded a Tier I Canada Research Chair in Environmental Change and Society. Dr. Randy Lewis (Department of Physics) was awarded a Tier II Canada Research Chair in Computational Physics. Dr. Guoxiang Chi (Department of Geology) was awarded a CFI grant for the development of a "Geofluids Characterization and Modeling Laboratory" providing the basis for research in the area of geofluids, which is a new emerging branch of geoscience. Dr. Dae-Yeon Suh (Department of Chemistry and Biochemistry) was successful in securing external funding support for research and equipment from NSERC for the development of a research program on the chalcone synthase superfamily in plants and microorganisms. Dr. Renata Bailey (Department of Chemistry and Biochemistry) was awarded a CFI grant for the development of a laboratory to study the sources, transport and transformation processes of agrochemicals in Western Canada. Dr. Richard Manzon (Department of Biology) was awarded a CFI grant for the development of a fully functional radioactivity analysis laboratory, and animal cell and tissue culture facility for biological, biochemical and medical (health sciences) research.

Fund raising will take on a new profile in the Faculty over the next few years. Our focus will be on the development of student scholarships at both the undergraduate and graduate level to support our goal of attracting high quality students. The government announced (Fall 2003) the commitment of funds to build a new Laboratory Building Addition. This building will enhance the research and teaching programs in the Faculty of Science and will provide the necessary infrastructure to recruit and retain high quality faculty and students to the University of Regina.

Many faculty members and students are active in the community in local and rural locations, giving lectures and demonstrations, in elementary and high school classrooms, conducting campus tours and organizing camps. This aspect of public service is an important component of our contribution to the community that supports us.

Part 2: Faculty Overview

The Faculty of Science has 87 faculty members, 2 instructors, 24 laboratory instructors and technicians, 22 administrative support staff, 1150 full time and 150 part time undergraduate, and 123 graduate students. Members of the Faculty of Science have a strong commitment to research and teaching excellence. The Faculty of Science is composed of six departments: Biology, Chemistry and Biochemistry, Computer Science, Geology, Mathematics and Statistics, and Physics. Each department offers both undergraduate (BSc and BSc Honours) and graduate (MSc and PhD) degrees. Opportunities for interdepartmental programs (eg., Biology and Chemistry, Biology and Statistics) and interfaculty programs [eg., Mathematics and Education, Statistics and Economics (Arts)] are available, as are joint programs with SIAST. The Faculty is currently evaluating collaborative opportunities with international institutions (particularly in China).

ACCOMPLISHMENTS AND INITIATIVES (2003-2004)

The University of Regina Planning Document and the Faculty of Science Vision, Mission and Goals Statement guide the decision making process of the Faculty. The Faculty of Science strategic plan should be completed by May 2004 and presented to Faculty Council for vote at the September 2004 council meeting. The Faculty of Science is committed to developing a strong foundation of inquiry-based research to support integrated collaborative research programs internally and externally, nationally and internationally, and to support the development of practical applications derived from this research. A strong NSERC supported base of research will ensure that the University maintains a stable level of funding from NSERC to support the indirect costs of research across the Institution. A strong research program is the key to the success of the teaching programs at both the undergraduate and graduate levels, because research informs teaching and maintains its currency. Our researchers serve as role models and mentors for our students. Our students are a reflection and measure of the success of the research and teaching programs of the Faculty as well as of the Institution.

The Faculty of Science over the past four years has been working steadily to support the following specific goals and initiatives:

- Rebuild the Department of Computer Science
- Rebuild the Department of Chemistry and Biochemistry
- Upgrade the undergraduate laboratories to maintain program currency and to meet legislated safety standards
- Remove and dispose of chemical wastes and establish policies and procedures for handling of chemicals
- Address safety and firecode regulations to ensure that the Laboratory Building meets the provincial standards
- Develop new programs (teaching and research) that reflect the University's strategic areas of emphases both discipline-based and integrated collaborative programs
- Increase enrolment both graduate and undergraduate including international students
- Increase funding for graduate and undergraduate students

The Faculty has been successful in meeting these goals but most require an ongoing commitment if these objectives are to be sustained. Many have required significant resources to address the accumulated deferred maintenance and infrastructure problems, and if not given a commitment of ongoing support will not be sustained. These goals reflect the objectives stated in the University of Regina document entitled *Reaching Our Potential: Planning for Progress 2002-06* as well as the Student Recruitment Task Force Report, and Faculty Recruitment and Retention Report. These goals provide the framework for the allocation of Faculty resources and ongoing support to the individual departments. The Departments have each developed planning documents that have undergone external review and are consistent with the University of Regina *Reaching Our Potential*, the University of Regina Strategic Research Plan and the Faculty of Science Vision, Mission and Goals statement and strategic planning document. The departmental documents guide faculty recruitment, program development (teaching and research) and infrastructure support. In this context the Faculty of Science through the various departments has had a very successful year. The accomplishments and initiatives of each department are highlighted below.

2.1 Departments

A brief overview of each department and highlights of their accomplishments for the year 2003 are described below.

Department of Biology:

The Department has identified two areas of focus (Environmental/Ecology Stream and Molecular Biology Stream) that were supported by the External Review Team in 2000. These areas provide the framework for recruitment and program development (teaching and research) in the Department, and are consistent with the strategic research areas of emphases in Energy and Environment, and Health Research, described in the University of Regina Strategic Research Plan. Members of the Department are actively involved with the Sustainable Communities Initiative and Cities of Tomorrow.

Accomplishments

- Dr. Christopher Yost joined the Department in August, adding expertise to the molecular biology and microbiology teaching and research programs.
- Dr. Peter Leavitt was awarded a Canada Research Chair (Tier I) in Environmental/Ecology Change and Society. In conjunction with that position Dr. Leavitt was successful in receiving substantial funding (\$2.3M) from the Canada Foundation for Innovation (CFI) fund and supporting partners.
- Dr. Richard Manzon was successful in securing external funding (\$140,000) from CFI for the development of a Radioactivity Analysis Laboratory and tissue culture facility.
- Ms. Gwen Jones, Laboratory Instructor in Cell Biology and Genetics, was awarded the Alumni Association Award for Excellence in Undergraduate Teaching at the Spring 2003 convocation. Ms. Jones, who has served the University for over 30 years, has had a profound influence on the thousands of students she has taught.
- Mr. Terry Ross, Laboratory Instructor in Physiology, received an Inspiring Teacher Award for 2003.
- The computer room facility (LB 416) was completed in 2003 and will support teaching programs in both the Environmental/Ecology and Molecular Biology streams.
- Two department members are on grant selection committees: NSERC (Wilson) and HSURC (Ashton).
- In late November the Department in cooperation with Provincial Laboratories of Saskatchewan hosted a workshop entitled "The Bacterial Agents of Bioterrorism: Laboratory-based procedures for Canadian Tier I Lab Facilities."
- Many members are involved in interactions with schools, community groups and the media.
- The Department supported 3 Postdoctoral Fellows. Faculty members supervised 4 Honours students to completion, 14 Masters students (3 completed) and 11 PhD candidates (6 completed). Two of the graduating PhD students were awarded NSERC Postdoctoral Fellowships for further study.
- Collectively 7 faculty members of a total of 9 in the Department of Biology held 7 NSERC Discovery Grants, 1 NSERC Research Tools and Instrument (RTI) Grant and 3 other grants and contracts totalling about \$2.7 million.

Initiatives

- Mr. Terry Ross has received a Technology Enhanced Learning (TEL) grant funding for developing Biology 101 laboratories.
- New Faculty Recruitment: The Department has searches ongoing to fill positions for a quantitative ecologist and an environmental microbiologist. The faculty positions are expected to fit into the two areas of focus Environmental/Ecology Biology and Molecular Biology/Genetics.
- Laboratory Instructor Recruitment: The Department is currently searching for a Laboratory Instructor whose expertise is in Cell Biology and Genetics. The Laboratory Instructor provides the required support for the undergraduate teaching program in the Molecular Biology/Genetics stream.

Department of Chemistry and Biochemistry:

The Department has identified two areas of emphases (Chemistry of Biologic Systems and Chemistry of Environmental/Energy Systems) in their planning document of 2000 that builds on the four pillars of chemistry: Analytical, Inorganic, Organic and Physical Chemistry. These areas provide the framework for recruitment and program development (teaching and research) in the Department, and are consistent with the strategic areas of emphases in Energy and Environment, and Health Research, described in the University of Regina Strategic Research Plan. Members of the Department are actively involved with the Sustainable Communities Initiative and Cities of Tomorrow as well as the Petroleum Technology Research Centre (PTRC). The Department continues to work toward achieving the objectives identified in their planning document.

Accomplishments

- Of the two positions (1 in Chemistry and 1 in Biochemistry) that were advertised in 2003, the Department was successful in recruiting a new faculty member – Dr. Brian Sterenberg – who brings expertise in organometallic chemistry providing strength in the Environmental/Energy Systems area.
- The Department has successfully completed the upgrade and acquisition of equipment (initiated in 1999) for use in teaching and research. Teaching instrumentation includes: analytical balances, pH meters, polymerase chain-reaction (PCR) machines, benchtop UV-vis spectrophotometers, upgrades to the high performance liquid chromatograph, a new Digilab fourier transform infra-red spectrophotometer (FT-IR), a new graphite furnace atomic absorption spectrophotometer, computer upgrade for the 200 MHz nuclear magnetic resonance (NMR) spectrometer and a new 300 MHz NMR.
- The new 500 MHz LC-NMR, purchased in 2002 through a joint CFI Fund, has been successfully installed in the International Test Centre in cooperation with the Faculty of Engineering. Our faculty members will have open access to this equipment to perform sophisticated research in the Environmental/Energy Systems area.
- Dr. Renata Bailey was awarded a CFI grant of \$150,650 for acquiring state-of-the-art analytica equipment to study the sources, transport and transformation processes of agrochemicals in Western Canada.
- External Funding and Research Activities: New faculty members (Suh, Bailey) were successful in securing external funding support for research and equipment from NSERC and CFI. Faculty members who were up for renewal of their NSERC grants (East, Kelln, Wee) were also successful. The initial commitment from the Faculty of Science, the University and the Department to invest in our new faculty members has contributed to the positive results in external grant awards.
- Some of our faculty members have also been successful elsewhere in their scholarly pursuits: Dr. Scott Murphy was granted a Chemical Institute of Canada/International Union of Pure and Applied Chemistry (IUPAC) Travel Award to attend the Canadian Society of Chemistry/IUPAC Conference and Exhibition in Ottawa this past summer; Dr. Tanya Dahms (co-principal investigator) with Dr. D. Cramb (University of Calgary) was awarded an NSERC-Collaborative Research Grant; Dr. Renata Bailey served as one of the members on the Advisory Group on Pesticide use for the City of Regina as well as Chair of the Environmental Cluster group for the Regina Regional Economic Development Authority (RREDA).
- The Department supported 2 Postdoctoral Fellows. Faculty members supervised 6 Honours students to completion, 14 Masters students (3 completed) and 5 PhD students.
- Collectively 6 faculty members of a total of 11 in the Department of Chemistry and Biochemistry held 6 NSERC Discovery Grants, 2 NSERC RTI grants and 4 other grants and contracts totalling about \$547,212.

Initiatives

- To ensure that the capabilities of the new 300 MHz NMR are realized, Ms. Chris Dehm and Mr. Henry Yee will be attending a 5-day course at Varian NMR, Palo Alto, CA, USA and will provide technical seminars/training to the Department and other interested parties on the proper use of the NMR hardware and software for research and teaching. The NMR course fee was negotiated with the purchase of the instrument and is provided at no cost by Varian NMR. The travel and accommodation are covered by financial contributions from the Faculty of Science and the University.
- Equipment Cost-Recovery Fee: There are plans to implement cost recovery charges for the use of the recently acquired equipment (eg., NMR, FT-IR, GC-MS). Since our equipment is used for teaching and research, an equitable formula for cost-recovery is being evaluated and the funds collected will be used to maintain the equipment.

- New Biochemistry Faculty Recruitment: The Department has two searches ongoing to fill two positions in Biochemistry (Drs. Kelln and Blass). The application pool this time is much larger (76 applications) than in previous years and there are many strong candidates. Dr. Andrew Freywald has accepted a position in the Department and will join the Faculty on July 1, 2004.

Department of Computer Science:

The Department has identified three principal areas of focus (Data Mining and Databases, Digital/Multi Media and Software Systems Development). These areas provide the framework for recruitment and program development (teaching and research) in the Department, and are consistent with the strategic areas of emphases in Energy and Environment, Informatics, and Health Research, described in the University of Regina Strategic Research Plan. Members of the Department are actively involved with the Sustainable Communities Initiative and are exploring opportunities with PTRC.

