UNIVERSITY OF ALBERTA

2013 COMPREHENSIVE INSTITUTIONAL PLAN

PREPARED FOR
The Ministry of Enterprise and Advanced Education, Government of Alberta

ADDENDUM

(June 2013)

The 2013 Comprehensive Institutional Plan was submitted to the University of Alberta Board of Governors for final approval on March 15, 2013. Due to changes in the expected Campus Alberta grant announced in the March 7 provincial budget, the board officially withdrew the document on March 15, pending revisions. Since then, the U of A's 2013 Comprehensive Institutional Plan has been amended, but only in part.

Although financial circumstances have changed significantly, the U of A remains committed to its chief strategic goal to be a leader among the world's best public comprehensive, research-intensive post-secondary institutions. The university also remains committed to its short- and long-term access, programming, research, and capital plans and goals. Thus, the executive summary, environmental scan, academic and capital plans, and appendices that follow this addendum have not been revised.

They remain unchanged because the U of A must continue to fulfil its mandate to provide excellence in education and research. However, we also note that our ability to deliver on the mandate and our aspirational long-term strategic goals is now at risk due to the magnitude of the cuts we face and the potential loss in quality that could result from the major resturcturing that lies ahead. If the province of Alberta is to continue to benefit from the knowledge, skills, and qualification of our graduates, as well as from the translation of discoveries into technical and social innovations that fuel the social and economic prosperity that characterizes Alberta, the U of A must continue to:

- attract and retain talented students, faculty, and staff and foster an environment that enables their best work;
- establish graduate-to-undergraduate student and professor-to-student ratios characteristic of North American peer institutions;
- provide access to innovative learning opportunities for a diverse student body—opportunities that include experiential learning, undergraduate research, community service-learning, entrepreneurship, and international experience;
- advance a multi-faceted internationalization strategy that includes developing and leveraging research and teaching partnerships with top global institutions and organizations;
- secure the financial and human resources needed to support research, scholarship, and creative activities at the highest level;
- plan, build, and maintain the infrastructure needed to enable and support the academic mission, plans, and goals of the institution; and
- position the province nationally and internationally as one that is vibrant, forward-thinking, innovative, and a place where great minds gather.

Above all, the U of A remains firmly committed to excellence. At its April 2013 retreat, the Board of Governors stated that it is "united in purpose and committed to delivering excellence across the institution." Why is excellence so vital? Simply put, Albertans need and deserve the benefits that a globally recognized institution brings to its citizens, who move internationally, and to its industries, which engage globally. Alberta's ability to capitalize on strategic opportunities, find effective solutions to issues of provincial interest, and provide leadership in areas of international importance is directly linked to this university's ability to attract and achieve excellence. With it, the U of A—and by extension this province—can create partnerships with global innovators and compete at the highest levels on the international stage.

A flagship institution with a national and international reputation for excellence has also proven to be a major benefit to Campus Alberta. Since its founding in 1908, the U of A has demonstrated and provided academic and administrative leadership and service to the province's

post-secondary community. Campus Alberta now boasts the most effective student transfer program on the continent. To date, the U of A has negotiated more than 5,200 transfer agreements with its Campus Alberta partners, enabling more than 27,000 students to move from other Campus Alberta institutions to the U of A. More than one in four U of A students has benefited from the Campus Alberta transfer program.

An exceptional resource for all Campus Alberta students, as well as government, industry, and public users, U of A Libraries serves as a repository for and provides access to massive digital and print collections. These collections are made available to users through NEOS, a growing, multi-library consortium headquartered at the U of A, and The Alberta Library, an aggregating service extending to patrons of municipal and small-town libraries across the province.

The U of A works with partners in the Comprehensive Academic and Research Institutions (CARI) sector to create, operate, and co-fund cross-institutional research chairs, centres, and institutes to create networks of talent and innovation across the province. It draws in national and international funding and collaborators from private, public, and philanthropic sources to extend Alberta's research, scholarship, and innovation capacity far beyond what would otherwise be possible.

The U of A's leadership in Campus Alberta extends beyond academic collaboration to administrative services, ranging from auditing services to managing major capital projects to establishing provincial standards for research ethics. Overall, the U of A plays a leadership role in creating and facilitating collaboration within Campus Alberta. Working with provincial partners, we create opportunities for students in rural and remote areas, and share resources and best practices to create administrative and system-wide efficiencies and leverage economies of scale.

Within this context, the 2013 Comprehensive Institutional Plan is a forward-looking, strategic document that anticipates the need for change at an institution with ambitious international goals. The plan highlights current provincial and global financial constraints, and notes that current post-secondary funding models need review and reform to facilitate the differentiated roles of Campus Alberta's six sectors. It also takes into account major new trends in global higher education, which have led to the development of new academic programs and research networks in areas of growing demand and need. Some of those trends include the rise of digital learning technologies, the increasing global competition in graduate education, and the need to inspire creativity and entrepreneurship in our students so they will be prepared for shifts in the employment landscape. As it has for more than a century, the U of A is anticipating change and evolving to meet the needs of the whole people through excellence in education and research. Because of that striving, this university will continue to provide leadership well into the next century.

Although much of the original 2013 Comprehensive Institutional Plan remains in place, revisions have been made in response to the unexpected 7.2 per cent decrease in the Campus Alberta grant. Plans in the original version of the CIP were based upon the anticipated two per cent increase to the university's operating funding as outlined in the 2012 provincial budget. With a combined reduction of 9.2 per cent, or $55 million, to the operating budget, the Board of Governors withdrew the March 15 submission of the 2013 CIP to allow for adjustments to the institutional budget.

All substantial revisions to the document are contained within this addendum, which in addition to this preamble includes complete versions of the "Institutional Budget, 2013-14" and "Resource and Risk Implications" chapters,

both of which contain significant changes. Future budget forecasts have also been adjusted. The original versions of these chapters remain within the body of the full CIP but are now marked "rescinded." They remain in the document to provide the full context in which academic and capital planning was done.

The significant cut in operating funding, combined with continuing restrictions on tuition revenue and low interest rates, will require fundamental restructuring for the university to bring its budget into balance. To put these challenges into perspective, the U of A's 2013-14 budget shortfall is almost equivalent to the base funding of one of the university's largest faculties, or the combined base budgets of five of the university's small and mid-sized faculties.

In light of the magnitude of the challenge, the university must take the time necessary to consult with its community to identify, plan, and implement smart and sustainable structural changes. Time is also needed to follow well-established university governance processes, protocols, and approvals required to put academic and structural reforms in place. As a result, this addendum does not contain detailed short-term restructuring plans.

Instead, the need for time is reflected in our revised budget planning. In addition to providing a revised detailed budget for 2013-14, the U of A has developed a plan for balancing the budget to be implemented over three years. A shorter timeline would dramatically increase risk to the quality of education and research programs offered; the capacity to recruit and retain high-quality faculty, staff, and students; and the delivery of an enriched learning environment. The U of A's growing national and international reputation for excellence would also be at risk.

Highly skilled people are Alberta's pre-eminent natural resource in the global knowledge economy, and education is essential to the province's ability to build and sustain a strong foundation of prosperity. Strong, consistent investment in post-secondary education is a critical factor to successfully meeting the province's goals of diversifying the economy, building resilient communities, enhancing quality of life, and achieving its potential for leadership in Canada and the world.

INSTITUTIONAL BUDGET, 2013-14

(Revised June 2013)

The University of Alberta developed its initial 2013-14 budget based on a 2012 provincial commitment of a two per cent increase to its Campus Alberta grant. On March 7, 2013, the provincial government tabled a budget that revealed an unexpected and significant reduction in the level of funding for Alberta's post-secondary sector. The university's Campus Alberta grant was reduced by 7.2 per cent, or $43 million. Coupled with the anticipated two per cent grant increase, the net effect was a $55-million reduction in anticipated provincial funding. This has required the university to completely redraft its 2013-14 budget and future forecasts. This dramatic cut in funding, coupled with continuing restrictions on tuition revenue and the new economic reality of low interest rates, will require fundamental restructuring over several years in order for the university to bring its budget into a balanced position.

In 2011, the Public Sector Accounting Board (PSAB) issued a financial reporting framework for government not-for-profit organizations. This framework applied to all institutions under the direction of the government of Alberta, which included post-secondary institutions. The university has been transitioning to the PSAB standards over the last two years, incorporating the required accounting adjustments and modifying its budget tables to better align with the PSAB standards. This transition will continue over the next several years as the university receives further clarification from the provincial government on the application of the standards.

In incorporating the PSAB standards into the budget, there are two substantive changes in the university's budget for 2013-14. The first is the presentation of the university's budget in a consolidated Generally Accepted Accounting Principles (GAAP) format only. This is a change from previous years, when the university presented both a cash-based operating budget and a consolidated GAAP budget. The presentation of a consolidated GAAP budget only is consistent with the Post-Secondary Learning Act, which requires the Board of Governors to approve a consolidated GAAP budget. For day-to-day operating purposes, the university will continue to use the necessary management and accounting reports for oversight of the university's operating activities. The second substantive change in the budget presentation is the treatment of the university's endowment income and expense, which has a direct impact on the university's excess/deficiency. This impact will be discussed in detail below.

Consolidated Budget

Prepared under Canadian Generally Accepted Accounting Principles (GAAP), the U of A's 2013-14 consolidated budget reflects the entire enterprise, including unrestricted and restricted funds. This includes funding for general operations, ancillary operations, research activities and capital projects. Funding for general and ancillary operations are unrestricted within the consolidated budget; research revenues, philanthropic sources of revenue, and capital project funding are restricted. The difference between unrestricted and restricted funds is in the degree of university control over the use of the funds. All unrestricted funds fall fully within the authority of the board to use to advance the institution's enterprise, whereas restricted funds can only be used for the purposes for which they were received.

Given the magnitude of the cuts to the Campus Alberta grant, and to avoid profoundly damaging the academy, the university has developed a three-year plan to increase revenue and reduce expenditures. This phased approach is critical if the university is to make informed decisions on where the fundamental restructuring will occur. However, before considering what changes must be made, it is essential to start by understanding the full context of the budget challenges before the university.