Accomplishments

- Drs. David Gerhard and Dominik Slezak joined the department in January bringing expertise in the areas of computational acoustics and theory of rough sets respectively. Mr. Philip Fong joined the Department in May of this year and successfully defended his PhD thesis in December. Philip brings expertise to the software systems development area, and in particular a focus on Open Source Software and Systems. Nova Scheidt joined the department in May as a Laboratory Instructor in Software Systems Development.
- **Enhanced Facilities**, located in CL136, for the Undergraduate Digital Media Laboratory (UDML) and Software Systems Development Lab will be available in January 2004.
- **Multimedia Program**. The addition of three courses including: CS325, Introduction to Multimedia Systems; CS408, Animation Software Design; and CS497, Digital Media Project is a continuation of plans to increase opportunities for studies in multimedia. The creation of the Undergraduate Digital Multimedia Lab last year allows these courses to be taught.
- **Post-Diploma Program**. This program, scheduled for Senate approval in Spring 2004, permits SIAST Computer Information Systems and Computer Technology diploma graduates to complete a BSc degree with two additional years of university studies. This option delivers on the request to increase learning opportunities for Saskatchewan residents made by the Government of Saskatchewan when it provided additional funds to Computer Science.
- **Software Systems Development (SSD) Program**. Senate approval was received for the SSD program and addresses industry requirements for graduates with a solid background in software engineering by providing hands-on experience in software design, development and management of enterprise information systems, as well as related methods, procedures and policies.
- **International Visitors and International Reputation**. The following were visiting scholars in the Computer Science Department this year: Mr. Jian Wang, Mr. Hong Peng, Dr. Hong Tang, Dr. Yu Wu, Ms. Fang Chen, Mr. Zhenxing Dong, Mr. Weifeng Song, Mr. Xiangdong Hu, Mr. Yanbing Liu and Dr. Dafang Zhang from Chongqing University; Dr. Jishun Kuang and Dr. Dafang Zhang from Hunan University; Dr. Zhang Huagong and Dr. Jingzhou Li from Shandong University; and Dr. Yinbiang Zhao and Ms. Huanzhao Wang from Xi'an Jiaotong University; and Dr. Jakub Wroblewski from the Polish-Japanese Institute of Information Technology.
- The Department has continued representation and participation on the international research scene, as judged by program committee membership and visitors to Regina, especially in the areas of Web Intelligence and Rough Sets.
- **TEL Grants**. The Department has been awarded a number of TEL grants for 2003.
 - Dr. Howard Hamilton, CS330 Introduction to Operating Systems.
 - Dr. Malek Mouhoub, CS340 Algorithms and Data Structure.
 - Dr. Samira Sadaoui-Mouhoub, CS372 Software Engineering Methodology.
 - Dr. JingTao Yao, CS306 Data Communications and Networks.
- **Other TEL class projects**, which had been awarded in 2002, have been offered including:
 - *CS408 Animation Software Design* by Dr. Howard Hamilton and Charlie Fox (Media Production and Studies);

- *CS170 Fundamentals of Computer Science I* by Drs. Howard Hamilton, Robert Hilderman and Yiyu Yao;
- *CS210 Fundamentals of Computer Science II* by Dr. Lisa Fan.
- The University of Regina awarded a former visiting scholar, Jing Xin Hai, the Honorary Degree, Doctor of Laws (*honoris causa*) for his work in Information Technology and in building relations with the University of Regina.
- The Department was host to 17 Visiting Scholars. Faculty members supervised 2 Honours students to completion, 56 Masters students (6 completed) and 17 PhD students (1 completed).
- Collectively 18 faculty members of a total of 18 in the Department of Computer Science held 12 NSERC Discovery Grants, and 32 other grants and contracts totalling about \$814,253.

Initiatives

- **Software Systems Development (SSD) Lab.** Developing this lab has triggered an evaluation of all software platforms used in CS undergraduate labs. The \$100,000.00 funding of this lab request provided an opportunity to change one of the undergraduate labs to the Linux operating system. Consequently, beginning Winter 2004, undergraduate students will have access to Windows XP, Linux and Sun Solaris operating systems. This addresses a recommendation in the Department's most recent Canadian Information Processing Society Accreditation Report that different computing environments be made available to students.
- **Open Systems Lab (OSS).** Major commercial software developers, including IBM and Novell, are aware of the value of the OSS development model, which includes intense scrutiny of code and rapid development, in creating more reliable software more economically. Funding of \$60,000.00 from Western Economic Development and a contribution of \$6,000.00 from the Faculty of Science has been secured for 2004.
- **Interactive Media Lab.** This laboratory will provide students with the opportunity to gain experience with the technology of the interactive entertainment industry and will complement the existing Undergraduate Digital Media Lab shared between Science and Fine Arts. Funding of \$97,000.00 from Western Economic Development and a contribution of \$10,000.00 from the Faculty of Science has been secured for 2004.
- **MSDNAA Program.** This program provides Microsoft operating systems and development software worth thousands of dollars to Computer Science students for home use at no cost.
- **New Faculty Recruitment:** The Department has a search ongoing to fill a position that was left vacant when Dr. Christine Chan moved to Engineering in the summer of 2003. Applications are being received and a shortlist of candidates, followed by interviews will begin. This position will be filled July 1, 2004.

Department of Geology:

The Department has identified field-based resource geology as the principal area of focus and this provides the framework for recruitment and program development. The focus on field-based geology complements the focus of the Department of Geology at the University of Saskatchewan and at Saskatchewan Industry and Resources allowing for extensive collaboration between the different groups. This focus is consistent with the strategic areas of emphases in Energy and Environment described in the University of Regina Strategic Research Plan. Members of the Department are actively involved in the Petroleum Technology Research Centre (PTRC), Prairie Adaptation Research Collaborative, (PARC), Canadian Plains Research Center (CPRC), Communities of Tomorrow and Environmental Quality Analysis Laboratory (EQAL) as well as a number of international research projects.

Accomplishments

- The Department continues its tradition of educating and producing graduates at the undergraduate (BSc and BSc Honours) and graduate (MSc and PhD) levels that are in high demand by industry and government surveys. Most of our students are successful in gaining summer employment in the petroleum industry or with Saskatchewan Industry and Resources. The majority of our graduate students are offered permanent or long-term positions in industry or with government before completion of their theses, indicating the demand for these students.

- The Department continues to encourage collaboration with other institutions including universities, government and industry. Ongoing collaboration continues with the Geological Survey of Canada, Saskatchewan Industry and Resources in the Petroleum Geology Branch and Northern Geological Survey of the Exploration Geological Services Division. Industry connections include Potash Corporation of Saskatchewan (PCS), Alcan Canada (support in kind), Gatan U.S.A. Inc. (support in kind), JEOL USA Inc. (support in kind) and Nexen, to name a few. There is continued collaboration with researchers from other universities such as the University of Saskatchewan, Chinese Academy of Sciences, Sir Wilfred Laurier University, University of Winnipeg, University of British Columbia and Queen's University. Current research activities include projects throughout Canada notably in Saskatchewan, Alberta, Manitoba, British Columbia, Ontario, New Brunswick and Nunavut. Present ongoing international projects include those in the United States, China, Italy, Costa Rica, east and southeast Africa, Greenland and Antarctica.
- Graduate and undergraduate students were supported in field and laboratory-based thesis projects sponsored by the Northern Geological Survey and Petroleum Geology Branch of the Exploration Geological Services Division of Saskatchewan Industry and Resources. Many other research programs including student research were supported by industry.
- Dr. Guoxiang Chi was awarded a CFI grant of \$48,500 for the development of a "Geofluids Characterization and Modeling Laboratory." This facility is the basis for research in the area of geofluids, which is a new emerging branch of geoscience. The data generated from this facility will contribute to a wide range of applications including our understanding of the movement of geofluids in many geological settings such as sedimentary basins and hydrocarbon systems, the genesis of gold deposits, as well as the feasibility of long-term greenhouse gas (CO₂) storage in geological formations. This is consistent with the University of Regina strategic research area in Energy and Environment and should facilitate research cooperation with the Faculty of Engineering.
- Faculty of Science Scanning Electron Microscope (SEM) Laboratory is now fully operational. The SEM Lab has a state-of-the-art JEOL Inc. JSM-6360 scanning electron microscope with an attached Gatan Inc. MonoCL3 Cathodluminescence system to collect images and spectra for a wide range of applications. The equipment was purchased using funds from the Faculty of Science, individual researchers and a CFI grant awarded to Dr. Ian Coulson. The system has applications in many other disciplines and has already generated interest from other departments such as Chemistry and Biochemistry, Biology and Physical Geography as well as outside users. The facility will run on a consumable cost recovery basis.
- Dr. Janis Dale joined the department in July, assuming the position of Head of the Department. She adds expertise to the teaching and research programs in the areas of geomorphology, glacial geology and soil science. Her current research areas include the prairies, Nunavut, Greenland, Costa Rica and China.
- Dr. Hairuo Qing continues in his capacity as the Research Coordinator, Energy and Environment at the University of Regina. He has been active in projects relating to the use of carbonate reservoirs as storage sites for long-term CO₂ sequestration in the Weyburn field.
- Drs. Hairuo Qing and Guoxiang Chi are part of a group of geologists from Canada who were invited to visit universities in Beijing, Xi'an and Chengdu, China, December 18th to 31st, 2003, to explore opportunities for collaborative projects with researchers from Canada.
- The Department underwent a unit review in Fall 2002 and has been actively working toward the recommendations outlined in the review, and preparing a response to the unit review. To this end two new subcommittees were established, the Curriculum Subcommittee met on a biweekly basis throughout the term and the Space Subcommittee has prepared a detailed survey of current uses of space, as well as present and future needs. This survey will form the basis for the rationalization of new space.
- A number of our graduate students were honoured in 2003 by external agencies. Ms. Kim Bailey was the recipient of the Association of Professional Engineers and Geoscientists (APEGS) Gold medal award as well as an NSERC PGS A scholarship. Ms. Mauri Smith was awarded the Alex Cameron Award based on the best thesis topic by the Canadian Society of Organic Petrologists.
- There were 2 visiting professors in 2003, Dr. D.L. Han from China Oceanography University and Dr. J.R. Ye from the China University of Geoscience.

- The Department supported 3 Postdoctoral Fellows and was host to 2 visiting scholars. Faculty members supervised 3 Honours students to completion, 19 Masters students (3 completed) and 5 PhD students.
- Collectively 8 faculty members in the Department of Geology held 5 NSERC Discovery Grants, and approximately 11 other grants and contracts totalling about \$525,213.

Initiatives

- The Department was granted additional research and office space to accommodate new faculty, additional graduate students, and the expansion and development of our research laboratory facilities, including the new GeoModelling and GIS Research Laboratory, Geosystems Research Laboratory and a new student study area on the second floor. New rooms include CW 207.1 to CW 207.6 suites, CW 230.2, CS 230.3 and CS 230.4 and CW 234.1 and CW 234.2. Renovations are ongoing to develop these new areas. Funding of \$110,000 from Western Economic Development and a contribution of \$11,000 from the Faculty of Science has been secured for 2004 to support the Geo-Modelling and GIS Research Laboratory.
- The Department is exploring the possibility of new joint programs particularly with Geography, Biology, and Chemistry and Biochemistry to provide new programs consistent with the University of Regina's strategic emphasis in Energy and Environment.
- The Department is currently searching for a 3-year term position at the rank of Assistant Professor to support the teaching and research program in the Department. Applications are being received and a shortlist of candidates, followed by interviews will begin. This position will be filled July 1, 2004.

Department of Mathematics and Statistics:

The Department has a primary focus in theoretical areas and has identified Geometry, Algebra, Homotopy Theory, Matrix Theory, Operator Algebras, Analysis, Graph Theory and Number Theory as the principal areas of research. These provide the framework for recruitment and program development. The Department also has research and program activities in theoretical and applied Statistics and Actuarial Science allowing for extensive collaboration with the private sector. These areas of focus are consistent with the University of Regina strategic research plan that commits to supporting high quality areas of basic research and the strategic research emphasis in Informatics. The Department is also very active in public outreach through Math Central and Math Camp. This is one of the stated goals of the University of Regina in the Strategic Planning Document under public service and accountability.

Accomplishments

- The Department was successful in recruiting three new faculty members -- two at the Assistant (Drs. Martin Argerami and Fernando Szechtman) and one at the Associate (Dr. Donald Stanley) Professor ranks. These new members provide expertise in operator theory, algebra and homotopy theory respectively.
- The presence of four term appointments (Drs. Francesco Barioli, Jonathan Funk, Alex Nenashev, Alireza Simchi), one post-doc (Dr. Jonathan Scott) and one MITACS post-doc (Dr. Xiangwen Li) contributes in a significant way to the research atmosphere in the Department including the weekly Algebra and MITACS seminars. Both of these seminars are thriving and there are Colloquium talks presented by visitors to the Department.
- There is continued success and ongoing development of the Actuarial Science program. In 2003 the process of instituting and granting the following scholarships from our corporate sponsors (Saskatchewan Government Insurance \$3000.00, The Co-operators \$3000.00, Canada Life \$6000.00, AON Consulting \$1000.00 and Saskatchewan Workers' Compensation Board \$1000.00) was completed. The first graduates from the program will be at the Spring 2004 convocation.
- Department's Outreach Initiatives. Significant outreach initiatives of the Department in 2003 include:
 - Math Counts 2003; held March 8, 2003 at the U of R.
 - The Basterfield Lecture; held March 27, 2003; Dr. Robert Brown, Professor, Dept of Stats & Actuarial Science, University of Waterloo presented a talk entitled "*Retirement Security and Population Aging*".
 - Mathematics Enrichment Camp; held March 28, 2003 at the U of R.
 - First Prairie Discrete Mathematics Workshop; held October 3 – 5, 2003 at the U of R.

- Math 101; offered online via WebCT.
- Program for gifted (high school) students; there was such a positive response to this in the Autumn of 2003 that we split into two groups; one for Grades 6/7/8 and one for Grades 9/10/11/12, run in Dr. Chris Fisher's absence by Dr. Dieter Ruoff and Mr. Patrick Maidorn.
- Math Central; probably the most used and recognized resource at the U of R with nearly thirty thousand hits per day in peak periods mostly from the United States. The overall growth in use of this resource is exponential.
- The primary server for ILAS (International Linear Algebra Society); The Department hosts this server and Dr. Shaun Fallat is the web master.
- The Department supported 3 Postdoctoral Fellows and was host to 1 Visiting Scholar. Faculty members supervised 9 Masters students (1 completed) and 5 PhD students.
- Collectively 13 faculty members of a total of 26 in the Department of Mathematics and Statistics held 13 NSERC Discovery Grants and 1 other grant totalling about \$213,300.

Initiatives

- The Department was successful in recruiting two tenure track appointments at the rank of Assistant Professor. Dr. Michael Kozdron and Dr. Augustin-Liviu Mare will join the Faculty July 2004 bringing expertise in Statistics and Mathematics, respectively.
- The Department is in the process of establishing, in conjunction with the University's Coop Office, the Actuarial Science Internship Program. The first student placements will be made in May 2004.

Department of Physics:

The Physics Department has identified two principal areas of expertise, experimental and theoretical subatomic physics. This concentration in the broad field of subatomic physics complements the closely related field of particle astrophysics an area of growth potential given the existing resources on campus. The areas of focus and proposed growth were supported by the 1996 external review. These areas of focus are consistent with the University of Regina strategic research plan that commits to supporting high quality areas of basic research and the strategic research emphasis in Informatics. The effort to improve the delivery of education (teaching) is one of the stated goals of the University of Regina and the efforts to enhance the teaching environment in Physics are consistent with the goals of the University and the Faculty.

Accomplishments

- The past year has been the fourth year in a row that there has been a focus on upgrading the undergraduate labs. The physical renovations were completed this year in the three laboratories.
- The upgrade of experimental equipment for the 200- and 300-level laboratories, and repairs and purchases of new lab equipment have been ongoing for a number of years now. The purchase of all of the planned equipment (to the total of \$52,000) will be completed in 2004.
- The renovations/improvements/upgrades of the last four years have enough history behind them for us to evaluate their pedagogical value and cost effectiveness. The physical renovations have had two visible effects. Firstly, the bench space and physical arrangement reflects a physics rather than a chemistry configuration allowing for a much more effective use of physical space and use of equipment by students. This is a directly measurable effect. What is not directly quantifiable is the overall impression that the lab spaces leave. Students see a modern department in a successful university, rather than the leaky and rusty faucets, and sinks of old labs. Secondly, whereas before the fluid mechanics and thermodynamics labs were set up and dismantled each time because of inefficient use of space, now lab space is shared and the same group of students move from one lab set to another. This allows us to schedule both courses in the same semester improving instructional quality and making more cost effective use of limited human and financial resources. Overall, the funds spent on the undergraduate labs have had a very positive effect on practical aspects, and faculty and student morale.
- The third year labs have also been modernized with new experimental equipment and the experience so far has been positive overall. Some experiments have not lived up to expectations and these will have to have further improvements.

- Dr. Randy Lewis was awarded a Canada Research Chair in Computational Physics (Tier II). In conjunction with that position Dr. Lewis was successful in receiving substantial funding (~\$0.5M) from the Canada Foundation for Innovation fund and supporting partners.
- The Department supported 8 Postdoctoral Fellows and was host to 3 Visiting Scholars. Faculty members supervised 4 Honours students to completion, 5 Masters students (1 completed) and 3 PhD students.
- Collectively 10 faculty members of a total of 10 in the Department of Physics held 8 NSERC Discovery Grants, and 2 other grants and contracts totaling about \$900,000.

Initiatives

- The Department is a member of the Association of Canadian Universities for Research in Astronomy (ACURA) and is currently recruiting a position in Astrophysics to support a program in Astronomy and Astrophysics at the University of Regina. Applications have been received and a shortlist of candidates, followed by interviews will begin. The position will be filled July 1, 2004.

2.2 Human Resources

DEAN'S OFFICE

Dean:	Dr. Katherine Bergman
Assistant Dean (Research):	Dr. Scott Wilson
Assistant Dean (Undergraduate):	Dr. David Chandler
Faculty Administrator:	Audrey Perra
Coordinator, Science Operations:	Gerry Brook
Academic Program Advisor:	Raeanne Thompson
Dean's Office:	Marlene Miller
	Ev Pow
	Sarah Savage
General Office:	Sandy Barker
	Sorcha O'Rorke (term)
Environmental Quality Analysis Laboratory (EQAL):	Dr. Richard Hughes
Laboratory for Computational Discovery (LCD):	John Jorgensen
Science Stores:	Joe Zieger
Machine Shop:	Dan Kolybaba
Electronics Shop:	Keith Wolbaum

Department of Biology

Head:	Dr. William Chapco
Graduate Student Coordinator:	Dr. William Chapco
Department Office:	Jill Medby
	Marg Friebel
Faculty:	Dr. Neil Ashton
	Dr. Keith Denford (retired)
	Dr. Richard Manzon
	Dr. Harold Weger
	Dr. Scott Wilson
	Dr. Mark Brigham (sabbatical)
	Dr. Peter Leavitt
	Dr. Mel Weisbart
	Dr. Christopher Yost
PDFs/Research Associates:	Dr. Suzanne McGowan
	Dr. Alain Patoine
	Dr. Chunhong Tian
Lab Instructors:	Heather Stanley
Technicians:	Joanne Downing
	Terry Ross
	Jamey Kalanack
	Gweneth Jones

Department of Chemistry and Biochemistry

Head:	Dr. Andrew Wee
Graduate Student Coordinator:	Dr. Allan East
Co-op Coordinator:	Dr. Lynn Mihichuk
Department Office:	Teri Dibble
	Marg Friebel

Faculty:	Dr. Renata Bailey Dr. Tanya Dahms Dr. Rod Kelln Dr. Lynn Mihichuk Dr. Marek Nelke (term)	Dr. David Chandler Dr. Allan East Dr. Brian Kybett (retired) Dr. Scott Murphy Dr. Dae-Yeon Suh
PDFs/Research Associates:	Dr. Gaojun Fan	Dr. Sun Young Kim Dr. Zhongyi Wang
Lab Instructors: Technician:	Donna Draper Christine Dehm	Danny Ng Henry Yee Mark Tymchak (term)

Department of Computer Science

Head:		Dr. Brien Maguire
Graduate Student Coordinator:		Dr. Cory Butz
Undergraduate Coordinator:		Dr. Lisa Fan
Co-op Coordinator:		Dr. Lisa Fan
Program Coordinator:		Lois Adams
Department Office:	Donalda Kozlowski	Janice Savoie
Faculty:	Dr. David Barnard Dr. Christine Chan Mr. Philip Fong Dr. Howard Hamilton Dr. Robert Hilderman Dr. Samira Sadaoui-Mouhoub Dr. Dominik Slezak Dr. Michael Wong (retired) Dr. Xue Dong Yang (sabbatical) Dr. Yiyu Yao Dr. Wojciech Ziarko	Dr. Cory Butz Dr. Lisa Fan Dr. David Gerhard Dr. Daryl Hepting Dr. Malek Mouhoub Dr. Larry Saxton Dr. Larry Symes Dr. Boting Yang Dr. JingTao Yao Dr. Chang Zhang
Lab Instructors: Catherine Song	Pauline van Havere (sabbatical)	Guili Liu Nova Scheidt
Technical Services: Systems Support:	Florin Palanciuc Robert Cowles	Pat Wagner Sarah (Peng) Yao

Department of Geology

Head:		Dr. Janis Dale (as of July 1, 2003)
Graduate Student Coordinator:		Dr. Brian Watters
Department Office:		Bobbie Ruda
Faculty:	Dr. Stephen Bend Dr. Kathryn Bethune Dr. Ian Coulson Dr. Katherine Bergman	Dr. Guoxiang Chi Dr. Hairuo Qing Dr. Brian Watters
PDFs/Research Associates:	Dr. Chao Yang	Dr. Hasan Ferdoug Dr. Daizhao Chen
Lab Instructors: Technician:	Syed Abbas-Hasanie Mets Ritsema	Evanna Simpson

Department of Mathematics and Statistics

Head: Dr. Bruce Gilligan
Graduate Student Coordinator: Dr. Chun-Hua Guo
Coordinator of Undergraduate Programs: Mr. Patrick Maidorn
Co-op Coordinator: Dr. Maria Torres
Department Office: Karen Howden Nadine Griffiths

Faculty: Dr. Aminmohamed Adatia Dr. Martin Argerami
Dr. Francesco Barioli (term) Dr. Dianliang Deng
Mr. Peter Douglas (term) Dr. Julianna Erlijman (leave)
Dr. Shaun Fallat Dr. Doug Farenick (sabbatical)
Dr. Chris Fisher (sabbatical) Dr. Jonathon Funk (term)
Dr. Chun-Hua Guo Dr. Denis Hanson (sabbatical)
Dr. Kathy Heinrich Dr. Allen Herman (sabbatical)
Dr. Stephen Kirkland (sabbatical) Mr. Glenn Larson
Mr. Patrick Maidorn Dr. Richard McIntosh
Mr. Larry Miller Dr. Alexander Nenashev (term)
Dr. Dieter Ruoff (retired) Mr. Alireza Simchi (term)
Dr. Donald Stanley Dr. Fernando Szechtman
Dr. Jim Tomkins Dr. Maria Torres
Dr. Andrei Volodin Dr. Harley Weston

PDFs/Research Associates: Dr. Xiangwen Li Dr. Jonathan Scott

Lab Instructor: Sarah Carnochan Naqvi

Department of Physics

Head: Dr. George Lolos
Graduate Student Coordinator: Dr. Bhaskar Dutta
Co-op Coordinator: Dr. Randy Lewis
Department Office: Carol Allen

Faculty: Mr. Gabriel Bonnell (term) Dr. Edward Brash (sabbatical)
Dr. Gary Diver (term) Dr. Bhaskar Dutta
Dr. Garth Huber Dr. Randy Lewis
Dr. Edward Mathie Dr. Nader Mobed
Dr. Zisis Papandreou

Research Scientist: Dr. Roman Tacik

PDFs/Research Associates: Dr. Abdou Abdel-Rehim Dr. Frederic Bonnet Dr. Yukihiro Mimura
Dr. Vitaly Kovaltchouk

Lab Instructors: Peter Bergbusch Gerry Zimmer

Adjunct, Associate and Professor Emeritus:

The Faculty recognizes the contributions made by emeritus professors, as well as the contribution of adjunct and associate members to the Departments. These are listed in Appendix 1: Professor Emeriti and Appendix 2: Associate and Adjunct Professors.

Sessional Appointments:

Many staff and faculty are employed in the faculty on a sessional lecturer basis. The Faculty recognizes the contributions made by sessional lecturers to the programs offered by the Faculty of Science. These appointments are listed in Appendix 3.