In its March 2013 draft budget, the university had already identified a structural operating deficit of $12 million based on the fact that its primary expenditures were increasing at four per cent while its revenue sources were increasing at two per cent. When the structural deficit of $12 million is combined with the loss of $55 million in anticipated funding, the overall impact to the university's operating budget is $67 million in 2013-14. In addition to these changes, the university must also factor into its forecasts the compounding effect of no grant increases in the immediate to mid-term. The net effect to the university's revenue budget is substantial.

To put the challenges the university faces in context, the 2013-14 shortfall of $67 million is almost equivalent to the base funding of one of the university's largest faculties, or the combined base budgets of five of the university's small and mid-sized faculties. This is why it is critical for the university to have sufficient time to assess and evaluate possible structural changes, engage the university community, have proposals vetted appropriately through its governance processes, and subsequently implement the approved changes. Over the three-year period, adjusting for the initial shortfall of $67 million plus the compounding effect of no annual increase to the grant, the university has planned for net budget changes of $28 million in 2013-14, $26 million in 2014-15 and $30 million in 2016-17 for total budget adjustments of $84 million. The consequence of this phased approach is that the university will have substantial deficiencies in 2013-14 and 2014-15, with the intention of achieving a balanced budget in 2015-16. It is important to note that if there is still no increase to the grant in 2016-17, to achieve a balanced budget in that year, a further $17-million cut will be required. This would result in total budget cuts of $101 million over a four-year period.

For 2013-14, the budget reflects a shortfall of revenue over expense of $44.7 million, or 2.6 per cent of the university's budgeted consolidated revenue. The primary driver of the deficiency is the cut to the Campus Alberta grant and the loss of the anticipated grant increase. The deficiency is also driven by two accounting factors. The first is the impact of the amortization expense of capital in the unrestricted operating fund. As the university continues to capitalize its new buildings, the associated expense in the operating fund will continue to increase. Although transfers from deferred contributions are made to offset the capital expense, the net impact remains where capital expense is higher than the capital transfers driving some of the consolidated deficiency. The second accounting factor is the treatment of endowment income under the new public

sector accounting standards. Previously, the university budgeted endowment income based on unrealized gains or losses. Under the new standards, the university can only budget actual revenue not including unrealized gains. For 2013-14 this has resulted in a reduction in budgeted revenue of approximately $10 million. At the same time, the university uses an agreed-to formula for the calculation of the endowment payout, which is based on forecast market returns, protection of the capital, and administrative costs. The net effect under the new standards is that the budgeted revenue is less than the calculated endowment payout, which adds to the deficiency. Without this accounting adjustment the deficiency would be $34.7 million.

If the university were to fully balance its 2013-14 consolidated budget, it would require a budget cut across the institution of approximately six per cent in addition to the four per cent cuts that have now been factored into the revised 2013- 2014 budget. The university believes that a balanced approach implemented over three years is not only responsible but also critical. Any plan that would require balancing the budget in a shorter timeline would dramatically increase the risk to the university regarding the quality of its teaching and research programs; its capacity to recruit and retain the highest quality faculty, staff, and students; and its overall reputation.

Please note that the projected deficiency excludes an estimated $7.3-million provision for the Universities Academic Pension Plan (UAPP)'s unfunded pension liability expense. The provision represents the university's proportionate share of the projected 2013-14 overall change in the UAPP deficiency.

The Statement of Operations (consolidated budget) under the public sector accounting board standards, and the Statement of Cash Flows are presented in Table A6 and A7 on page xxvii.

TABLE A1 CONSOLIDATED BUDGET, 2013-14 ($'000)

	2012-13		Budget	Projections		
	Budget	**Prelim. Actuals**	**2013-14**	**2014-15**	**2015-16**	**2016-17**
Revenue:						
Government of Alberta grants	768,750	813,771	770,122	769,594	770,658	770,537
Federal and other government grants	178,327	185,673	183,735	186,682	192,112	197,915
Student tuition and fees	277,728	285,630	301,630	316,905	325,834	332,638
Donations and other grants	89,840	105, 764	107,471	108,675	112,515	115,931
Investment income	32,003	40,952	39,336	43,113	46,891	52,414
Sales of services and products	219,488	183,035	182,838	186,232	189,722	192,155
Amortization of deferred capital contributions	117,796	112,973	119,542	123,427	126,452	128,341
Total Revenue	**1,683,932**	**1,727,797**	**1,704,674**	**1,734,627**	**1,764,183**	**1,789,931**
Expense:						
Salaries	838,528	873, 407	885,029	903,615	918,818	933,513
Employee Benefits	169,096	174,375	179,960	191,947	194,918	206,990
Materials, Supplies and Services	320,885	278,741	299,406	306,615	318,314	326,290
Scholarships and Bursaries	92,772	92,322	93,170	93,924	97,300	100,845
Maintenance	70,881	74,238	72,102	72,955	70,961	72,246
Utilities	51,214	42,918	43,143	45,300	47,565	49,732
Amortization of Capital Assets	174,085	166,387	176,555	180,864	182,068	183,367
Base Restructuring:						
2013-14			built into above	n/a	n/a	n/a
2014-15				(26,000)	(26,000)	(26,000)
2015-16				-	(29,761)	(29,761)
2016-17				-	-	(17,291)
Total Expense	**1,717,461**	**1,702,388**	**1,749,365**	**1,769,220**	**1,774,183**	**1,799,931**
Excess of Revenue Over Expense	**(33,529)**	**25,409**	**(44,691)**	**(34,593)**	**(10,000)**	**(10,000)**
Transfer from Endowment	17,600	10,899	10,000	10,000	10,000	10,000
Investment in Capital Assets	(7,412)	(22,517)	(17,709)	924	10,062	(6,787)
Increase (Decrease) for the Year	(23,342)	13,791	(52,401)	(23,669)	10,062	(6,786)
Unrestricted Net Assets (deficiency), Beg.of Year	(50,691)	(87,120)	(76,135)	(128,536)	(152,205)	(142,143)
Transfer to endowments	-	(2,806)	-	-	-	-
Universities Academic Pension Plan	(1,352)	-	-	-	-	-
Unrestricted Net Assets, End of Year	**(75,384)**	**(76,135)**	**(128,536)**	**(152,205)**	**(142,143)**	**(148,929)**

*2012-2013 budgeted investment income restated to PSAB standards for comparability.

*Due to the timing of budget development relative to implementation of the new framework, the budget may be revised, or restated, to ensure alignment with the framework.

CONSOLIDATED REVENUE

Budgeted revenue for 2013-14 is $1,705 million. As illustrated in Figure A1, 45 per cent or $770 million comes from the Government of Alberta, mostly through the Campus Alberta grant, sponsored research funding, and capital funding. Of the $770 million, $549 million represents the Campus Alberta Grant, the primary source of unrestricted funding for the university's day-to-day operating activity. For 2013-14, the base Campus Alberta grant was reduced by $43 million following the tabling of the provincial budget.

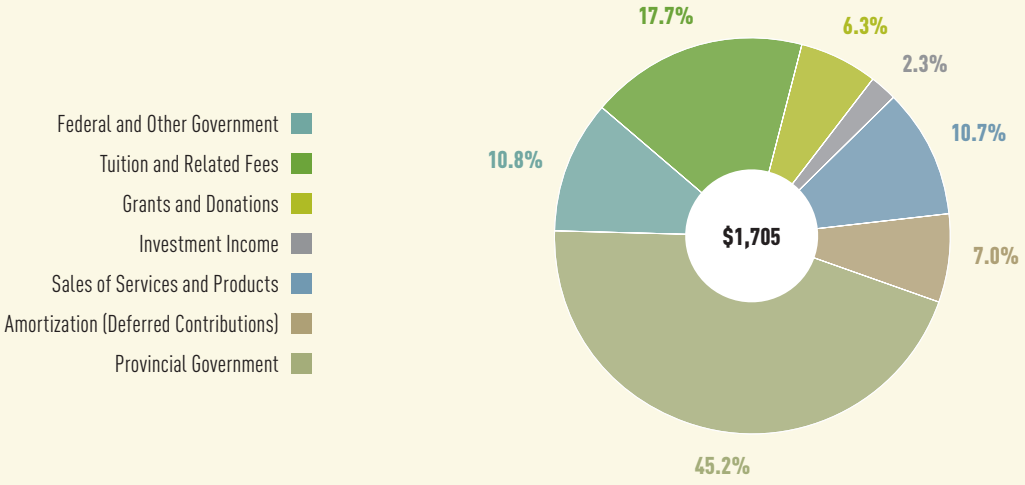
The federal and other government revenue of $183 million largely reflects the funding received by the university in support of its research mandate. The revenue source is affected by the federal government's level of investment in Tri-Council funding and the university's national competitiveness in these and other funding competitions. The university's competitiveness is a direct function of the quality of its faculty, and the research environment and administrative support the university provides to them.

Tuition and related fees are budgeted at $302 million and, at 18 per cent, represent the second-largest source of consolidated revenue. This includes all instructional fees, market modifiers, and non-instructional fees. The fee revenue is largely unrestricted, resides in the operating fund, and is used for the day-to-day general operations of the university. In December 2012, pursuant to the provincial tuition fee regulation, the Board of Governors approved a 2.15 per cent increase to general tuition fees, program fee differentials, and market modifiers. On April 18, 2013, the government announced that tuition increases for those fees that fall within the tuition regulation would be frozen at 2012-13 levels so that students would not pay the 2.15 per cent increase. For 2013-14, institutions have received the equivalent funding in the way of a one-time provincial government grant. Although the one-time grant offsets the tuition increase for 2013-14, this will result in an additional $4-million revenue shortfall in 2014-2015, which compounds going forward. The uncertainty regarding government tuition policy puts at risk future forecast tuition increases. If the university cannot increase tuition by the CPI in 2014-15 and given the provision of only one-time funding in 2013-14, the combined effect could be a $6.5-million reduction in revenue for 2014-15. For 2013-2014, the budget has factored in a 1.92 per cent increase to all mandatory non-instructional fees including the CoSSS fee. The non-permanent CoSSS fee is budgeted to generate $11.5 million of revenue in 2013-14.