2.3 Faculty Committees

Dean's Executive Committee

Biology	Dr. William Chapco
Chemistry and Biochemistry	Dr. Andrew Wee
Computer Science	Dr. Brien Maguire
Geology	Dr. Janis Dale
Mathematics and Statistics	Dr. Bruce Gilligan
Physics	Dr. George Lolos
Assistant Dean (Undergraduate)	Dr. David Chandler
Assistant Dean (Research)	Dr. Scott Wilson
Dean	Dr. Katherine Bergman
Faculty Administrator	Ms. Audrey Perra
Coordinator, Science Operations	Mr. Gerry Brook

Admissions and Studies Committee

(Chair – Dr. David Chandler, Assistant Dean Undergraduate)

Computer Science	Dr. Howard Hamilton	(2004)
Chemistry and Biochemistry	Dr. Allan East	(2005)
Mathematics and Statistics	Dr. Shaun Fallat	(2005)
Biology	Dr. Harold Weger	(2006)
Dean Ex-Officio	Dr. Katherine Bergman	

Curriculum Committee

(Chair – Dr. David Chandler, Assistant Dean Undergraduate)

Biology	Dr. Neil Ashton
Chemistry and Biochemistry	Dr. Tanya Dahms
Computer Science	Dr. Howard Hamilton
Geology	Dr. Brian Watters
Mathematics and Statistics	Dr. Allen Herman
Physics	Dr. Edward Mathie
Dean Ex-Officio	Dr. Katherine Bergman

Dean's Public Relations Committee

(Chair – Dr. Katherine Bergman, Dean)

Biology	Dr. Mark Brigham
Chemistry and Biochemistry	Mr. Henry Yee
Computer Science	Dr. Wojciech Ziarko
Geology	Dr. Ian Coulson
Mathematics and Statistics	Mr. Patrick Maidorn
Physics	Dr. Edward Mathie
Assistant Dean (Undergraduate)	Dr. David Chandler
Assistant Dean (Research)	Dr. Scott Wilson
Faculty Administrator	Ms. Audrey Perra
Coordinator, Science Operations	Mr. Gerry Brook

Library Committee

Biology	Dr. Mel Weisbart
Chemistry and Biochemistry	Dr. Tanya Dahms
Computer Science	Dr. Yang Xiang
Geology	Dr. Hairuo Qing
Mathematics and Statistics	Dr. Chris Fisher
Physics	Dr. Nader Mobed
Dean <i>Ex-Officio</i>	Dr. Katherine Bergman

Nominating Committee

Mathematics and Statistics	Dr. Denis Hanson	(2005)
Chemistry and Biochemistry	Dr. Tanya Dahms	(2006)
Computer Science	Dr. Cory Butz	(2006)

Safety Committee

Geology	Dr. Janis Dale
	Mr. Mets Ritsema
Biology	Dr. Harold Weger
Mathematics and Statistics	Dr. Larry Miller
Chemistry and Biochemistry	Dr. Ron Treble
Computer Science	Dr. Brien Maguire
Physics	Dr. Gary Diver
Science Stores	Mr. Joe Zieger
Science Technician	Mrs. Chris Dehm
Faculty Administrator	Ms. Audrey Perra
Coordinator, Science Operations	Mr. Gerry Brook
Safety Officer	Ms. Holly Hastie

Scholarship Committee

(Chair – Dr. David Chandler, Assistant Dean Undergraduate)		
Biology	Dr. Peter Leavitt	(2004)
Physics	Dr. Zisis Papandreou	(2005)
Mathematics and Statistics	Mr. Larry Miller	(2006)
Dean <i>Ex-Officio</i>	Dr. Katherine Bergman	

Student Appeals Committee

Mathematics and Statistics	Dr. Allen Herman	(2004)
Computer Science	Dr. Larry Saxton	(2004)
Physics	Dr. Randy Lewis	(2004)
Biology	Dr. Richard Manzon	(2005)
Geology	Dr. Stephen Bend	(2006)
Chemistry and Biochemistry	Dr. Lynn Mihichuk	(2006)
Dean <i>Ex-Officio</i>	Dr. Katherine Bergman	

Faculty Representatives to Other Faculties

Faculty of Administration	Mr. Larry Miller	
Faculty of Arts	Dr. JingTao Yao	Dr. Marek Nelke
Faculty of Education	Dr. Harley Weston	Dr. Renata Bailey
Faculty of Engineering	Dr. Boting Yang	Dr. Nader Mobed
Faculty of Fine Arts	Dr. Daryl Hepting	
Faculty of Kinesiology and Health Studies	Dr. Stephen Bend	
Faculty of Social Work	Dr. Scott Murphy	
Centre for Continuing Education	Dr. Ian Coulson	

2.4 Fundraising

Scholarships are awarded annually in the Faculty. 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 to increase the number and value of the scholarships available to students in the Faculty of Science, to develop a Visiting Scholars Program and to support the outreach activities of the Faculty. This will provide increased leverage to recruit and retain high quality faculty members and to attract top quality students into our programs at the both the undergraduate and graduate levels.

PART 3: NEW FACES IN THE FACULTY

3.1 Canada Research Chairs

Tier I



Dr. Peter Leavitt (Professor) received a Tier I Canada Research Chair in the area of Environmental Change and Society in May 2003. This award recognizes Leavitt's research on the impacts of climate change in western Canada, a program previously funded by the NSERC Strategic Grants Program and the Agri-Food Innovation Fund. As part of the CRC appointment, Peter will combine his climate studies with analysis of land-use change and urbanization to develop better strategies for environmental risk management on the Prairies. Projects funded by this chair include measurement of drought risks in the coming 30 years, quantification of water pollution in Saskatchewan and their possible health impacts, and studies of fisheries sustainability in western North America. Peter will also continue as Professor of Biology, Director of the Environmental Quality Analysis Laboratory, Associate Editor of Ecology and President of the Society of Canadian Limnologists.

Tier II

Dr. Randy Lewis (Associate Professor) received a Tier II Canada Research Chair in Computational Physics in October 2003. This award recognizes his research on quantum theory of quarks, gluons and the strong force using large-scale computer simulations, called "lattice QCD", and related theoretical methods. This research is part of an international effort to create a precise understanding of the strong force and its role at the foundation of nuclear and particle physics. Funded in part by CFI, the University of Regina will be hosting a dedicated computing facility for lattice QCD research, with participation from theoretical physicists at Simon Fraser University, York University and the TRIUMF Laboratory.



3.2 Faculty Members

Biology Department



Andrew Felskie is a Lecturer and was appointed for a one-year term. He is a graduate student in the Department of Biology and is involved in exploring steroid hormones and their influence on the fetus near the time of birth.

Dr. Christopher Yost is an Assistant Professor. His research interests are in bacterial genetics and food microbiology. Currently, his research program focuses on using genetic approaches to further characterize the symbiosis between rhizobia and legumes. This symbiotic relationship contributes globally to the majority of biologically fixed nitrogen in soils. A better understanding of the symbiosis has implications to applied and fundamental areas of biology. Dr. Yost's other research program uses molecular methods to characterize the development of lactic acid bacterial communities in a variety of food systems. This research has practical implications in controlling the growth of both food spoilage microbes and food-borne pathogens.



Department of Chemistry & Biochemistry



Dr. Brian Sterenberg is an Assistant Professor. His research interests include the interaction of main group chemistry with transition metal chemistry. Although applications of organometallic chemistry to organic synthesis are well developed, similar applications of transition metal chemistry to main group synthesis are just beginning to emerge. The current focus is on transition metal/phosphorus chemistry, which has potential applications in the synthesis of ligands for catalysis.

Department of Computer Science

Philip Fong is a Lecturer. His research area spans an intersection of software engineering and computer security that has been dubbed *Trusted Software Engineering*. He is specifically interested in the design and implementation of software-based protection mechanisms for mobile code systems, especially by applying software engineering technologies such as static analysis, program verification and aspect-oriented programming.



Dr. David Gerhard is an Assistant Professor. His research program focuses on Computational Acoustics. His varied background in Engineering, Computer Technology, Mathematics, Communication, Music, Linguistics, and Philosophy provides him with a broad perspective on issues of science and technology, while maintaining a deep knowledge of his chosen research field. He is interested in computer understanding of human vocal interaction, as well as computer interactions in music. His research falls into the areas of multimedia, human-computer interaction, information retrieval, artificial intelligence and natural language processing.

Dr. Dominik Slezak is an Assistant Professor. His main scientific interests are the theory of rough sets, Bayesian networks and optimization problems. His current research focuses on extracting approximate knowledge models from data. He is interested in combining the rough sets with Bayesian reasoning and Bayesian networks. Dr. Slezak cooperates with researchers and graduate students, in Poland and the UK, on the foundations of the theory of rough sets and biomedical applications.



Dr. Francesco Barioli is an Assistant Professor and was appointed for a one-year term. His research interest is in Matrix Theory. In particular his research deals with several classes of matrices, such as positive semidefinite matrices, nonnegative and doubly nonnegative matrices, and completely positive matrices. He is also involved in the study of the inverse eigen value problem and the minimal rank problem for symmetric matrices under qualitative constraints.



Dr. Donald Stanley is an Associate Professor. His research interests are in topology and geometry. At present he is focusing on applying methods from homotopy theory to study constructions on manifolds. Among other things, this approach has given new information about blowups that arise in algebraic and symplectic geometry and about configuration spaces.

Dr. Fernando Szechtman is an Assistant Professor. His research interests are in group representation theory, linear algebra and group theory. He has focused attention on the Weil representation of symplectic and unitary groups over finite fields and finite local rings, and on the modular reduction of the Steinberg representation of the symplectic group. Some linear algebra topics investigated by him include sesquilinear forms over fields, division rings, semisimple artinian rings and polynomial ring; isometry groups of sesquilinear spaces, and, congruence action of various linear groups over matrices. In group theory he has devoted consideration to automorphism groups.



3.3 *Laboratory Instructor*

Department of Computer Science



November Scheidt, completed her Bachelor's and Master's degrees at the University of Regina and was hired as a Lab Instructor I. She has worked for one of China's foremost software development firms, CVIC Software Engineering Co. Ltd. In addition to this international work experience, she has also studied yoga in India where she received a One Year Yoga Teacher's Diploma. She brings considerable experience as an instructor and software practitioner.

3.4 Faculty Laboratories

Laboratory for Computational Discovery (LCD)

John Jorgensen was hired as system administrator for the Laboratory of Computational Discovery in August 2003. John completed his BSc (Honours) in 1988 at Queen's University majoring in Computing and Information Science. Subsequently, he held positions in system administration at Queen's University in Kingston and completed an MSc at McGill University School of Computer Science. This experience was a good match for the position available in Science and allowed the Regina boy to return to the fold after a long sojourn in central Canada.



Environmental Quality Analysis Laboratory (EQAL)



Dr. Richard Hughes comes to the University of Regina from Trent University, Peterborough, Ontario where he was primarily involved in research, teaching and analytical work involving mass spectrometry. With some 20 years experience, Richard has the position of Technical Manager and Associate Director of the Environmental Quality Analysis Laboratory (EQAL) housed in the Department of Biology. Primary responsibilities include scheduling and running analyses, and developing methods for stable Isotope Ratio Mass Spectrometry (IRMS).

3.5 Faculty Administrative Staff

Dean's Office

Sarah Savage transferred to the Faculty of Science in November to take up the duties of the Clerk Steno II position to provide clerical support to the research activities of the faculty. Sarah is a U of R alumnus (BA 2002) and throughout her university days held term and summer positions in the Faculty of Social Work. Following graduation, Sarah worked in the University Library as a Library Assistant. Though her time in Science has been brief Sarah has already had several opportunities to draw on her past university experience to tackle some of the challenges facing Science.



Sorcha O'Rorke joined the Faculty of Science in April as a term Clerk Steno II in the Science General Office. She graduated from Memorial University of Newfoundland with a BSc in Psychology in May 2001 and began travelling across the country shortly thereafter. En route to the University of Regina she held positions in other post secondary institutions including: Memorial University of Newfoundland, the University of New Brunswick and the University of Calgary. Sorcha presently makes her home in Moose Jaw with her boyfriend, Shannon, and her dog, Jessie. She is also an avid knitter.

Department of Computer Science



Janice Savoie transferred to the Department of Computer Science to fill the Clerk Steno II position in July. She brought a wealth of U of R knowledge with her as she has worked here since 1998 and held positions in the Bookstore, Financial Services and most recently with the English as a Second Language Program. Janice is a U of R alumnus, BA (Hons) 1996. Janice's congenial and positive attitude combine to make her a valuable and respected addition to the support staff.

Program Coordinator

Lois Adams was appointed Program Coordinator in August and assigned to the Department of Computer Science. Lois is a Faculty of Administration graduate (2001) from the University of Regina. Since graduating she has held positions in the University Bookstore, and Faculty of Graduate Studies and Research. This related experience from past placements in the University will assist Lois in her new position.



Department of Geology



Dr. Janis Dale is an Associate Professor and was appointed to a three-year term as Head of the Department of Geology. She is an accredited Professional Geoscientist with the Association of Professional Engineers and Geoscientists in Environmental Geoscience. Her research interests encompass, geomorphology, Quaternary and glacial environments, and soil science. She specializes in studies of Arctic and Quaternary environments, including modern and quaternary ecosystems, and associated marine benthic invertebrates. Her current studies include the record of deglaciation and environmental change, as recorded by glacial and glaciomarine deposits, and aeolian landforms.

PART 4: UNDERGRADUATE PROGRAMS

4.1 Enrollment Trends

There was a very slight decrease in both the numbers of credit hours and the number of students registered in Science during 2003 as Tables 4.1 and 4.2 indicate. The 2003-30 semester saw a 4% decrease over the same semester a year ago. About 47% of all students in Science are registered in the three Federated Colleges.

TABLE 4.1 REGISTRATION CREDIT HOURS:

	2003-10 (2002-10)	2003-20 (2002-20)	2003-30 (2002-30)
University	7471 (6775)	1292 (1362)	8062 (8052)
Campion	3829 (3973)	433 (328)	3963 (4499)
Luther	2920 (2855)	249 (301)	3096 (3133)
First Nations University of Canada	210 (192)	18 (24)	123 (240)
Semester Total	14420 (13794)	1992 (2015)	15244 (15924)
Yearly Total	31656 (31733)		

TABLE 4.2 REGISTERED STUDENTS:

	2003-10 (2002-10)	2003-20 (2002-20)	2003-30 (2002-30)
University	676 (613)	248 (226)	703 (707)
Campion	334 (360)	88 (88)	334 (379)
Luther	253 (246)	61 (69)	260 (263)
First Nations University of Canada	18 (18)	4 (6)	11 (23)
Semester Total	1281 (1237)	401 (389)	1308 (1372)
Yearly Total	2990 (2998)		

Of the students registered in degree programs (Table 4.3) only 6.6% are in an Honour's program. A large number of students (36%) are declared pre-professional students or are undecided in their degree aspirations. 314 students have declared Computer Science as their major (Table 4.4), down about 20 percent compared to the same semester last year. The number of Actuarial Science majors has increased by 80% over the past year.

TABLE 4.3 STUDENTS REGISTERED BY DEGREE OR CERTIFICATE:

	2003-10	2003-30	Average
BMI	0	1	1
BSc	844	849	847
BSc (Hon)	66	53	60
Certificate in CS	13	5	9
Undeclared/Other	358	399	377
Total	1281	1307	1294

TABLE 4.4 MAJORS IN 2003-30

Major	Number	(Co-op Program)
Undeclared/Undecided	170	
Actuarial Science	64	
Biology/Biochemistry	2	
Biology/Geography	4	
Biochemistry/Chemistry	1	
Biology/Statistics	1	
Biochemistry	50	
Biology	136	
Chemical Technology	0	
Chemistry	55	(10)
Computer Science	314	(80)
Computer Science/Mathematics	9	
Environmental Biology	11	
Geography	44	
Geology	36	
Mathematics	40	(2)
Mathematics/Statistics	2	
Physics	23	(5)
Statistics	8	(1)
Pre-Professional	332	
Certificate in Computer Science	5	

In 2003, 188 Bachelors degrees were awarded, up 12.6% from the previous year (Table 4.5). The number of certificates was also higher. Slightly more than 44% of the degrees were in Computer Science, 11.5, 10.4, 8.7 and 8.5% in Chemistry, Biology, Biochemistry and Geology respectively, with another 3 to 7% each in Geography, Physics, Mathematics and Statistics (Table 4.6).

TABLE 4.5 DEGREES AND CERTIFICATES AWARDED IN 2003:

	Spring (2002)	Fall (2002)	Total (2002)
BSc	147 (129)	17 (20)	164 (149)
BSc (Hon)	21 (16)	3 (2)	24 (18)
Certificate in CS	16 (13)	8 (6)	24 (19)
Certificate in IHS	1 (0)	0 (0)	1 (0)
Total Degrees	168 (145)	20 (22)	188 (167)
Total Certificates	17 (13)	8 (6)	25 (19)

Of the 188 BSc degrees awarded, 33 were in the Co-operative Education Program.

TABLE 4.6 DEGREES AND CERTIFICATES AWARDED BY AREA IN 2003:

	Spring	Fall	Total
Biology	16	2	18
Biochemistry	15	1	16
Chemical Technology	1	0	1
Chemistry	18	2	20
Computer Science	70	11	81
Computer Science/Mathematics	1	0	1
Environmental Biology	1	0	1
Geography	11	2	13
Geology	16	0	16
Mathematics	5	0	5
Mathematics/Statistics	2	0	2
Physics	7	1	8
Statistics	4	1	5
Statistics/Economics	1	0	1
Certificate in CS	16	8	24
Certificate in IHS	1	0	1

As Table 4.7 shows, the number of credit hours taught by areas in Science is up slightly in 2003. Although the Federated Colleges have about 47 percent of all students registered in Science, they teach only 11 percent of the Science course credit hours.

TABLE 4.7 CREDIT HOURS TAUGHT BY ACADEMIC AREAS:

	2003-10 (2002-10)	2003-20 (2002-20)	2003-30 (2002-30)
Biology	1626 (1487)	69 (117)	2107 (2115)
Biochemistry/Chemistry	2484 (2261)	23 (27)	2581 (2421)
Computer Science	3945 (4218)	743 (794)	4767 (5501)
Geology	1362 (1386)	307 (253)	1255 (1400)
Mathematics/Statistics	6514 (6562)	1542 (1335)	7511 (7905)
Physics	903 (927)	192 (165)	960 (1441)
Science	3 (0)		
First Nations University of Canada	951 (975)	279 (285)	831 (1053)
Luther	945 (672)	51 (0)	1136 (1140)
Campion	384 (336)	0 (0)	267 (330)
Total	19117 (18824)	3206 (2976)	23306 (23306)

4.2 Student Recruitment Strategies

The Faculty of Science is actively involved in school (elementary and secondary) and community organization programs. The Faculty sponsors various functions including science fairs and career fairs. A number of our faculty members visit classrooms or host classes on campus. The interaction with students early in their careers makes us visible to them and provides them with contact people at the University to discuss their options. The Faculty will continue to develop a fundraising program to increase the number and value of our scholarships as a means of recruiting top students at the undergraduate and graduate level.

4.2.1 New Scholarships/Bursaries in 2003

There were three new Science scholarships this year: the Saskatchewan Government Insurance Scholarships for Actuarial Science, the Saskatchewan Workers' Compensation Board Scholarship for Actuarial Science, and the Co-operators Insurance Scholarships for Actuarial Science.

4.3 Co-operative Education Program

The Faculty offers programs in co-operative university education in Biochemistry, Chemistry, Computer Science, Mathematics, Physics and Statistics. Students spend alternate four-month periods taking university courses and working in related, salaried jobs. There were 96 students registered in the co-operative education program this year.

4.4 Departmental Programs

The following undergraduate programs are available some of which were available for the first time or were approved for offering in 2003:

- 4.4.1 Actuarial Science BSc;
- 4.4.2 Biology BSc and BSc (Hons);
- 4.4.3 Biology/Biochemistry BSc;
- 4.4.4 Biology/Geography BSc;
- 4.4.5 Biology/Statistics BSc;
- 4.4.6 Environmental Biology (with SIAST Woodlands Campus) BSc and BSc (Hons);
- 4.4.7 Biochemistry BSc and BSc (Hons);
- 4.4.8 Biochemistry/Chemistry BSc;
- 4.4.9 Chemistry BSc and BSc (Hons);
- 4.4.10 Chemistry/Education Combined BEd/BSc;
- 4.4.11 Chemical Technology (with SIAST Kelsey Campus) BSc;
- 4.4.12 Computer Science Certificate, BSc and BSc (Hons);
- 4.4.13 Computer Science Software Systems Development, BSc;
- 4.4.14 Computer Science/Mathematics BSc and BSc (Hons);
- 4.4.15 Geography BSc and BSc (Hons);
- 4.4.16 Geology BSc and BSc (Hons);
- 4.4.17 Indian Health Studies Certificate;
- 4.4.18 Mathematics BSc and BSc (Hons);
- 4.4.19 Mathematics/Education Combined BEd/BSc;
- 4.4.20 Mathematics/Computer Science BSc and BSc (Hons);
- 4.4.21 Mathematics/Statistics BSc;
- 4.4.22 Medical Imaging Degree Program (with SIAST Kelsey Campus);
- 4.4.23 Physics BSc and BSc (Hons);
- 4.4.24 Physics/Education Combined BEd/BSc;
- 4.4.25 Applied Industrial Physics with Emphasis in Computation and Physical Modeling BSc;
- 4.4.26 Applied Industrial Physics with Emphasis in Electronics and Modern Physics BSc;
- 4.4.27 Statistics BSc;
- 4.4.28 Statistics/Economics BSc

There are also Minors available in all Departments.

4.5 Undergraduate Societies

The 2003-2004 academic year kicked off with the Faculty of Science hosting its first Student Social in October. The event was a huge success and we were very pleased to have all of the student societies participate throughout the planning process, and by setting up displays and assisting with registration at the event in the Multi-Purpose Room on campus. Since that time the student societies have taken on a number of initiatives representing their respective groups.

Biology Undergraduate and Graduate Society

The Biology Undergraduate & Graduate Society (BUGS) has been very active over the past academic year. In January they hosted a Biology Career Banquet where, despite a terrible winter storm, 75 students plus representatives from 10 companies and organizations were in attendance. BUGS coordinated a Microsoft Excel workshop to assist students with their lab reports. In addition to this student support service, their group also provided funding assistance to seven biology students who attended the Prairie Universities Biology Symposium, a conference organized by students for students. To raise funds to support the ongoing activities of the group, BUGS sold t-shirts and hoodies to the student body.

The Society has been involved with the Science Societies joint barbeques, hosted wall climbing events, a bowling night, a Christmas potluck supper, organized an IMAX/Science Centre event, and are looking forward to their year end event that is just entering the planning phases.

Chemistry and Biochemistry Students Association

The Biochemistry and Chemistry Students Society (BCSA) had two major academic events in 2003. In late January the Society sponsored guest speaker, Dr. Joe Schwarcz, renowned figure for public education in chemistry and director of McGill University's Office for Chemistry and Society.

In May the BCSA was proud to host the 17th annual Western Canadian Undergraduate Chemistry Conference with financial assistance from the Office of the Vice President (Academic) Conference Fund, the Faculty of Science and the Department of Chemistry and Biochemistry. This yearly event allows undergraduate students in all fields of chemistry to present their summer or honours research in a conference setting. The conference was a huge success with over seventy in attendance from western Canada. Dr. David Cramb of the University of Calgary, Dr. Feiyue Wang of the University of Manitoba, Dr. Scott Murphy of the University of Regina and Dr. Soledade Pedras of the University of Saskatchewan acted as keynote speakers and judges for the oral presentation. The top few presentations and posters were rewarded with cash prizes. All participants were very pleased with the conference which also reflected well on the University.

There were several social activities that the BCSA planned throughout 2003. These are designed to increase the interactions of mainly undergraduates with the society and the department. Semesterly pool tournaments were planned in both February and November. An annual Saint Patrick's Day Wallyball tournament was held in March. A cabaret was held in October.

Additional services that the BCSA provided include coordination of tutors for chemistry classes and access to the club room's library.

Computer Science Students Society

The Computer Science Students Society (CSSS) has been very active throughout the 2003-2004 academic year. They have been involved in a number of academic related activities including, hosting a Linux installation seminar for students interested in learning the basics of a Linux installation, assisted the CS UNIX system administrator, Robert Cowles, setting up the Microsoft Academic Alliance, which provides free Microsoft software to CS students online and on CDs directly from Microsoft, and brought in various industry representatives to present seminars, most notably, Mike Flasco and Anthony Vranic of Microsoft.

The CSSS has hosted three successful Beer N' Pizza nights, acquired an official bar: Johnny Fox's, where they hosted a "Pack Johnny Fox's Night", held a CS Rams football night where they rented a bus to the Rams "Pack the Stadium" game and followed the game with burgers at Johnny Fox's, and held a private party for CSSS members at the Wonderland Entertainment Center. In addition to many special events, the CSSS has entered teams into a number of the Campus Recreation leagues including, softball, outdoor and indoor soccer, and volleyball.

The CSSS is very pleased with the changes that have taken place within their group this year. The changes include a complete redesign of the CSSS website, chat server, user accounts and CSSS online forums. They have increased their membership from approximately 10 members to over 140 and are now looking for new lounge space as they have outgrown their current home. In addition to increasing their own membership, they have been educating students about other networking and professional development opportunities, and are pleased to have helped the Canadian Information Processing Society branch in Regina vastly increase their student memberships.

Geological Students Society

The GSS hosted the annual Western Interuniversity Geology Conference from January 9th –12th, 2003. Some 240 registrants attended with representatives from all of the western universities as well as government and industry representatives. The GSS has doubled their membership from 18 in Winter 2003 to 36 in Fall 2003 and are local chapters of the Geological Association of Canada and the American Association of Petroleum Geologists. The GSS has established a monthly newsletter called "The Royal Flush" as well as a GSS web page. The new website can be viewed at www.uregina.ca/geosoc. In an effort to bring more visibility to the Geology Department the society sold bunny hugs and t-shirts to interested students.

In January, nine students and one graduate student, attended the Western Inter-University Geology Conference (WIUGC) that was held in Vancouver, BC. Carrie Kreutzer, the graduate student who travelled with the group, also made a presentation at this conference. To help with the costs associated with travelling to this conference, the GSS raffled a 27" television and a 5 speaker surround sound system as the two prizes. The society organized a paintball event in September, and bowling, curling and hockey events. The big event of the year was the inaugural Geology vs. Geography softball game. The Geology students brought great respect to the department and bragging rights as they defeated the Geography students 12-3.

On the academic side, the Geology Department involved the students in the organizing committee that brought in various speakers to the Geology Department Seminar Series every Wednesday. Currently, there are plans for a field trip to the Canadian Shield in Ontario for the Fall 2004 semester.

The GSS has their annual year-end banquet on April 8, 2004 and invites a guest. Many scholarships and awards are given out at that event.

Physics Students Society

This year, the Physics Student Society (PSS) has come back to life after a few years of inactivity. With an inexperienced executive at the helm, this has been a learning experience for all of them. The PSS has been successful in achieving their goal of creating socialization between the various years of students. They have held some very successful events, including a pizza party, cribbage tournament and most recently, a bowling night. In the remainder of the Winter 2004 semester, they intend to hold a pool night and another pizza party. Also, by popular demand, the PSS has recently ordered (a lot of) T-shirts, so keep your eye out for the students proudly wearing them in the halls.

4.6 Undergraduate Scholarships

- 4.6.1** The University Prize in Science was awarded to James Franklin Ranson (High Honours in Computer Science as well as a Minor in Mathematics) at the Spring 2003 Convocation and to Camilo Ellis Rostoker (High Honours, Computer Science) at the Fall 2003 Convocation. Mr. Rostoker also received the President's Medal at the Fall 2003 Convocation.
- 4.6.2** The Faculty of Science 10th Anniversary Entrance Scholarship was awarded to Christopher Askew, Balfour Collegiate School, Regina.
- 4.6.3** The Coca-Cola Student Award was given to Mishayla Potts (Computer Science).
- 4.6.4** The Canadian Cancer Society Student Assistantship Grant was awarded to Kristen Louis (Chemistry).