The third-largest source of revenue comes from sales of services and products, representing 11 per cent of total consolidated revenue, or $183 million. This revenue is primarily derived from ancillary operations such as residence services, the bookstore, parking, and food services. For 2013-14, these revenues were adjusted based on a board-approved weighted increase to residence fees of 2.36 per cent (as outlined in Table A5 on page xxiv) and adjustments to parking rates. Sales of services and products revenues are also derived from operating activities across all faculties and units. Examples include sales associated with physical education and recreation activities (passes, camps, etc.), medical clinical assessments, and rental of equipment.

For the 2013-14 fiscal year, investment income (including both interest and endowment income) is budgeted at $39 million. Two years ago, the university was projecting interest income to be approximately $30 million in 2013-14 based upon economic and interest rate forecasts at the time. In response to continued global economic uncertainty, the Euro region moving back into recession, slowing economic growth in Asia, and continuing uncertainty in the economic recovery in the United States, revised projections have interest rates continuing at historically low levels and not recovering as previously forecast. Consequently, interest income is budgeted at only $13 million for 2013-14 increasing marginally over the next three years. Interest income, although small as a percentage of total revenue, has been an important source of unrestricted revenue for the operating fund. Given that interest rates are forecast to remain at historically low levels for the immediate to mid-term, the university must seek new sources of revenue. For 2013-14 endowment income has been reduced by $10 million from previous forecasts pursuant to the public sector accounting standards whereby only actual endowment returns are budgeted versus budgeting based on unrealized gains.

FIGURE A1 CONSOLIDATED REVENUE BUDGET, 2013-14 ($ MILLION)



CONSOLIDATED EXPENSE

For 2013-14, consolidated expense is budgeted at $1,749 million. The budgeted expense for 2013-14 reflects expenditure reductions of $28 million. This includes a 1.5 per cent budget cut to the faculties, a three per cent budget cut to central administrative units, and an additional 2.2 per cent differential budget cut to a series of budgeted expenditures across the operating fund. The differential cuts implemented for 2013-14 were made based on the following criteria:

- Preserve quality and excellence.
- Identify base expenditure reductions and not soft or one-time reductions.
- Identify areas in which base cuts would have the least possible impact on people's jobs or positions, in anticipation of the degree of position disruption anticipated in 2014-15 and 2015-16.
- Identify expenditures that had the potential to be funded by sources outside the operating grant.

Throughout 2013-14, as the faculties and units implement their plans to deal with the budget reduction, the university can expect to see staff layoffs.

As Figure A2 illustrates, investments in salaries and benefits to maintain teaching, research, and other critical activities account for 61 per cent of total expense. The budget for salaries and benefits is driven by the impact of the budget reductions, the previously negotiated across-the-board increase of 1.65 per cent with the two staff associations, the application of merit which accounts for approximately a 2.1 per cent increase, and increases in both statutory and non-statutory benefit expenses. Both the university and the two staff associations demonstrated tremendous leadership in negotiating the current salary agreements for 2013 to 2015 a year earlier than required and at a rate of increase that was lower than the more than two per cent projected for other public sector settlements. Similar leadership was demonstrated in 2009 when the associations and university negotiated unpaid furlough days, reducing operating fund expenditures by $13 million. This was followed by the institution of an annual optional five-day unpaid personal leave program for all members of both associations. When completed in 2012, salary negotiations took place in the context of a commitment by government for a two per cent grant increase and reflected a considered balance between sustaining internationally competitive salaries and responding to financial pressures and realities. For 2013-14, all senior staff at the associate vice-president and dean level and up, along with many other staff across the institution, have voluntarily taken the five personal leave days without pay to reduce the 2013-14 deficiency. This is equivalent to an average 1.92 per cent voluntary reduction in salary. The university remains committed to respecting the agreements that were duly negotiated in good faith with its associations.

Of significant concern to the university is the rate of increase to the university's benefit program costs including its pension plan contribution rates. For example, dental benefit plan costs are budgeted to increase 12.6 per cent for 2013-14 from forecast 2012-13 year-end. It is important to note that with the exception of pension plan contributions, non-statutory benefit plan contributions are all 100 per cent paid by the employer. The largest percentage increase budgeted for benefits in 2013-14 is support staff pension plan contributions. Following an actuarial review of the Public Service Pension Plan and in response to market conditions, contribution rates by the employer will increase by 15 per cent. Employer academic pension plan contributions are budgeted to increase by five per cent in 2013-14. This is preceded by an estimated increase in academic pension plan contributions of 10.4 per cent in 2012-13.

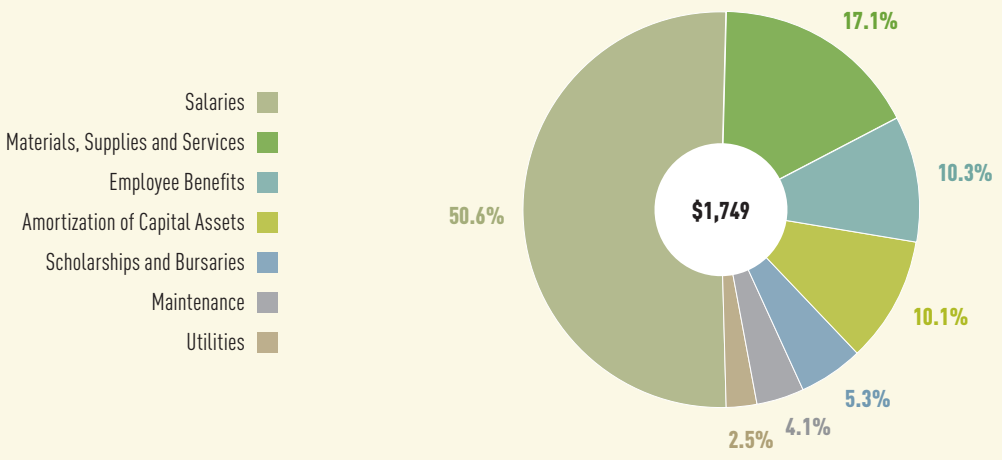
The next largest expense is for materials, supplies, and services. Budgeted at $299 million, these expenses provide essential support across the campuses, from information systems and technology, research expenditures, library resources, and maintenance, to day-to-day operations such as insurance premiums, communications, and classroom support. This expenditure line factors in budget cuts of $4.6 million as part of the budget strategies for 2013-14.

A further significant expense in the consolidated budget is $177 million for the amortization of capital assets. Under Canadian GAAP, amortization recognizes the useful life of an asset, through an annual expense which is calculated based on the estimated useful life of the asset. These assets include such things as buildings, scientific and computing equipment, software, and learning resources.

For 2013-14, scholarships and bursaries expense is budgeted at $93 million. This base funding has also been reduced by $2.5 million. Although it was an extremely difficult decision to determine which budget lines should be cut, the university identified those that could be replaced by other sources of revenue, such as philanthropic support, faculty research grants, and the additional scholarship funding the provincial government provided in its 2013-14 budget.

All remaining expense items have been budgeted based on a detailed fiscal estimate process that includes inputs from key units across the university, a review of past expenditures, the application of budget cuts, and the incorporation of contractual obligations where applicable.

FIGURE A2 CONSOLIDATED EXPENSE BUDGET, 2013-14 ($ MILLION)



Budget Assumptions and Sensitivities

The university prepares its budgets using a comprehensive integrated planning and budget process, involving key stakeholders from across the institution. Key budget assumptions and sensitivities are cornerstones of the university's multi-year budgeting process. The goal is to achieve improved accuracy in forecasting elements of the budget and provide common assumptions for budget planners across the university.

The university has two primary sources of unrestricted operating fund revenue: the Campus Alberta grant and tuition, plus interest income and miscellaneous revenues. These two primary sources make up approximately 90 per cent of the university's operating fund revenue. In terms of operating fund expenditures, salaries and benefits make up approximately 76 per cent. The balance of the university's operating fund expenditures include materials, supplies and services, utilities, and scholarships.

With the reduction in the Campus Alberta grant and even with the implementation of the 2013-14 budget cuts, the gap between operating revenue and expenditures has created a structural deficit in the operating fund of approximately $39 million in 2013-14. This gap will increase exponentially without fundamental academic and administrative restructuring throughout 2014-15 and 2015-16.

2013-14 BUDGET ASSUMPTIONS

Key highlights of the university's revenue assumptions include:

- a 9.2 per cent cut to the previously forecast Campus Alberta grant;
- a modest increase in federal research funding from 2012-13;
- no increase to credit tuition fees with a one-time government grant of $4 million to offset this revenue loss;
- a 1.92 per cent increase to mandatory non-instructional fees;
- continued phased approach to full implementation of market modifier tuition;
- marginal growth in investment income and modest growth in endowment income due to market conditions;
- a reduction in the IMP grant of $5 million to $17 million per year.

On the expenditure side, the university's staff agreements extend to 2014-15 with a negotiated across-the-board increase of 1.65 per cent in each of 2013-14 and 2014-15. As outlined earlier, statutory and non-statutory benefits are increasing, with non-statutory benefits increasing between 3.5 and 15 per cent. All other expenditures are increasing at the range of two to four per cent.

Key highlights of the university's expenditure assumptions include:

- growth in salaries and benefits driven by negotiated salary settlements (1.65 per cent across the board and 2.1 per cent merit);
- employer-paid benefit cost increases ranging from 3.5 to 15 per cent;
- a 1.5 per cent across-the-board cut to faculties and a three per cent cut to administrative units;
- relatively stable utility expenditures;
- a reduction in scholarship funding;
- all other expenditures reduced by differential cuts of two per cent including a 25 per cent reduction in operating budget funded travel.

2013-14 BUDGET SENSITIVITIES

Revenue Approximate Value

- one per cent on Campus Alberta grant: $5.5 million
- 0.25 per cent on short-term interest rate: $1.5 million
- one per cent increase on credit tuition: $2.4 million

Expense Approximate Value

- one per cent increase in salary settlements: $4.8 million
- one per cent increase in benefits: approximately $1.4 million
- $1/gigajoule increase in natural gas: $2.6 million (ancillary budget)
- one per cent operating budget reduction: $7 million

Multi-Year Budget Plan

In response to the provincial government's cut in grant funding, the university has developed a three-year plan to bring the consolidated budget into balance within these financial constraints. Given the magnitude of the cuts, the university will require the full three years to plan effectively and implement those decisions that are in the best interest of the organization overall. However, before identifying the broad-based strategies that will be implemented to balance the budget, it is vital to appreciate the overall impact to the university's revenue as a result of the 2013-14 cuts in funding.