4.7 Awards for Excellence in Undergraduate Teaching

Ms. Gwen Jones, Laboratory Instructor in Cell Biology and Genetics in the Department of Biology, received the Alumni Association Award for Excellence in Undergraduate Teaching at the 2003 Spring Convocation. Mr. Terry Ross, Laboratory Instructor in Physiology in the Department of Biology, received the University of Regina Inspiring Teacher Award.

4.8 Dean's Honour List (Campion*, Luther**, Saskatchewan Indian Federated College***)

Winter 2003

Anderson, Kenton *	Keller, Jordan	Schlotter, Jeffrey *
Beauchesne, Jennifer	Krislock, Abram	Schmiedge, Paul
Bedel, Kevin **	Krupski, Nicole **	Schnell, Jessica *
Bird, Jeffery	Legault, Kathie *	Schommer, Clark
Bodner, Michael	Lekivetz, Ryan *	Scissons, Julia
Bogdan, Vili	Lulashnyk, Ben *	Sebastian, Billie-Jo *
Brochu, Luc	Mahussier, Karla	Selzer, Jason *
Brochu, Tyson	Mamchur, Joel	Shirazi, Sahar
Brown, Michael	Mansuy, Trevor *	Sidhu, Naveenpaul *
Buchko, Jordan *	Marcotte, Jeanette *	Skolney, Devin
Carbno, Christine **	Martens, Jennifer **	Smith, Jennifer **
Carson, Scott *	Mazur, Daniel	Smith, Shannon
Christensen, Michael **	McKell, Nicole **	Stonechild, Rachel ***
Congly, David	McLellan, James **	Sum, Ricky *
Conley Erin	Mellor, Simon	Tam, Kevin *
Domm, Kathryn **	Metz, Lisa	Thue, David **
Dosselmann, Richard *	Milani, Dustin	Toth, Stephanie
Dreger, Jill	Miller, Nicole *	Ulmer, Sharla **
Dube, Nevin *	Mohamed, Ausama	Ulmer, Tiffany **
Fahlman, Amy	Montgomery, Laura *	Van Schie, Jacqueline
Fong, Andrea	Neuls, Evan **	Viergutz, Trevor
Freitag, Benjamin **	Ng, Michelle *	Webb, Thomas
Fuller, Amy	Peters, Kevin	Weimer, Blaine
Garand, Richard	Peterson, Verenna	Weir, Erin *
Gobeil, Paul	Peti, Nicholas *	Wenikowski, Joseph *
Gurnsey, Marie **	Peterson, Courtney	Widenmaier, Scott
Hall, Patricia **	Piche, Janelle *	Wilde, Brenda *
Harman, Chelsea **	Ranalli, Melissa *	Wilson, Jessi **
Harrington, Melody **	Resler, Laura **	Wist, Sarah *
Hepperle, Steven **	Roettger, David *	Yip, Sara *
Johns, Cherie **	Ruten, Shelby **	Zhen, Rongshi
		Zulyniak, Lori

DEAN'S HONOUR LIST (CAMPION*, LUTHER, SASKATCHEWAN INDIAN FEDERATED COLLEGE***)**

Summer 2003

Blythe, Shannon *
Hlady, Stephen *

Larson, Lana
Shen, Binyan

Wist, Sarah *

Fall 2003

Abdulla, Adam *
Askew, Christopher **
Baidoo, Kezia
Bedel, Kevin **
Berg, Marlin **
Bird, Jeffery
Block, Sarah
Bodani, Vivek
Bodnar, Michael
Booy Amanda
Buchko, Jordan *
Bullock Lindsey **
Carbno, Christine **
Carson Carrie
Congly, David
Dosselmann, Richard *
Dreger, Jill
During, Stacy **
Escanlar, Peter *
Fahlman, Amy
Filby, Rheanne *
Fleming, Shaun
Fong, Andrea
Friebel, Rachel
Fuller, Amy
Gilongos, Gerard
Gobeil, Paul
Harman, Chelsea **
Harrington, Melody **
Hepperle, Steven **
Huang, YuHui
Hung, Sonya
Ingram, Carolyn **

Jackson, Jessica
Johnson, Adelle **
Kivella, Tessa
Kiwanuka, Eva
Konkel, Ken **
Kort, Peter **
Kozan, Daniel *
Krislock, Abram
Kroon, Alexis *
Krupski, Nicole **
Lekivetz, Ryan *
Lien, Francis
Liu, Hui
Liu, Xing
Lu, Jieshan
Mahussier, Karla
Mamchur, Joel
Marcotte, Jeanette *
Milani, Dustin
Miller, Nicole *
Montgomery, Ian *
Neuls, Evan **
Nguyen, Rita *
Nicoll, Jamie *
Nie, Wenshuang
Noland, Jenny
Obrigewitsch, Matthew
O'Kranczy, Steven *
Oleskiw, Timothy *
Peti, Nicholas *
Pollard, Janette
Rizvi, Syed
Ramadan, Iman

Ray, Chelsea
Roettger, David *
Rudovics, Andrejs
Ruten, Shelby **
Schmiedge, Paul
Schmuecker, Johanan
Schnell, Jessica *
Schommer, Clark
Selzer, Jason *
Selzer, Erin *
Shantz, Karen **
Sidhu, Naveenpaul *
Sim, Bobbie
Sinclair, Caitlin *
Sluser, Sarah *
Smith, Tara **
Smith, Shari **
Stark, Laura **
Stonechild, Rachel ***
Talbot, Melissa **
Targett, Sean **
Thomas, John *
Thue, David **
Toogood, Ronald *
Truong, Wallace
Ulmer, Sharla **
Ulmer, Tiffany **
Van Eijk, Mark
Weins, Laura *
Widenmaier, Scott
Wilde, Brenda *
Zhang, Danhua
Zhen, Rongshi

PART 5: GRADUATE PROGRAM

Graduate education is an integral part of Faculty of Science activity. Graduate students obtain important advanced education in scientific research by working alongside professors in the laboratory, in the field and in the office. Much of the research undertaken by scientists could not be realized without the support of graduate students. To underscore the crucial role of graduate education in research, NSERC requires that each research program receiving NSERC funding be structured to provide for the education of highly qualified personnel.

Graduate students enjoy 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 composed of a mix of first-rate domestic and international students, which enhances the learning experiences for each graduate student and brings useful expertise to the province.

The Faculty of Science offers programs leading to the Master of Science (MSc) and Doctor of Philosophy (PhD) degrees. The MSc degree typically requires two years of study after the BSc, while the PhD normally takes three to six years to complete after the MSc.

5.1 Enrollment Trends

Recruitment of high quality graduate students is a challenge for the Faculty of Science. Many of the best undergraduate students in Science choose to do graduate work elsewhere and it is difficult to attract large numbers of high-quality graduate students from other regions of Canada. However, this is somewhat compensated for by the high international demand for our graduate programs. The presence of international students enhances the University and community at large, and enables the Faculty of Science to fulfill its mandate of research and graduate education (Table 5.1).

Table 5.1 Registration Statistics

	<i>Students Registered</i>		<i>Degrees Conferred</i>	
	2003	2002	2003	2002
MSc				
Biology	13	15	3	1
Chemistry & Biochemistry	14	10	3	1
Computer Science	63	53	6	3
Geology	19	16	2	1
Mathematics & Statistics	8	7	1	1
Physics	6	6	0	1
Total	123	107	15	8
PHD				
Biology	11	7	6	2
Chemistry & Biochemistry	3	5	0	1
Computer Science	19	16	1	0
Geology	5	2	0	0
Mathematics & Statistics	5	7	0	4
Physics	5	4	2	0
Total	48	41	9	7

5.2 Departmental Programs

A brief overview of the graduate programs in each department in the Faculty of Science is provided below.

Department of Biology

The Department of Biology offers graduate programs in areas of active research by faculty members: moss developmental regulation, insect evolutionary genetics, microbial toxin synthesis and gene expression, plant respiratory metabolism, fish endocrinology and osmoregulation, plant community ecology, terrestrial vertebrate ecology and limnology. The Department is well equipped with modern research laboratories, including plant and animal care facilities, a herbarium, a field station in the Cypress Hills of southwestern Saskatchewan, the CFI sponsored Environmental Quality Analysis Laboratory and long term ecological research plots in the Research Park. The research capabilities of the Department are enhanced through association with local, federal and provincial government facilities, and research connections with a number of other universities.

Department of Chemistry and Biochemistry

Graduate studies in the Chemistry and Biochemistry Department involves programs in selected areas of analytical chemistry, biochemistry, inorganic chemistry, organic chemistry, physical chemistry, computational chemistry and theoretical chemistry.

Department of Computer Science

The Department of Computer Science offers programs of study involving interdepartmental, multi-institutional and inter-institutional collaboration that has attracted faculty members and graduate students from all over the world. Students may pursue full-time or part-time graduate study leading toward the MSc and PhD degrees.

The MSc and PhD degrees in Computer Science focus on four main areas of research: artificial intelligence; databases and information retrieval, graphics and image processing, and software engineering. The department is currently conducting research in the areas of control algorithm acquisition, pattern recognition, knowledge representation, knowledge discovery in databases, temporal reasoning, constraint logic programming, machine learning, rough sets and applications, uncertainty management, distributed systems, parallel processing, neural networks, theory of computing, computational geometry, virtual reality and computer animation, interfaces, internet applications, structured text processing, data security, mobile code security, agent technology, formal specification, software engineering and agent technologies. The Department is well equipped with modern computing facilities including the CFI sponsored Laboratory for Computational Discovery and numerous SGI and Sun workstations. For parallel and graphics computing research, there is a 24-processor SGI Onyx2 graphics supercomputer.

Department of Geology

The Department of Geology offers graduate programs in fields that include: geochemical, igneous, metamorphic, Quaternary and structural studies of the Canadian Shield, Phanerozoic carbonate and clastic environments, and evaporite studies, as well as coal, petroleum, uranium and geothermal energy studies. Resources are available for particular western regional projects. Close co-operation with Saskatchewan Industry and Resources provides excellent opportunities for field-based studies in the Shield, and access to sedimentary cores and data relating to the Phanerozoic rocks of Saskatchewan. On campus, staff and students of the Department work in co-operation with the PTRC, PARC, CPRC and Communities of Tomorrow.

Department of Mathematics and Statistics

The Department of Mathematics and Statistics offers graduate programs in a wide variety of areas in pure and applied mathematics, and statistics. Recent graduate students have studied in the areas of statistics, matrix theory, discrete mathematics and operator algebras. Graduate students enjoy the guidance of several faculty experts and participate in field-specific seminars. The pure mathematical areas of algebra, number theory, topology and analysis are areas of strength in the Department.

Department of Physics

The Department of Physics offers graduate degrees in the areas of Experimental and Theoretical Subatomic Physics, and Astronomy. Faculty members and graduate students, pursue their research locally and at locations elsewhere in Canada, the United States, Europe and Japan. The Department is an associate member of the TRIUMF subatomic physics laboratory located at the University of British Columbia in Vancouver, B.C. and has a close relationship with the Jefferson Laboratory (formerly the Continuous Electron Beam Accelerator Facility) in Newport News, Virginia, U.S.A.

5.3 Graduate Scholarship and Support

Graduate education in Science is demanding and intensive, and normally continues through twelve months of the year. Full-time graduate students devote most of their time to their studies and research, making it difficult for these students to hold part-time jobs. The Faculty of Graduate Studies and Research offers scholarships and teaching assistantships to qualified graduate students. Additional support for graduate students is made available through the research grants of supervising professors, as well as through scholarships and grants from government and private-sector agencies.

The Faculty of Graduate Studies provides financial support (Table 5.2) for graduate students through scholarships and teaching assistantships to qualified students on the basis of academic achievement.

Table 5.2: Graduate Funding

	Summer 2003			Fall and Winter 2003-2004		
	Research Assistantship	SCHOLARSHIP	Value	Teaching Assistantship	Scholarship	Value
Biology	1	2	12,800	6	3	47,344
Chemistry & Biochemistry	1	1	8,300	3	2	25,895
Computer Science	3	3	25,400	13	6	108,761
Geology	1	1	8,800	3	1	25,895
Mathematics & Statistics	1	1	9,300	3	1	23,561
Physics	0	1	5,000	3	2	22,449
TOTAL	7	9	69,600	31	15	253,905

5.4 Graduate Student Awards

Neil Knecht convocated in May 2003 with a PhD in Physics. He was the recipient of two distinguished awards: the 2003 President's Distinguished Graduate Student Award for his exceptional thesis and corresponding defense, and the Governor General's Academic Gold Medal for achieving the highest overall academic standing in a graduate program.

5.5 National Scholarships and Fellowships

NSERC funds the top Canadian and landed-immigrant graduate students through the Postgraduate Scholarship (PGS) program. The duration of a scholarship is 2 years: the PGS A funds years 1 and 2 of a graduate education, and a PGS B scholarship is intended for years 3 and 4, or years 4 and 5. The values of these awards are \$17,300/year (PGS A) and \$19,100/year (PGS B).

Table 5.3 PGS A Recipients

Student's Name	Supervisor	Department
Akister, Bevin	Neil Ashton	Biology
Bailey, Kimberley	Kathryn Bethune	Geology
Christensen, Michael	Rolf Vinebrooke (U of Alberta)	Biology
Contreras, Daniel	William Chapco	Biology
Derkatch, Corwin	Daryl Hepting	Computer Science
Karst, Amanda	University of Victoria	Biology
Matz, Caryln	Harold Weger	Chemistry and Biochemistry
Rostoker, Camilo	University of Victoria	Computer Science

A PGS B was awarded to Stacy Singer (Biology) under the supervision of Dr. Neil Ashton.

NSERC Postdoctoral fellowships were awarded to Ray Poulin and Craig Willis from the Biology Department.

NSERC also provides summer scholarships (Table 5.4) to allow promising students to gain research experience working with faculty.

Table 5.4 NSERC Summer Scholarships

Student's Name	Supervisor	Department
Bonnet, Colin	Rod Kelln	Chemistry and Biochemistry
Contreras, Daniel	William Chapco	Chemistry and Biochemistry
Demyen, Douglas	Howard Hamilton	Computer Science
Hepperle, Steven	Allan East	Chemistry and Biochemistry
Hinks, Jeremy	Shaun Fallat	Computer Science/Mathematics
Lekivetz, Ryan	Shaun Fallat	Computer Science/Mathematics
Mansuy, Trevor	Robert Hilderman	Computer Science
McKague, Matthew	Daryl Hepting/Brien Maguire	Mathematics and Statistics
Neuls, Evan	Dae-Yeon Suh	Chemistry and Biochemistry
Peti, Nicholas	Andrew Wee	Chemistry and Biochemistry
Pfeifer, Laura	Peter Leavitt	Biology
Ranalli, Melissa	Rolf Vinebrooke	Biology
Roettger, David	Allan East	Chemistry and Biochemistry
Rostoker, Camilo	Howard Hamilton	Computer Science
Ryberg, Jennifer	Dae-Yeon Suh	Chemistry and Biochemistry
Sauer, Danielle	Howard Hamilton	Computer Science
Schellenberg, Dan	Shaun Fallat	Mathematics/Education
Schonhoffer, Thomas	Doug Farenick	Mathematics/Religious Studies
Selzer, Jason	Xue Dong Yang	Computer Science
Smulan, Ryan	Howard Hamilton	Computer Science
Thue, David	Howard Hamilton	Computer Science

5.6 NSERC Committees

It is important for the University of Regina to have representation at the national level on the committees that oversee the policies for and the selection of graduate scholarships and postdoctoral fellowships. Dr. Rod Kelln, Department of Chemistry and Biochemistry, sits on the Standing Committee on Scholarships and Fellowships. Dr. Doug Farenick, Department of Mathematics and Statistics, is Chair of the Scholarships and Post-doctoral Fellowships for Computational and Mathematical Science.

5.7 Centennial Student Employment Program (CSEP)

The Centennial Student Employment Program (CSEP) is a 5-year provincial initiative that began in 2001 in Saskatchewan by providing students with the opportunity to obtain summer employment related to their area of study.

TABLE 5.5 CSEP RECIPIENTS

STUDENT'S NAME	Supervisor	Department
Deschamps, Darren	Gerry Brook	Dean's Office
Geller, Kari	Janis Dale	Geology/Geography
Hubbard, Jamie	Harley Weston/Stephen Bend/Warren Wessel/Vi Maeers	Mathematics/Geology/Education

PART 6: RESEARCH

Research is a fundamental activity in the Faculty of Science. Through research, the Faculty, the University and the Province of Saskatchewan are significantly involved in the creation, acquisition and dissemination of scientific knowledge. It is through research and teaching that high-level expertise is maintained and developed in the province.

Research in the Faculty of Science is financially supported through grants from a variety of federal and provincial government agencies, as well as through grants from abroad and the private sector. The University of Regina is fortunate to have a solid complement of nationally and internationally recognized scientists who undertake a wide variety of research programs and attract significant amounts of external funding. The results of the research conducted by Faculty of Science scholars are disseminated in national and international journals, and are presented at conferences worldwide.

6.1 Departmental Research Activities

A brief overview of the research activities and expertise in each department in the Faculty of Science is presented.

Department of Biology

Research in the Department of Biology addresses a variety of fundamental interests that include: animal, aquatic and plant ecology, genetics, molecular and developmental biology, and microbiology. The field studies for a number of research projects are undertaken around the world. In addition, research by the Department of Biology is relevant to the environmental, health and economic concerns of Saskatchewan including freshwater research, climate change research, drought studies, research into ecosystem variability and plant ecology. The Department of Biology attracts and oversees a large complement of research assistants at levels varying from undergraduate students through to postdoctoral fellows.

The expertise of the Department is broadly described as follows:

Environmental biology:	M. Brigham, P. Leavitt, M. Weisbart, S. Wilson
Evolution and systematics:	N. Ashton, W. Chapco
Cellular and molecular biology:	N. Ashton, W. Chapco, R. Manzon, M. Weisbart, C. Yost
Physiology and behavior:	M. Brigham, R. Manzon, H. Weger, M. Weisbart

Dr. Rolf Vinebrooke resigned July 2003 and Dr. Keith Denford retired. The Department is presently recruiting to fill two positions; one in quantitative ecology and one in environmental microbiology.

Department of Chemistry and Biochemistry

Research interests of the Department of Chemistry and Biochemistry include analytical/environmental chemistry, asymmetric synthesis and methodology, biophysical biochemistry, photochemistry, theoretical and computational chemistry, chemical biology, inorganic chemistry, organometallic chemistry and catalysis, nucleic acid biochemistry, enzymology and protein chemistry.

The expertise of the Department is broadly grouped as follows:

Analytical chemistry:	R. Bailey
Biochemistry:	T. Dahms, R. Kelln, M. Nelke, D.-Y. Suh
Inorganic chemistry/Organometallic:	L. Mihichuk, B. Sterenberg
Physical (includes Physical Organic) and Theoretical/Computational chemistry:	W.D. Chandler, A. East, S. Murphy
Organic synthesis and methodology:	A.G.H. Wee

The Department is presently recruiting to fill two openings in biochemistry.

Department of Computer Science

Research in the Department of Computer Science is both discipline and applications based. The fields of research activity include: computing theory, theory and application of rough sets, information retrieval, graphics, computer visualization, machine learning, expert systems, human-computer interaction, databases and distance education. The CFI-funded Laboratory for Computational Discovery (LCD) provides the necessary infrastructure for discipline based and interdisciplinary research projects. The Rough Set Technology Laboratory (RSTL), formed this year, will be a focal point for growth in research activity in Rough Sets, Bayesian Networks, Data Mining and Web Intelligence, and already has over twenty international affiliated members and ten visiting scholars. The newly established New Media Studio Lab (NMSL) is a joint effort by the Department of Media Production and Studies in the Faculty of Fine Arts, the Department of Computer Science, and the Faculty of Engineering. It is funded by CFI and provides state-of-the-art facilities for interdisciplinary research in multimedia.

The expertise of the current faculty is broadly described as follows:

Artificial intelligence:	C. Butz, D. Gerhard, H. Hamilton, M. Mouhoub, D. Slezak, J.T. Yao, Y. Yao, W. Ziarko
Parallel processing and VLSI architecture:	C.N. Zhang
Computers in education:	D. Hepting, R.B. Maguire
Computational acoustics:	D. Gerhard
Computational geometry and graph theory:	B. Yang
Computer security:	P. Fong, C.N. Zhang
Computing theory, databases:	L. Saxton, J.T. Yao, Y. Yao, W. Ziarko
Data mining:	H. Hamilton, R. Hilderman, D. Slezak, W. Ziarko
Graphics, computer-aided visualisation:	D. Hepting, X.D. Yang
Human-computer interaction:	D. Gerhard, D. Hepting, R. Hilderman, R.B. Maguire
Informational retrieval and rough sets:	D. Slezak, Y. Yao, W. Ziarko
Languages, compilers, text processing:	D. Barnard, L. Symes
Software technology/engineering:	L. Fan, P. Fong, S. Sadaoui-Mouhoub, D. Slezak, W. Ziarko

Dr. Michael Wong retired in 2003. The Department is currently recruiting to fill one position.

Department of Geology

The research expertise of the Department of Geology includes igneous and metamorphic petrology, structural geology, organic petrology, geochemistry, clastic and carbonate sedimentology, mineralogy, geomorphology, Quaternary geology and economic geology. The department maintains research collaborations with Saskatchewan Industry and Resources (SIR). This collaboration gives faculty access to the SIR Subsurface Laboratory and core depository. SIR is also a source of research funding and provides graduate and undergraduate student support. Some members of the department contribute to the research activities of the Petroleum Technology Research Centre (PTRC) situated in the University's Research Park.

The research expertise of the department is broadly grouped as follows:

Economic geology and geofluids:	G. Chi
Carbonate petrology and diagenesis:	H. Qing
Clastic sedimentology and stratigraphy:	K. Bergman
Igneous petrology/geochemistry:	B. Watters
Igneous petrology and mineralogy:	I. Coulson
Structural geology and metamorphic petrology:	K. Bethune
Organic petrology/geochemistry:	S. Bend
Geomorphology and Quaternary Environments:	J. Dale

The Department is currently recruiting to fill a 3 year term position in field-oriented petrology.

Department of Mathematics and Statistics

Research by members of the Department of Mathematics and Statistics is primarily in theoretical areas. In mathematics, the department undertakes research in algebra, number theory, graph theory, geometry, algebraic topology, operator algebras, matrix theory and analysis. The department also has research activities in both theoretical and applied statistics. In addition, the department engages in consulting activities in actuarial science and statistics. Dr. Brian Alspach, a distinguished Canadian mathematician, is an adjunct professor and Dr. Fotini Labropulu is an associate professor from Luther College.

The expertise of the department is broadly grouped as follows:

Actuarial mathematics:	L. Miller, P. Douglas
Algebra and number theory:	A. Herman, R. McIntosh, F. Szechtman
Algebraic K-theory:	A. Nenashev
Algebraic topology:	D. Stanley
Category theory and topology:	J. Funk
Classical and applied analysis:	C.-H. Guo, F. Labropulu (Luther College)
Discrete mathematics:	B. Alspach, D. Hanson, K. Heinrich
Functional analysis:	M. Argerami, J. Erlijman, D. Farenick, M. Torres
Geometric complex analysis:	B. Gilligan
Geometry:	J.C. Fisher
Mathematics education:	G. Larson, P. Maidorn, H. Weston
Matrix theory:	F. Barioli, S. Fallat, S. Kirkland,
Statistics and probability:	A. Adatia, D. Deng, A. Simchi, R.J. Tomkins, A. Volodin

Dr. Dieter Ruoff retired and Drs. E. Ahmed and R. LaHaye resigned. The Department has successfully recruited to fill one vacant position in Mathematics (A.-L. Mare; quantum cohomology and symplectic geometry) and one vacant position in Statistics (M. Kozdron: probability) effective July 1, 2004.

Department of Physics

The Department of Physics has active research programs in experimental and theoretical subatomic physics, and in observational astronomy. The research of many of the faculty members is collaborative in nature and the Physics Department organizes most of its research infrastructure under three groups: SPARRO (Subatomic Physics at Regina with Research Offshore), REGIE (Regina Experimental Group in Intermediate Energy Physics), and STAR (Subatomic Theory at Regina).

The expertise of the department is broadly grouped as follows:

Experimental subatomic physics:	E. Brash, G. Huber, G. Lolos, E. Mathie, Z. Papandreou, R. Tacik (TRIUMF Research Scientist)
Observational astronomy:	P. Bergbusch, M. Beech (Campion College)
Theoretical physics:	B. Dutta, R. Lewis, N. Mobed

The Department is currently recruiting to fill a position in astrophysics.

6.2 External Funding and Granting Agencies

Ongoing research in the Faculty of Science is supported by a number of external agencies. The Natural Sciences and Engineering Research Council of Canada (NSERC), the Social Sciences and Humanities Research Council of Canada (SSHRC), and the Canadian Institute for Health Research (CIHR) are the three federal granting bodies that provide the majority of external funding that Science faculty members receive annually in support of their research and scholarship. The Canada Foundation for Innovation (CFI), in partnership with the Government of Saskatchewan, provides infrastructure support for high-quality research proposals. At the provincial level, researchers are eligible to compete for funds from the Health Services Utilization and Research Commission (HSURC).

Table 6.1 summarizes by department the sources of funds received by Faculty of Science researchers in the fiscal year 2002-2003. The table does not reflect the total amount of funding awarded because in many instances the award is paid out over a number of years.

Table 6.1. Sources of funds received by Faculty of Science researchers in the fiscal year 2002-2003.