The university develops its budget and forecasts on a four-year horizon. In its original 2013-14 budget, the university planned on the government's commitment to ongoing two per cent grant increases, assumed tuition increases based on the existing tuition regulation, and entered into salary agreements based on these revenue assumptions. The government's decision to dramatically reduce the level of grant funding and not provide for future grant increases has a dramatic compounding effect on lost revenue to the institution. Table A2 below illustrates the compounding effect of the cut to the university's grant and the loss of future grant increases. Between 2013-14 and 2016-17, based on these assumptions, the university will have lost $91 million in previously forecast revenue. Another way of looking at this is the relationship between the reduced revenue and how many student positions this funding could have supported. On average, the university grant provides $17,087 per full load equivalent (FLE) student. Factored against lost revenue of $91 million, this is the equivalent of funding 5,325 FLE students.

TABLE A2 COMPOUNDING EFFECT ON REVENUE DUE TO REDUCED GRANT FUNDING ($'000)

Provincial Funding Changes:	2013-14	2014-15	2015-16	2016-17
7.2% Cut to Grant	(42,520)	(42,520)	(42,520)	(42,520)
Loss of Expected Annual 2%	(11,842)	(23,922)	(36,242)	(48,810)
sub-total	**(54,362)**	**(66,442)**	**(78,762)**	**(91,330)**

In addition to adjusting for the cuts in revenue, the university must forecast expenditure increases associated with the current collective agreements and general inflationary pressures across the institution.

FORECAST BUDGET ASSUMPTIONS

The university has developed its multi-year plan to balance the consolidated budget based on the following broad-based revenue and expenditure assumptions.

Revenue assumptions:

- There will be no increase in the Campus Alberta grant for each of 2014-15 to 2016-17.
- Regulated tuition will increase annually by Alberta CPI as advised by the ministry.
- All non-regulated tuition will increase through both price and volume.
- All mandatory non-instructional fees will increase by a minimum of Alberta CPI.
- Research funding will increase marginally.
- Interest income will remain at historically low levels while endowment income will achieve modest returns.

Expenditure assumptions:

- The university will achieve a minimum of $26 million in expenditure cuts in 2014-15.
- The university will achieve a minimum of $30 million in expenditure cuts in 2015-16.
- Across-the-board, merit, and benefit costs will be subject to current collective agreements for 2014-15 and subject to negotiation thereafter.

2013-14 BUDGET PLAN (YEAR ONE)

As noted, for year one the university will be cutting a total of $28 million from its operating budget through a combination of faculty, central administrative unit, and line-item cuts. The decision to differentially cut various line items was difficult and will have an impact on numerous areas of the institution, including such things as library

operations and collections, IT evergreening, scholarships and bursaries, student assistantships, and matching funding opportunities.

The major focus for the university in year one, in addition to achieving the targeted cuts, is to undertake the necessary planning that will be required to dramatically restructure both the academy and administrative operations, moving the university to a sustainable budget. The university will achieve this in a way that preserves the strength of the institution, its academic priorities, and its vision of excellence. Change will be made in alignment with a shared set of budget principles and in accordance with the university's bicameral governance processes that involve student and staff participation and the board in making final decisions. Given the magnitude of the budget challenges, it will be important that all decisions be made in a timely way while communication with university stakeholders is both frequent and open.

In addition to the 2013-14 budget cuts, the U of A will be pursuing the following strategies to achieve enhanced efficiencies across the university.

1. Further build on existing models that support administrative structural changes whereby core finance, communications, and HR functions will report within a faculty or unit while being accountable to a respective vice-president.

2. Move toward the centralization of all IT support services within AICT.

3. Implement a range of administrative process changes that leverage technologies, streamline operations, and achieve efficiencies.

4. Continue to work within Campus Alberta to achieve efficiencies and assist in risk mitigation through the delivery of best practice.

2014-15 AND 2015-16 BUDGET PLANS (YEARS TWO AND THREE)

The most substantive restructuring will occur across the academy in both 2014-15 and 2015-16. Based on the above-noted planning principles, the institution will need to undertake processes that will result in the elimination of academic and administrative programs, and the fundamental restructuring of many remaining academic programs and administrative services. Certain changes to academic programs may require government approval.

For 2014-15, additional budget cuts of $26 million will be required, of which $18.7 million will occur in the academy and $7.4 million will occur across central administrative units. For 2015-16, further budget cuts of $30 million will be required, of which $21.4 million will occur in the academy and $8.4 million will occur across central administrative units. Although in dollar terms the budget cut to the academy is larger than that to the central administrative units, in percentage terms both the administration and the academy will see approximately 3.9 per cent budget reduction in 2014-15 and 4.6 per cent reduction in 2015-16. Wherever possible, faculties and administrative units will undertake activities to enhance revenue, including efforts to increase endowments, to directly offset the impact of the budget cuts. However, while endowment growth and other revenue generation will be part of the solution, they cannot fully replace the cuts to the Campus Alberta grant.

At this time it is not possible to identify in detail the specific academic or administrative program changes to be implemented. This will occur as part of the detailed planning, consultation, and governance processes to take place through 2013-14. Detailed plans for the academic and administrative restructuring to be implemented in 2014-15 will be completed no later than October 2013. The broad-based strategies for 2014-15 and 2015-16 are as follows.

TABLE A3 2014-16 INSTITUTIONAL BUDGET REDUCTION STRATEGIES

ACADEMIC STRATEGIES	DESCRIPTION
Initiate academic planning to achieve restructuring and reorganization of academic programs.	Through an academic planning process, faculties and the Office of the Provost will review all academic programs in the context of the principles identified and determine changes in the delivery of programs, or suspension or termination in response to the demand or need for a program.
Develop new cost-recovery programs.	Faculties will identify and propose new cost-recovery programs in accordance with current guidelines and policies, the revenue of which will help offset any budget cuts to the unit.
Grow international student enrolment.	Consistent with the university's academic priorities, every effort will be made to grow international student enrolment.
Grow research funding.	Consistent with being an internationally competitive research university, the institution will endeavour to grow its research funding to attract higher levels of indirect cost funding and support graduate students.
Increase fund development and advancement.	Although this is a critically important long-term strategy for the university, it will be several years before sufficient dollars are raised to offset the impact of operating cuts in 2013-14. Priority areas for new fund development and advancement will be scholarships and bursaries.
ADMINISTRATIVE AND OPERATIONAL STRATEGIES	
Through results-based budgeting methodology, the university will continue to: • identify and discontinue any non-value-added program or service • identify and implement strategies to improve the effectiveness in the delivery of a service • identify and implement strategies for alternative delivery of services • identify and implement strategies for co-ordination of services through Campus Alberta	Results-based budgeting is a methodology that will be used to assist the university in identifying those services core to its mission going forward. It will be applied to all administrative and operational activities across the institution. Outcomes through this process will include the elimination of administrative and operational programs, improvements in the delivery of programs, and identification of various alternative delivery models for administrative services and programs, including service delivery through a Campus Alberta structure. The process will also be used as a tool to manage and mitigate risk across the university and Campus Alberta.
Primarily within Campus Alberta, grow revenue through the delivery of administrative services to third parties.	The university will seek out opportunities to deliver services through Campus Alberta that will reduce overall costs to the system while generating revenue for the university.

Based on a historical review of where cuts have been made in the past and factoring in the budget cuts to the academy and central administration, positions will be affected. As the university develops its strategies and undertakes the review of academic programs, it will keep the university community informed of the impact on positions.

The strategic decision by the university to implement the restructuring over three years will result in significant operating budget deficiencies in 2013-14 and 2014-15. These deficiencies will be financed through the university's own resources, but will result in an accumulated deficit from operations that will have a direct impact on the university's net assets.

As the university moves through the restructuring process, we do not yet know the specific decisions that will be made and the impact final decisions will have on various line-item expenditures. Consequently, the Board of Governors can expect to see significant variances in actual expenditures against budgets as the restructuring is implemented.

At this time the 2013-14 budget and forecasts have not yet factored in one-time costs associated with restructuring, such as severance costs and other one-time costs. This too will create further variances in the actual expenditures against budget. Once detailed plans for 2014-15 and 2015-16 are developed, the university will be able to better estimate the one-time restructuring costs. At this time, high-level one-time restructuring costs are estimated to be $10 million to $20 million per year.

Institutional Budget Risks

As a result of the cuts to the Campus Alberta grant and the rapidly changing government policies, the budget risks to the university are substantial.

Specific factors affecting the university's budget risks include the following:

- **Campus Alberta Grant.** The compounding effect of the cuts to the grant in future years is dramatic, particularly given existing expenditure drivers. Prior to the cuts, the university had already demonstrated that a two per cent grant increase was insufficient to offset its annual expenditure increases.

- **Tuition revenue.** The current tuition policy is highly uncertain. Although the government provided one-time funding to offset the 2013-14 tuition increase, this creates a funding shortfall of $5.2 million in 2015-16. Current government direction also prevents the university's ability to implement tuition increases that would bring tuition to reasonable market levels.

- **Interest rates.** Interest rates in the immediate to mid-term are forecast to remain at historically low levels due to economic conditions.

- **Alternative revenue.** The university must increase its capacity to generate alternative sources of revenue to offset grant reductions, tuition revenue limitation, and historically low investment income returns. However, these strategies are longer-term and will never offset the full impact of government cuts.

- **Pension plan contribution rates.** The continuing increase in pension plan contributions represents a significant risk to the university. Without structural reforms to the pension plans, the level of pension plan contributions as a percentage of total benefit costs will be unsustainable.

- **Benefit costs.** The current rate of benefit cost increases is unsustainable given the restrictions in the ability of the university to increase revenues.

Capital and Ancillary Budget

CAPITAL

The university's capital budget reflects $128 million in capital projects and a further $27 million in capital program spending, for a total capital budget of $155 million. This includes projects underway or proceeding, and annual capital programs in support of health and safety, energy management, building systems, renovations, and site replacement or upgrading.

Capital projects ultimately support the university's academic plan and are in alignment with the goals and objectives within the Comprehensive Institutional Plan. They also align with provincial priorities in addressing space and program needs, and focus on renewal and preservation of facilities. Further, these projects have been approved through the university's capital expenditure authorization request policy and, as required, approved by the Board of Governors.

Table A4 lists the capital projects for 2013-14. The three major capital projects at various stages of construction for the fiscal year include the new residences in East Campus Village, ongoing construction of the Innovation Centre for Engineering, and initiation of the Physical Activity and Wellness Centre. These three projects account for $70 million of the $128 million in capital projects. The capital budget also includes just over $27 million in capital program spending. This includes $17 million in funding from the provincial infrastructure maintenance program (IMP), which was announced for the coming year. The $17 million is $5 million less than the $22 million previously budgeted for IMP funding.

Detailed information on the university's capital plan can be found in pages 113 - 140.

TABLE A4 CAPITAL PROJECTS FOR 2013-14 ($'000)

		Forecast to Complete			
	Prior Years Actuals	2012-13 Preliminary	2013-14	Future Years	Total Estimated Final Cost
Capital Projects (underway or proceeding):					
Agricultural Research Infrastructure - St Albert / Kinsella / Mattheis	4,709	6,080	1,400	-	12,189
Balmoral Centre - ERC / Cyclotron	8,892	20,108	-	-	29,000
Dentistry Pharmacy Redevelopment	104	1,896	3,700	-	5,700
Devonian Botanic Garden - Infrastructure Upgrades	-	-	5,000	8,000	13,000
East Campus Village - 89th Ave Grad Residences	20	5,980	21,026	-	27,026
Edmonton Clinic Health Academy	365,472	7,255	10,000	6,284	389,011
Edmonton Clinic Health Academy (South - Dental Operatories)	2,491	103	-	-	2,594
Federal Building (BARD replacement)	-	6,500	7,500	-	14,000
HM Tory - Phase 2 Building Systems Upgrade	5,355	885	1,100	1,100	8,441
HRIF Project (Li Ka Shing / Katz Group) Base Bldgs	234,500	472	-	-	234,972
HRIF Project (Li Ka Shing / Katz Group) Fit Outs	104,134	4,138	-	-	108,271
HRIF Project (CTRIC cGMP Fit Out - Li Ka Shing Level 7)	2,408	8,890	2,500	2,000	15,797
Innovation Centre for Engineering (ICE)	33,543	32,354	23,863	-	89,760
Pharmacy Fit Up	29,470	6,220	10,000	3,777	49,467
Physical Activity & Wellness Centre (PAWC)	1,660	6,740	25,400	23,200	57,000
Scientific Support Facilities	44,948	652	5,000	2,826	53,426
South Campus Infrastructure - Phase I	4,536	817	-	-	5,353
South Campus - Intersection 63 Ave / 122 Street	12	150	1,738	-	1,900
Other Capital Projects	668,836	15,999	9,585	2,203	696,622
Total	**1,511,089**	**125,240**	**127,812**	**49,389**	**1,813,530**
Annual Capital Programs:					
Infrastructure Maintenance Program[1]			22,000		
Energy Management			5,370		
Total			**27,370**		
	TOTAL		**155,182**		

1 Contains commitments from prior years.

* The Capital Budget was finalized on October 30, 2012, and contains values which may not align with or may not include projects identified in the CIP.

ANCILLARY SERVICES

The university operates six ancillary operations: the Bookstore, Enterprise Square, Housing, Parking, the University Health Centre, and Utilities. These ancillary operations provide services to the campus community in support of the university's mission and vision. In the case of Utilities, in addition to providing services to North Campus, the operation provides services to a number of other organizations.

Bookstore

The Bookstore is faced with a number of challenges that will need to be addressed in the coming years, including the replacement of its point-of-sale system, physical upgrades to its main store location, efficiencies in its current multi-store locations, and increasing competition from online and other sources. With new leadership in place, the Bookstore will be developing strategies and detailed plans in response to these challenges.

Enterprise Square

Enterprise Square is the university's campus located in downtown Edmonton. It is occupied by a combination of university units and commercial operations. It is currently fully occupied with the exception of approximately 4,932 sq. ft. on the main floor and 16,000 sq. ft. on the third floor. Real Estate and Property Management Services is responsible for leasing space within Enterprise Square. The maintenance of high occupancy levels is important to generate the necessary revenues to offset the building's operating costs and mortgage commitment. The ancillary is experiencing positive cash flows that is enabling it to maintain the necessary operating and capital reserves.

Housing and Conference Services (including Augustana)

The student residences and commercial properties (HUB Mall, Newton Place) are all at or close to maximum capacity. The Conference Centre continues to be a popular venue for meetings and conferences. Summer occupancy (Lister Centre) numbers have stabilized in 2012-13; however, challenges remain given the current economic climate and competition with hotels in Edmonton.
A number of initiatives were undertaken in 2012-13 including the following:

- commenced construction of new student residences (89th Avenue Student Residence) that will add 244 bed spaces (double and quad rooms), expected to be occupied beginning in September 2013
- completed a comprehensive analysis and unit review of Residence Services
- completed major window replacement in the Mackenzie residence tower as part of the continuing deferred maintenance program
- implemented initial changes to transition the Lister residence community to a first-year and transition student-only community in September 2013
- expanded food services facilities on North Campus with Aramark

Major risks to Housing and Conference Services include:

- residence rent rates that are in many cases at or near market, reducing flexibility with respect to additional revenue generation
- deferred maintenance risk at Michener Park residence
- continued deferred maintenance challenges in the older East Campus Village residences, the general level of deferred maintenance in other residences, and the need for modernization and functional renewal
- inflation of some operating costs (labour, maintenance, construction) will exceed CPI (this year 1.92 per cent), per institutional budget planning document forecasts.
- continued recession-like climate, which affects conference activity

On November 27, 2012, the board approved a weighted increase of 2.36 per cent to its residence rates. All rate increases will be effective May 1, 2013. Residence rent increases are required to offset increases in salary and benefit costs for the residence operation, to offset general inflationary pressures, and to address deferred maintenance issues, several of which have direct health and safety implications, or projects that offer the opportunity to reduce energy consumption. The following table provides examples of market adjustments for 2013-14 by residence.

Rental Rates by Residence, 2013-14

Residence/Unit	Effective May 1, 2012
Augustana (double room 8 month room & board)	$780
East Campus Village Apartments (2 Bedroom)	$636
East Campus Village Houses	$424 to $1041
Résidence Saint-Jean (8 month)	$600
HUB (2 Bedroom)	$583
Lister (Double, 8 months)	$358
Michener (2 Bedroom Row House)	$823 to $893
Newton (1 Bedroom)	$993 to $1,070
Schaffer (Single)	$672

The university currently has 4,694 residence bed spaces for approximately 12.5 per cent of the total student population including Augustana Campus (11.3 per cent excluding Augustana).

Parking Services

On November 27, 2012, the Board of Governors received for information parking rate increases of 1.92 per cent or CPI for monthly and annual rates. Visitor rates will remain unchanged for 2013-14. All rate increases will be effective April 1, 2013. After initial declines in demand due to the successes of the Travel Demand Management program, year-over-year parking demand has stabilized with the exception of non-university personnel (contractors). Parking Services capital reserves will continue to grow in anticipation of South Campus development and other capital and maintenance priorities.

Major risks to Parking Services include the following:

- Overall parking demand will decrease over time due to alternate transportation options.
- Parking rates are in many cases at or near market, reducing flexibility with respect to additional revenue generation.

University Health Centre

The University Health Centre (UHC) provides an extensive range of health services to the student community. A major focus of the UHC in the last few years has been to expand its student mental health services. The goal of the UHC is to significantly enhance these services, developing a more distributed, proactive, and preventative model than the current model that is in place. In January 2013, the provincial government announced $3 million in funding over three years to pilot a new health delivery model led by the U of A, with a primary focus on student mental health services.

Utilities

The Utilities ancillary provides services not only to university operations on the North Campus, but also to Alberta Health Services, the Cross Cancer Institute, the Jubilee Auditorium, and Canadian Blood Services. There are three major factors that affect the utility budget: weather, natural gas prices, and pool (electric) prices. Utilities continually reviews and revises rate models in light of its experience and expectations for loads, prices, and market activities, and where appropriate, enters into long-term pricing contracts.

TABLE A5 ANCILLARY BUDGET, 2013-14 ($'000)

	2012-13		Budget	Projections		
	Budget	**Prelim. Actual**	**2013-14**	**2014-15**	**2015-16**	**2016-17**
Augustana: Residence, Conferencing, and Food						
Revenue - Internal	49	66	50	52	53	54
Revenue - External	2,890	3,127	2,956	3,030	3,110	3,173
Total Revenue	**2,939**	**3,193**	**3,006**	**3,082**	**3,163**	**3,227**
Reserve Balances:						
Operating Closing Balance	1,000	822	822	822	822	822
Capital/Maintenance Closing Balance	2,767	3,614	3,629	3,710	3,791	3,876
Bookstore						
Revenue - Internal	3,700	2,928	3,162	3,320	3,486	3,661
Revenue - External	24,481	22,212	22,855	23,312	23,778	24,253
Total Revenue	**28,181**	**25,140**	**26,017**	**26,632**	**27,264**	**27,914**
Reserve Balances:						
Operating Closing Balance	(196)	(2,653)	(2,570)	(2,543)	(2,580)	(2,683)
Capital/Maintenance Closing Balance	(1,880)	(315)	(315)	(315)	(315)	(315)
Ancillary Services*						
Revenue - Internal	3,893	23,099	8,492	8,843	9,015	9,185
Revenue - External	51,570	47,773	53,950	56,235	57,671	58,953
Total Revenue	**55,463**	**70,872**	**62,442**	**65,078**	**66,686**	**68,138**
Reserve Balances:						
Operating Closing Balance	(2,030)	1,656	1,719	2,229	2,825	3,461
Capital/Maintenance Closing Balance	15,174	18,606	20,542	24,828	28,515	17,664

	2011-12		Budget	Projections		
	Budget	Prelim. Actual	2012-13	2013-14	2014-15	2015-16
University Health Services						
Revenue	**5,677**	**5,862**	**6,150**	**6,238**	**6,365**	**6,582**
Reserve Balances:						
Operating Closing Balance	353	625	456	152	(42)	-
Capital/Maintenance Closing Balance	200	200	200	200	200	79
Utilities						
Revenue - Internal	72,949	64,613	72,532	74,876	79,930	80,743
Revenue - External	21,507	16,572	22,216	22,753	24,037	24,116
Total Revenue	**94,456**	**81,185**	**94,748**	**97,630**	**103,967**	**104,859**
Reserve Balances:						
Operating Closing Balance	9,566	4,702	4,702	4,702	4,702	4,702
Capital/Maintenance Closing Balance	19,147	21,342	26,083	31,020	36,084	41,205
TOTAL REVENUE	**186,716**	**186,252**	**192,363**	**198,659**	**207,445**	**210,720**
Reserve Balances:						
Operating Closing Balance	8,693	5,152	5,129	5,362	5,727	6,302
Capital/Maintenance Closing Balance	35,408	43,447	50,139	59,443	68,275	62,509

*Ancillary Services includes Enterprise Square, Commercial Property, Parking Services, and Housing & Food Services.