	NSERC	SSHRC	CIHR	FED GOV'T	PROV GOV'T	INDUSTRY	ASSOC/ FOUND/ TRUSTS	INTER -FUND TRANSFER	MISC.	TOTALS
Dean's Office							3,800		7,630	11,430
Biology	300,013		5,741	31,076	268,538	39,589	10,800	41,500	166,189	863,446
Chemistry and Biochemistry	247,997			65,602	80,039			42,000	1,300	436,938
Computer Science	395,084	28,054		113,721		286,830		85,694		909,383
Geology	102,440			15,000	94,601	151,380		17,761		381,182
Mathematics and Statistics	184,959			5,000	50,000	103,265		34,961		378,185
Physics	481,600				32,474		145,632	2,950	500	663,156
Totals	1,712,093	28,054	5,471	230,399	525,652	581,064	160,232	224,866	175,619	3,643,720

Support from NSERC for ongoing research is mostly in the form of individual discovery grants. Additional NSERC funding comes from Research Tools and Instrument (RTI) grants, group discovery grants, project grants, industrial collaborative grants, and strategic-research grants. The University of Regina is represented at the national level by members of the Faculty of Science who serve on the following committees devoted to the adjudication and allocation of NSERC research funding.

S. Wilson (2003): Grant Selection Committee, Research Grants in Evolution and Ecology
 E. Brash (2005): Chair, Grant Selection Committee, Sub Atomic Physics
 H. Hamilton (2006): Grant Selection Committee, Computing and Information Science-B

The expertise of many more faculty members is routinely solicited by the national granting agencies during the annual peer review of research grant applications. In addition, Dr. Rod Kelln serves on the Multidisciplinary Assessment Committee of the Canada Foundation for Innovation and Dr. Doug Farenick represents NSERC at the University of Regina.

The University is also represented at the provincial level by Dr. Tanya Dahms who serves on the HSURC Review Committee. Dr. Katherine Bergman serves on the HSURC Grant Selection Review Team.

6.3 Canada Research Chairs

The faculty has received a Tier I chair in the area of Energy and Environment (P. Leavitt), and a Tier II chair in Computational Physics (R. Lewis). The faculty is searching for a candidate to nominate to a second Tier II chair.

6.4 International Research Development

It is commonplace for members of the Faculty of Science to be involved in fieldwork abroad or in international collaborations. University of Regina scientists are routinely traveling abroad to present the results of their research at international symposia, and to attend conferences and workshops to keep up to date with cutting-edge developments in their discipline.

6.5 Research Opportunities for Undergraduate Students

Canadian Cancer Society Summer Research Awards

Each summer there is an opportunity for two undergraduate students to undertake research in areas of interest to cancer research, under the direction of a faculty member. In 2003, Dr. Wee was responsible for supervising the work of one undergraduate recipient (refer to 4.6) of the award and the student report on the work was submitted to the Canadian Cancer Society.

NSERC Undergraduate Summer Research Awards

NSERC annually allocates a number of awards for undergraduate students to obtain significant research experience under the direction of NSERC researchers (refer to Table 5.4).

Undergraduate Research Assistants

Dozens of undergraduate students were hired by Faculty of Science researchers to assist in laboratories, fieldwork and other research-related activities over the summer months. Partial funding for these students comes from the Centennial Student Employment Program (refer to Table 5.5). This is a provincial initiative to create jobs for students. This is the second year of a five year program.

6.6 Research Journals

The University of Regina began to reap the benefits of the Canadian National Site Licensing Project (CNSLP) in 2001. A consortium of over 60 Canadian institutions and libraries, including the University of Regina and the Canadian Foundation for Innovation, participate in the CNSLP, which permits consortium researchers and students electronic access to a very large number of scholarly journals. This extraordinary enhancement of the University's journal collection is of particular use to scientists, as the majority of the journal titles are devoted to scientific research. These journals are accessible from offices, laboratories, residence rooms, and classrooms on campus; furthermore, the University of Regina Library has set up a proxy server through which anyone with a valid University of Regina library card can access the journal collection from any computer off campus.

In 2003 the Library began to enjoy the benefit of having online access to ScienceDirect, a large platform of more than 1700 journal titles from Elsevier. These titles are in all areas of science, technology and medicine. Also added in 2003 was online access to 150 Oxford University Press journals, many of which are science related. In addition to the scientific journals now available electronically, the library provides access to JSTOR, an archival service for past issues (including the prestigious journal *Science*) dating from 1900-1997.

PART 7: UNIVERSITY SERVICE

7.1 Representation on University committees

Members of the Faculty of Science serve as representatives to other faculties and are members of University committees including:

- Senate
- Executive of Council
- Planning and Priorities Committee
- Council Admissions and Studies
- Council Scholarship Committee
- Deans' Council
- President's Research Committee
- President's Committee on Animal Care
- Research Ethics Board
- President's Advisory Committee on Information Technology
- University Committee for Promotion to Professor

7.2 Professional Organizations

Faculty members of each academic department belong to various professional organizations. These organizations are named for each department below.

Biology

- Animal Behaviour Society
- American Ornithologists Union
- American Society of Limnology and Oceanography
- American Society of Mammalogists
- American Society of Zoologists
- British Ecological Society
- Canadian Entomological Society
- Canadian Society of Environmental Biologists
- Canadian Society of Plant Physiologists
- Canadian Society of Zoologists
- Ecological Society of America
- Geological Society of America
- International Association of Great Lakes Research
- North American Benthological Society
- Phycological Society of America
- Sigma Xi
- Society of Canadian Limnologists
- The Wildlife Society

Chemistry and Biochemistry

- American Chemical Society
- Biophysical Society
- Canadian Institute of Chemistry
- Canadian Society for Chemistry
- Federation of American Society for Biochemistry
- International Society for Heterocyclic Chemistry
- American Association of Cancer Research

Computer Science

American Association of Artificial Intelligence
Association for Computing Machinery
Canadian Information Processing Society
Canadian Society for Computational Studies on Intelligence
Entity Relationships Society
Florida Artificial Intelligence Research Society
Institute of Electrical and Electronic Engineers
International Roughset Society
North American Fuzzy Set Society
Society for Industrial and Applied Mathematics
Special Interest Group
Information Retrieval
Artificial Intelligence
Models of Data

Geology

Association of Professional Engineers and Geoscientists of Saskatchewan (APEGS)
American Association of Petroleum Geologists (AAPG)
American Association of Petroleum Geologists Student Chapter
Canadian Sedimentology Research Group
Canadian Society of Organic Petrologists
Canadian Society of Petroleum Geologists (CSPG)
European Association of Organic Geochemists
International Association of Sedimentologists (IAS)
International Committee of Coal Petrologists
Geological Association of Canada (GAC)
Geological Society of America
Geological Society of London
Geological Society of South Africa
Mineralogical Association of Canada (MAC)
Mineralogical Society of Great Britain
National Association of Geology Teachers
Saskatchewan Geological Society (SGS)
Society for Sedimentary Geology (SEPM)
Society of Organic Petrologists

Mathematics and Statistics

American Mathematical Society
American Statistical Association
Association for Women in Mathematics
Bernoulli Society for Probability and Statistics
Canadian Applied and Industrial Mathematics Society
Canadian Mathematical Society
Canadian Mathematics Education Study Group
Combinatorial Mathematics Society of Australia
German Mathematical Society
Institute for Combinatorics and Its Applications
Institute for Mathematical Statistics
International Chinese Statistical Association
International Indian Statistical Association
International Linear Algebra Society
International Statistical Institute
Mathematical Association of America
National Council of Teachers of Mathematics
Royal Statistical Society

Statistical Society of Canada
Society for Industrial and Applied Mathematics
The American Academy of Actuaries
The Canadian Institute of Actuaries
The Society of Actuaries

Physics

American Physical Society (APS)
Canadian Association of Physicists (CAP)

PART 8: PUBLIC SERVICE

8.1 Schools

Our faculty members are regularly invited to give lectures and presentations at elementary and secondary schools, as well as community organizations (e.g., Beavers, Cubs). These visits are well received by the school children and their teachers, and provide the faculty a means of interacting with potential students. The Faculty of Science sponsors several events organized by various local and regional school systems such as science fairs and career fairs. The faculty also provides displays and volunteers (e.g., judges, mentors) to these functions.

8.2 Community

The Faculty of Science sponsors the Basterfield Lecture Series in honour of Dr. Steward S. Basterfield, former Dean of Regina College. Dr. Basterfield was an accomplished scientist with interests in scientific principles and the philosophy of science. This lectureship series is the major event sponsored by the Faculty of Science for the academic and public communities of southern Saskatchewan. Outstanding scientists and engineers from a variety of disciplines are brought to the campus to discuss the broad influence of research and technology on society in their discipline specific areas. Dr. Robert Brown from the Department of Statistics and Actuarial Science at the University of Waterloo was the 44th Basterfield lecturer.

The Department of Mathematics and Statistics hosted the annual Mathematics Enrichment Camp for students from grades 7 to 12. Students from across the province attended and were engaged in a wide variety of activities to develop mathematical skills and to expose them to different opportunities available in mathematics. The two-day camp includes activities, games and presentations on a wide variety of topics designed to spark and/or enrich student interest in mathematical science. Topics include, logic games, fractals and robotics. The Department also sponsors the Problem of the Month Contest. Each month a challenging math problem appears on the Department web page and in the Carillon (the University student newspaper). Although a few responses have been received locally many of the responses are from other provinces as well as Spain and Russia. The Department maintains Math Central a web-based interactive resource for teachers and students.

Many of our faculty members are members of the Saskatchewan Science Centre and give public presentations or assist with the development of displays. The Faculty of Science is a gold sponsor of the Science Centre and was a corporate sponsor for the Fantasy Food 2003 Charity Gala Event.

Appendix 1: Professor Emeriti for 2003

Department of Biology

Dr. Keith Denford
Dr. George Ledingham
Dr. George Mitchell
Dr. William Quick
Dr. M.V. Sethu Raju
Dr. Paul Riegert (deceased 2002)
Dr. Diane Secoy
Dr. A. Walther
Dr. Russell Zacharuk

Department of Chemistry and Biochemistry

Dr. Keith Johnson
Dr. Donald Lee

Department of Computer Science

Dr. Michael Wong

Department of Geology

Dr. Pier Binda
Dr. Donald Kent
Dr. Laurence Vigrass

Department of Mathematics and Statistics

Mr. Norman Biernes
Dr. James Conlan
Dr. Audrey Duthie
Dr. Haragauri Gupta
Dr. Saroop Kaul
Dr. Eusebio Koh
Mrs. Joanne McDonald
Dr. R. Ian McDonald
Dr. Dieter Ruoff
Dr. Daihacharo Sato
Dr. C.L. Wang

Department of Physics

Dr. Leonard Greenberg
Dr. Joseph Kos
Dr. S. Ishrat Naqvi
Dr. Giorgio Papini
Dr. Bev Robertson

Appendix 2: Adjunct and Associate Members of 2003

Adjunct Members:

Department of Biology

Dr. Harold Bryant
Dr. Gregory Horsman
Dr. Glen Sutter

Department of Chemistry and Biochemistry

Dr. Keith Johnson
Dr. Lynn Kirkpatrick
Dr. Ron Treble

Department of Computer Science

Dr. Nicholas Cercone
Dr. Scott Goodwin
Dr. Mengchi Liu
Dr. Abdul Sattar
Dr. Chris Shaw
Dr. Xiang Yang

Department of Geology

Dr. Ken Ashton
Dr. Leslie Beck
Dr. Ralph Cheesman
Dr. David Ebeth
Dr. Donald Kent
Dr. Per Kent Pedersen
Dr. Laverne Stasiuk
Dr. Robert Macdonald

Department of Mathematics and Statistics

Dr. Brian Alspach
Dr. Gemai Chen

Department of Physics

Dr. Roman Tacik

Associate Members:

Department of Biology

Dr. Denis Alfano
Dr. Rod Kelln
Dr. Suzie Nilson (First Nations University of Canada)
Dr. Mary Vetter (Luther)

Department of Chemistry and Biochemistry

Dr. Neil Ashton
Dr. Nazih Noureldin (First Nations University of Canada)
Dr. Reid Robinson

Department of Computer Science

Ms. Maureen Bradley
Dr. Ed Brash
Dr. Norma Fuller (First Nations University of Canada)
Dr. Sheila Petty

Department of Mathematics and Statistics

Dr. Ejaz Ahmed
Dr. Edward Doolittle (First Nations University of Canada)
Dr. Fotini Labropulu (Luther)
Dr. Javad Tavakoli (First Nations University of Canada)

Department of Physics

Dr. Martin Beech (Campion)

Appendix 3: Sessional Lectures for 2003

Department of Biology

Fidji Gendron
Peter Pieroni
Craig Willis

Department of Chemistry and Biochemistry

Donna Draper
Ruth Leigh
Larry Wingert

Department of Computer Science

Janine Bernat
Yaohua (Ivan) Chen
Robert Cowles
Orland Hoever
Zhiyong (David) Lu
Tetyana Manuylenko
John Quesnel
Takis Skagos
Yan Zhao

Department of Geology

Pier Binda
Ralph Cheesman
Evan Morris

Department of Mathematics and Statistics

Francesco Barioli
Sarah Carnochan Naqvi
Iqbal Husain
Nathan Krislock
Leigh Anne MacKnight
Manmoud Manjegani
Barb Pidkowich
Eric Roettger
Jonathan Scott
Tara Stuckless

Department of Physics

Nikolay Kolev