TABLE A6 STATEMENT OF OPERATIONS BUDGET FOR THE YEARS ENDING MARCH 31, 2014 TO 2017 ($'000)

	Budget March 31, 2014	Forecast March 31 , 2015	Forecast March 31, 2016	Forecast March 31, 2017
Revenue:				
Government of Alberta grants	870,228	872,954	876,551	878,012
Federal and other government grants	191,806	195,016	200,650	206,581
Student tuition and fees	301,630	316,905	325,834	332,638
Sales of services and products	182,838	186,232	189,722	192,155
Donations and other grants	118,835	120,408	124,536	128,131
Investment income	39,336	43,113	46,891	52,414
	1,704,674	**1,734,627**	**1,764,183**	**1,789,931**
Expense:				
Instruction and institutional support	998,214	1,004,418	987,969	994,465
Sponsored research	421,822	436,397	451,592	467,439
Facility operations and maintenance	121,287	124,419	125,527	128,275
Special purpose	98,089	99,268	102,198	103,479
Ancillary enterprises	109,953	104,718	106,896	106,274
	1,749,365	**1,769,220**	**1,774,183**	**1,799,931**
Deficit of revenue over expense	(44,691)	(34,593)	(10,000)	(10,000)
Transfer from endowments	10,000	10,000	10,000	10,000
Change in accumulated surplus	(34,691)	(24,593)	-	-
Accumulated surplus, beginning of year	377,347	342,656	318,062	318,062
Accumulated surplus, end of year[1]	**342,656**	**318,062**	**318,062**	**318,062**

[1]This is accumulated surplus before audit adjustments

TABLE A7 STATEMENT OF CASH FLOWS BUDGET FOR THE YEARS ENDING MARCH 31, 2013 AND 2014 ($'000)

	2012-13 (p)	Budget 2013-14
OPERATING TRANSACTIONS		
Operating surplus	25,412	(44,691)
Add (deduct) non-cash items:		
Amortization of capital assets	166,387	176,555
Expended capital recognized as revenue	(112,697)	(119,542)
(Gain) loss on disposal of capital assets	964	-
Inventory writedown	300	-
Change in employee future benefit liabilities	9,252	7,477
Total non-cash items	**64,206**	**64,490**
(Increase) decrease in accounts receivable	41,135	(8,591)
(Increase) decrease in inventories and prepaid expenses	(32)	1,821
Increase (decrease) in accounts payable and accrued liabilities	(25,050)	(3,891)
Increase (decrease) in deferred revenue	31,820	34,799
Cash provided by (applied to) operating transactions	**47,873**	**24,138**
CAPITAL TRANSACTIONS		
Acquisition of capital assets	(171,889)	(240,462)
Proceeds on sale of tangible capital assets	163	-
Cash provided by (applied to) capital transactions	**(171,726)**	**(240,462)**
INVESTING TRANSACTIONS		
Purchases of investments, net of sales	9,052	107,273
Endowment investment earnings (loss)	(1,191)	22,436
Cash provided by (applied to) investing transactions	**7,861**	**129,709**
FINANCING TRANSACTIONS		
Endowment contributions	30,096	25,000
Debt - repayment	(10,991)	(7,285)
Debt - new financing, net of repayments	3,500	56,896
Cash provided by (applied to) financing transactions	**22,605**	**74,611**
Increase (decrease) in cash and cash equivalents	**(3,769)**	**7,795**
Cash and cash equivalents, beginning of year	**20,925**	**17,156**
Cash and cash equivalents, end of year	**17,156**	**24,951**

RESOURCE AND RISK IMPLICATIONS

(Revised June 2013)

For more than a hundred years, the province of Alberta and its flagship university, the University of Alberta, have committed to uplifting Albertans and forging a province that is vibrant and competitive across Canada and around the world.

Over the years, the province has made significant strategic investments into its post-secondary sector, and the U of A has built on these investments to gain a leadership position in Canada and position itself internationally in a way that establishes strong global connections for the province. In addition, these strategic investments have advanced Alberta toward its social, economic, and global aspirations, to the benefit of the province and its citizens.

These gains are now at risk. Continued strategic investment in post-secondary education is essential if the province is to realize its bold vision for a future powered by innovation, ingenuity, and an entrepreneurial spirit. In fact, the province's strategic, long-term decisions on how best to support and leverage its flagship university will be critical to the province's success in achieving its economic, social, and cultural goals. Investment in its strong flagship university will not only drive provincial economic success; it will also drive transformative change. This is a challenge the U of A embraces.

The university has, as outlined in the budget chapter of this document, identified a three-year plan to realign operating expenditures in response to fundamental changes in its budgeted and forecast revenues. At the same time, the university has emphatically confirmed its commitment to its vision as outlined in *Dare to Discover*—a vision that requires bold provincial investment in post-secondary education. Specifically, the university has identified a series of resource gaps that affect its ability to provide comprehensive and diverse educational choices that prepare Albertans for citizenship in the world, and that address Alberta's need for undergraduate and graduate alumni who will contribute to the economic, social, and cultural prosperity of tomorrow. These gaps include the fundamental need for the province to provide funding to Alberta's comprehensive academic research-intensive universities that reflects the essential mandate of our institutions and the associated cost drivers of internationally competitive research universities. Addressing these resource gaps will facilitate connection to international communities, enable the university to undertake world-leading research, and create innovative research agreements that link researchers, graduate and undergraduate students, international foundations, industry, and government. Resource gaps include investment in the U of A as the province's flagship university, enhancing internationalization, supporting digital learning and information technology, investing in capital infrastructure, and restoring payments from the Access to the Future Fund.

SUSTAINING ALBERTA'S FLAGSHIP UNIVERSITY

As a result of the 2013-14 budget cuts, the fundamental risk to the University of Alberta and to the province of Alberta is that momentum gained during previous years of growth in government funding—which enabled strategic investments in students, staff, professors, programs, and infrastructure—will be lost. Through innovation and creativity, the university will respond strategically to the budget challenges it faces. However, for the university to meet the economic and social needs of the province and compete in an internationally competitive market, ongoing cuts are not sustainable. Following a detailed review and realignment of academic programs and implementing fundamental administrative restructuring, cost drivers across the academy will continue to increase in the range of two to four per cent per year. The university has specific costs associated with its research mandate related to graduate students, faculty who support those graduate students, and core research facilities that need to be funded. Looking forward, the government must develop a model that acknowledges and adequately funds Alberta's research-intensive universities and its specific cost drivers. The university must continue to grow the numbers of high-calibre graduate students and post-doctoral fellows. Graduate students, who are the engines of innovation, are vital to the province's economic diversification and competitiveness, but they cost more than their undergraduate counterparts and require different types of space, competitive funding, and most importantly, more individualized time with internationally recognized faculty who can mentor and support them in their learning and research endeavours. The paradox: the U of A's graduate students pay among the lowest tuition fees in the country, at just over $3,000—more than $2,000 less than undergraduate tuition as well as the Canadian mean for graduate tuition. Increasing graduate tuition levels to the Canadian mean would enable the university to invest in the quality of graduate education and provide the faculties with the resources to recruit and retain the brightest graduate students the world over.

In addition, specific cost elements of the university are a direct consequence of its mandate to provide the platform for Alberta's research and innovation system, initiatives, and objectives. Specifically, the university has the primary responsibility for funding two key components with its Campus Alberta grant. The first is human capacity: salaries for researchers, highly trained and specialized technical and specialized staff, post-doctoral fellows, graduate students, and undergraduate students engaged in research internships. The second element is the physical capacity for research and innovation: equipment; specialized space for post-doctoral and graduate students; and operating costs for large-scale research facilities used by university, industry and government (e.g., highly specialized scientific and medical facilities and equipment, high-performance computing, high-throughput data analysis labs). There is no dispute that these two main components define the provincial capacity for research and innovation, particularly through collaborative research with public and private sector partners. As one example, the university spends almost $9 million per year of its operating budget on animal health facilities alone, in support of sector-driven research, technology innovation, and clinical trials in the areas of the health sciences, agriculture, and biosciences. In addition to the direct costs, the university's mandate to provide this capacity includes indirect costs that range from utilities to research administration requirements. These cost elements signal the need for a qualitatively different funding model for the U of A through its Campus Alberta grant.

❖ **The University of Alberta seeks government's commitment to a funding model that recognizes and addresses direct and indirect costs of sustaining and growing a large portion of Alberta's research and innovation capacity.**

INVESTING IN INTERNATIONALIZATION

The U of A's internationalization strategy is multi-faceted and permeates the entire academic enterprise. It includes international student recruitment at the undergraduate and graduate levels, opportunities for Alberta students to study abroad, increased mobility of international students coming into the province through joint degree programs, and establishment of research consortia. These initiatives leverage the institution's and province's teaching, research, and innovation resources with those of other jurisdictions, and establish the U of A as a desired partner in China, Germany, India, and Brazil. The university aspires to create a recognizable international reputation, which can deliver to Alberta the kind of tangible and intangible benefits that signature public institutions such as UC Berkeley and UT Austin deliver to their respective jurisdictions.

The establishment of international consortia brings enormous return on investment. The track record of the university in this regard shows indisputable results and a unique contribution within Campus Alberta to the province's research, innovation, and training objectives. Examples include the Helmholtz-Alberta Initiative and the agreements signed between the U of A and several of China's top-tier universities. Such international agreements draw investment from other jurisdictions into Alberta that directly and indirectly leverages Alberta's own investments in research capacity, training, and student support. The benefits range from linking Alberta industry to international partners through university consortia to ensuring the in-mobility of highly trained personnel. With a strategic focus on five countries—Germany, China, India, Brazil, and regions of the United States—the university will continue to increase these highly beneficial relationships.

Such partnerships require matching dollars in order to leverage the investment from other jurisdictions. It is vital that when the university enters into discussions with potential partners, it can indicate that the Government of Alberta has the dedicated resources to co-fund university-initiated research, training, and innovation initiatives with international institutes, agencies, and consortia.

❖ **The University of Alberta recommends greater flexibility in the structure of Alberta Innovates and within the government that actively supports the funding of international consortia while establishing dedicated funding for matching purposes.**

INVESTING IN DIGITAL STRATEGIES AND INFORMATION TECHNOLOGY

To stay relevant in a rapidly changing world, a research-intensive university must sustain and continually renew and rethink its learning, teaching, and research information technology infrastructure. This is vital if the university is to attract and retain the best and brightest students, professors, and staff; engage external industry and international partners; and grow the research enterprise. At the same time, the university must sustain its existing information technology infrastructure while continuously improving the effectiveness and efficiency in the delivery of that technology.

Funding of the university's information technology infrastructure can be grouped into four core areas. In response to a rapidly changing world, investment in innovative digital learning initiatives that expand institutional reach and enhance teaching effectiveness is essential. In addition, continual investment is required in network sustainability and deferred maintenance, security, a graduation student registration system, and smart-classroom evergreening.

Digital learning initiatives: In 2012, the U of A began to engage more aggressively in developing and expanding the use of advanced learning technologies and their related pedagogies in undergraduate and graduate education. The

university's digital strategy objective is to both develop and offer the highest-quality digital learning technologies and pedagogies to enhance the on-campus, in-class experience, and online learning environments. The U of A is well positioned to research and develop blended and online learning. In addition to expert researchers in pedagogy and strength in computer technology research, the university has a long history of working with such approaches. This is a primary example of how the university can bring leadership to an initiative and share the benefits with all of Campus Alberta.

Through strategic partnerships with other leading universities and innovative companies, the U of A has the potential to make major contributions to the evolving state of teaching and learning at the post-secondary level. With the necessary investment of $2 million, the university will advance three digital learning pilot projects: 1) MOOCs in the Faculty of Science; 2) the hybrid learning environment in the Faculty of Education; and 3) related research projects in the Alberta Innovates Centre for Machine Learning. The U of A has the opportunity to be a participant in the adoption and research of digital learning technologies, and to better position itself for the changes that are coming. These changes, if managed well, have the potential to benefit students and support the university's mission to create and sustain a vibrant and supportive learning environment while benefiting all of Campus Alberta and Albertans.

Network sustainability and deferred maintenance: The university's network services can be divided into four service areas: the campus area network, university wireless, centrally managed local area networks, and unit-managed local area networks. Over the last five years, the university has invested operating dollars to establish evergreening funds for its centrally supported services or developed specific funding structures that allows for evergreening of the systems. These evergreening dollars will be affected as a result of funding cutbacks to the university. The largest challenge the university faces is the degree of decentralization of its LAN structures. Over the years, decentralized LAN units have not adequately evergreened their cabling, switching, routing, and firewall systems. The magnitude of this issue is now being identified as the university endeavours to streamline its operations and introduce efficiencies through the centralization of core IT services. The university's information technology team has identified a five-year consolidation plan, which is estimated to cost $38 million in one-time funding and $2.4 million in base funding. This consolidation strategy, implemented over five years, will greatly reduce IT data security and systems risks, enhance efficiencies, reduce overall operating costs, and ensure evergreening of the systems going forward.

Security: After people, information is the most critical and valuable asset in the university's teaching, research, and community priorities. Therefore, it is crucial to safeguard the university's information and information technology resources. Safeguards deployed by the university include people, technology, process, and best-practice-based controls. As advances in information and communications technology continue to transform the digital learning environment, the deployment of appropriate information safeguards must keep pace. The university's response is to invest in security training of IT staff. Because this training is so expensive, the university joined two partner

institutions to lead a Canada-wide initiative to co-ordinate online security awareness training. The result has been a reduction in training costs by 80 per cent per seat. The university is also investing in Windows-based security training for 50 of its IT staff. Finally, the university is investing in the auditing of the university's most mission-critical IT systems to assess system security. These security initiatives, although expensive, are being funded within the university's existing IT budget.

Graduate student registration system: A fundamental barrier to the goal of the university to grow its graduate student numbers is the university's graduate student registration legacy system. Due to the complex nature of graduate student recruitment and the extensive role that individual departments play in the recruitment and documentation confirmation process, a suitable enterprise-wide system has not been implemented. This has now changed, and the opportunity exists for the university to vastly improve and streamline its graduate student recruitment and enrolment processes. This system is essential if the university is to recruit the best and the brightest graduate students from around the world. The university has identified a resource need of $3 million to implement a new graduate student registration system.

Evergreening smart classrooms: In the past two years, to meet student demand and improve the quality of the learning experience, the university fast-tracked the upgrading of smart classrooms and increased the number of lab workstations. The number of smart classrooms increased from 135 to 331 in two years and the number of workstations increased from 1,533 to 1,864 in four years. Although the university has invested $3.3 million in evergreening funds for its labs and smart classrooms, the rate at which classrooms and labs were upgraded over the last few years means that current funds will not match the evergreening requirements come 2016. Additional evergreening funding of $2 million will be required to address this need. A source of additional evergreening funds has not been identified.

❖ **In developing the university's digital learning and information technology strategies, a resource gap of $41 million in one-time funding (phased in over five years) and $6.4 million in base funding has been identified.**

INVESTING IN CAPITAL INFRASTRUCTURE

In the competitive world of post-secondary education, it is important for the university to provide high-quality learning experiences and infrastructure that attracts, retains, and engages outstanding faculty and students.

The university has been able to leverage significant and continued capital funding and planning to build new learning and discovery spaces, and advance much-needed deferred maintenance. Going forward, the university has identified three priority areas for infrastructure investment, including deferred maintenance funding, planning and development dollars, and capital funding for critical projects on each of the university's distinct campuses.

Given the age of the university's buildings, adequate funding to protect against infrastructure operational failures is vital if the university is to avoid risks such as building closures. The university will modify its deferred maintenance priorities in response to the cut in infrastructure maintenance funding to $17.4 million for 2013-14. This reduction in funding for 2013-14 only puts more pressure on the need for additional envelope funding of $20 million to $30 million per annum to address the university's deferred maintenance liabilities. Although capital funding will be limited in the short term, the university requires the ability to respond quickly to new funding opportunities and partnerships. To effectively

develop and explore partnership opportunities, significant planning and pre-design work is required to prepare the university to properly scope, budget, vet, and respond to these opportunities. The university has identified the need for a funding envelope for continued planning and pre-design of priority projects and initiatives of $3 million to $4 million per annum. To address critical constraints in the university's ability to deliver on the collective visions of the university and government, and to ensure that critical capital projects for each of the university's distinct campuses is addressed, the university has identified the following one-time capital funding requirements:

- Innovation Centre for Engineering Fit-Out
- Dentistry-Pharmacy Repurposing
- Book and Record Depository Fit-Out and Expansion
- Edmonton Downtown Arts Campus
- Augustana Science Building
- Campus Saint-Jean Science Expansion

As in the past, the university will continue to investigate strategies for leveraging existing assets through partnerships, and alternative and private funding.

❖ **The university is seeking funding for critical deferred maintenance, planning and pre-design, and capital projects as indicated.**

INVESTING IN THE ACCESS TO THE FUTURE FUND

Endowments are permanent funds in which the principal is preserved and invested, earning returns that support their intended purpose in perpetuity. Strong endowments are critical and necessary funding for universities around the world. They provide a relatively stable and predictable source of ongoing funding that allows academic institutions to sustain their efforts over time and tackle large-scale, complex problems that may take generations to solve. Endowments also helps attract and retain exceptional faculty and students, sending a signal of significant commitment and support for their work and allowing them to commit to in-depth study.

The university has made a strategic decision to diversify its funding base by growing its endowment to at least $1.5 billion by 2020. An endowment at this level would put the university on the path to being competitive with its peer public universities. At $800 million, the university's endowment is currently smaller than those of the University of British Columbia, the University of Toronto and McGill University, as well as those of benchmark U.S. institutions, for both absolute and per-student values.

With the desire to grow its endowment, the university directed donations made as a result of the Access to the Future Fund to its endowment. Founded in March 2005, the Access to the Future Fund successfully stimulated $425 million in philanthropic support. The program was suspended for two years in April 2011, with only $25 million in donations having been matched by the province.

The suspension of the program frustrated and disappointed a significant number of donors, making it much more difficult to engage with them for further donations until their matching gifts are received. It is vitally important to the U of A that the remaining balance of the Access to the Future funds be paid out.

❖ **The university is seeking the reinstatement of the Access to the Future Fund, to increase the institution's success in securing philanthropic funding that supports broad-based excellence.**

Risk Implications

Like all internationally competitive research-intensive universities, the U of A must deal with a variety of risks that have the potential to hinder its growth and the realization of its vision, mission, and strategic objectives. Many of these risks have been identified throughout this document.

1. The dramatic cuts in provincial funding, uncertainty regarding government policy on tuition and low interest rates, combined with underlying cost pressures, will require the university to undergo significant structural changes across the academy and administrative operations. This new financial reality gives rise to numerous institutional risks including the impact on quality; ability to grow research and establish international partnerships; maintenance of program accreditation; ability to attract and retain the highest-quality faculty, staff, and students; maintenance of infrastructure; and overall institutional reputation.

2. Enrolment growth must be managed from the perspective of meeting the labour demands of the province and supporting the research mandate of the university. This will require the U of A striking the right balance of undergraduate to graduate students to position the university as an internationally competitive research-intensive institution.

3. Without the appropriate number of leaders, teachers, researchers, and support staff contributing to their full potential, the university will not be able to provide the quality of the learning experience or participate in the world-leading research expected of an internationally competitive research university.

4. For the university to remain relevant to its students and meet the needs and expectations of its faculty to engage in the highest-calibre research, it requires continuous investment in leading-edge IT infrastructure, highly skilled personnel, and support.

5. The continuation of appropriate levels of Infrastructure Maintenance Program funding to avoid a return to increasing levels of deferred maintenance is vital. In addition, limited or no funding of capital for new, expansion, or renewal projects will affect the capacity of the university to meet the strategic goals of the institution and will have a negative impact on the economic goals of the province.

6. An institution that aspires to be among the top research-intensive universities in the world can only achieve that goal through the establishment of strategic collaborations and partnerships with an extensive range of stakeholders. The university requires access to and flexibility in funding that would enable it to leverage tens of millions of research dollars from provincial, national, and international sources.

7. In moving toward the vision of being one of the world's great public universities, the U of A's national and international profile will increase. The university must address the current economic and financial challenges it faces in such a way that it does not negatively affect its increasing national and international reputation as an exceptional place to learn and work.

8. While the university must assume risks in support of its mandate as an internationally recognized research-intensive institution, it must also promote appropriate risk management plans and strategies that develop responsive attitudes and behaviour at all levels of the organization in order to maintain a healthy and safe environment for all.

9. All students who attends the U of A arrive with unique expectations, abilities, talents, experiences, and level of maturity. The university must strive to ensure that students have the best possible opportunity to reach their potential, however that may be measured or defined. If our students do not develop their academic or personal potential, the university will fail to achieve its mission.

Through its integrated enterprise risk management framework, the university will monitor, manage, and mitigate these and other emerging risks in an effort to avoid substantial impact on the university's ability to fulfil its strategic objectives.

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EXECUTIVE SUMMARY

In periods of uncertainty and change, a bold vision for the future is essential. The University of Alberta has such a vision: to be one of the world's top public universities for the public good. This vision is tied to the future—a knowledge-based, innovation-fuelled future characterized by blurred international boundaries, intensified economic competition, and urgent global challenges.

Yet, this vision is also rooted in the history and traditions of the U of A, especially our continued commitment to President Henry Marshall Tory's founding promise that the university will strive for the uplifting of the whole people.

The province of Alberta, too, has a vision: to forge a stable, diversified economic system defined by creative leaders and visionaries, in both the public and private sectors, who connect the province to the world at large. It seeks an educated and skilled workforce. It needs a collaborative, cutting-edge research community, and an effective, innovative health system.

As it stands at the crossroads of its future, the province of Alberta needs what the U of A delivers.

High-quality teaching, learning, and research at the university equips students with the knowledge and tools to be active and engaged citizens, leaders, and entrepreneurs. Indeed, graduates of the U of A drive innovation and change in all sectors of society. They advance Alberta throughout the world—and most of them do so from right here in the province. Seventy-seven per cent of all U of A alumni stay, find employment, and create businesses in Alberta. How significant is their impact? The U of A added $12.3 billion to the provincial economy in 2009-2010 alone, according to a recent economic impact study conducted by business professors Anthony Briggs and Jennifer Jennings. That is equivalent to approximately five per cent of Alberta's gross domestic product.

In the last decade, boosted by strong provincial investment in capital and operating budgets, the U of A's national and international reputation has consistently risen. In fact, the U of A is the only university in the province with the depth and breadth of research and teaching capacity, and reputation for excellence, to become a leader in Canada's post-secondary scene and a top public university in the world.

What does this mean for the province? The University of Alberta:

- Connects Alberta to the world and the world to Alberta, by attracting and retaining world-class talent;
- Fuels positive economic and social change, innovation, diversification, and growth in Alberta, by supplying highly skilled, talented human capital and sophisticated, high-quality research and development capacity;

- Elevates the province's national and global profile by building top-level international partnerships and by transferring made-in-Alberta ideas and innovations to the global community and marketplace; and

- Draws attention to Alberta's strengths as its alumni have an impact throughout Alberta, across Canada, and around the world through their leadership and accomplishments.

As nations throughout the world recognize the critical need for strong educational systems in today's economy, Alberta cannot become complacent. The U of A recognizes that the Government of Alberta is facing significant financial challenges due to decreasing resource revenues. Faced with these challenges, the province is striving to make decisions that will lead to economic diversification, beneficial social outcomes, and ultimately, to prosperity, in its fullest sense, for Alberta.

Countries around the world, faced with similar financial constraints, are choosing to invest in education and research. They are choosing to invest in their flagship research universities differently than other institutions in their public systems. Taking a differential approach, they are supporting and leveraging the vital role that world-class research institutions play in advancing a region's economy and enhancing its competiveness. They recognize graduate students' critical role in creating a vibrant economic ecosystem and are meeting the unique costs associated with supporting internationally competitive research environments.

Alberta can do the same. The opportunity now exists to realign the current financial model so that the U of A can continue to build on existing areas of excellence, further enhance the province's profile, attract higher levels of funding from external partners, and most importantly, allow the provincial government to reap the benefits of a growing and diversified economy and Alberta's enhanced international competitiveness.

If the province chooses not to advance in this direction, and does not significantly change the current funding model, the U of A will have to make significant decisions to manage an inevitable shrinking of the academy. The university will not continue with across-the-board reallocations, which have now begun to affect the viability of the entire organization. Instead, the university will take major steps to strategically realign its operations to reflect new financial realities, and invest in its strategic strengths going forward.

We have already begun to envision the U of A of the future. Our aim is to be visionary and strategic, to keep pace with trends now underway in the world's most highly regarded and forward-thinking institutions, and to think boldly about new ways we can build on our strengths and enhance our reputation for excellence and quality in both teaching and research.

Environmental Scan: Setting the Stage

In order to be competitive within an increasingly interconnected world, Alberta must attract and develop top talent: innovative leaders and visionaries in both the public and private sectors who can engage with the best in the world to advance the province as a global leader. Alberta needs to attract and nurture people with the skills and capacities to build an energetic, innovative and entrepreneurial society, characterized by a thriving creative culture. As Alberta's 2012 Strategic Plan states, "education and innovation will be the key to how Alberta grows and changes to meet the challenges of a rapidly developing world. We will need an educated, skilled workforce and a collaborative, cutting-edge research community to develop the resources we are fortunate to have, as well as to diversify into new and exciting industries."

Alberta is home to enviable natural resource wealth. Its economy has fared better than most during the recent years of global economic turndown. However, like many regions throughout the world, the province now faces difficult choices, as a result of a slower-than-anticipated global economic recovery and correspondingly low resource revenues. The path towards greater economic stability for the province will be paved by talent, new knowledge, and innovation, leading to a forward-looking, vibrant, and diverse economic ecosystem. A strong commitment to consistent, adequate, long-term funding for post-secondary education and innovation is essential to reaching that goal and securing Albertans' prosperity long into the future.

Founded by the first act of Alberta's legislative assemby, and now the oldest and largest university in the province, the University of Alberta is the province's flagship institution and key partner in achieving the goal of a diversified, knowledge-driven, next-generation economy. With its established and growing international reputation for excellence in research and teaching, the U of A attracts and develops talent that will help to fulfil the province's future potential for economic and social leadership and prosperity.

The U of A graduates more than 9,300 students per year, many in high-demand areas such as engineering and health services, two areas recently identified as having skilled labour shortages in Canada. With the knowledge and skills gained through intensive study, hands-on learning, and immersion in cutting-edge research, U of A graduates add benefits to their communities that accumulate for decades. Each graduate brings advanced expertise and leadership to various sectors of the economy and society, resulting in greater health and wellness, improved educational outcomes, and enriched cultural organizations, as well as new businesses and community organizations, innovations in existing enterprises and public policy, and expanded international engagement and investment.

The long-term benefits of investments in post-secondary education are indisputable. However, in order to keep—and advance—Alberta's global position, the risks to the province's competitiveness and productivity must be addressed:

1. Low levels of participation in post-secondary education among 18- to 24-year-olds.

2. Lower than average levels of Aboriginal and rural population participation rates in post-secondary education, a risk compounded by the fact that the fastest-growing segment of Alberta's population is Aboriginal.

3. Low completion rate of bachelor's degrees.

4. An aging population leading to a decline of skilled labour in the workforce.

5. Low numbers of international students being attracted to Alberta.

To help the province ameliorate these challenges, the U of A has developed several strategies and initiatives to build much-needed human capital. These begin with the recruitment and retention of high-calibre individuals—undergraduate and graduate students, post-doctoral fellows, professors and staff—including increasing numbers from other countries, rural areas, and Aboriginal communities.

Human capital in the 21st century is highly mobile: people move from one province or country to another to live and work, transferring knowledge between geographical regions and developing new ideas, innovations, and solutions in the process. If Alberta effectively leverages these people connections to create knowledge transfer, it will increase competitiveness, secure economic prosperity, and advance Alberta's position in the global economy.

Attracting international students, educating graduate students, and nurturing the early careers of post-doctoral fellows are three essential strategies for building research, innovation, and highly skilled labour in a knowledge-based economy. The economic impact of international students alone should not be underestimated. According to a report from Statistics Canada published in 2012, international students spent more than $8 billion on educational services in Canada in 2010 alone; Alberta's share of that revenue was almost $487 million. Graduate students and post-doctoral fellows are indispensable to the advancement of research and innovation, providing the highly skilled labour needed to power vibrant research teams and clusters. In addition, a rich, diverse graduate education learning environment becomes a magnet for attracting more talent, further research funding, and new partnerships; undergraduates also benefit from this idea-rich creative learning experience.

Within Alberta's efficient six-sector model, the U of A and the other comprehensive academic and research institutions (CARIs) are the key to sustaining and improving Alberta's global competitiveness through graduate education and research. Institutions in the province's other five post-secondary sectors also meet important provincial aims for providing broad access and diverse educational options to students of varying needs, backgrounds, locations, and skills. This differentiation of roles within Campus Alberta's six-sector model reflects a growing trend in post-secondary systems throughout the world.

Many nations are aligning their resources to better compete within the global marketplace. Despite the economic downturn of 2008, and continued economic turbulence worldwide, these countries have continued to invest in education, research and development, and innovation at the heart of their political agendas. An essential part of the investment plan has been to differentiate sectors within national post-secondary education systems and, further, to designate a small percentage of the institutions within that system to become the centres of research and education excellence needed to attract talent and funding and to excel on the global stage.

China, for example, has targeted a comparatively small group of about 39 institutions as "lead" institutions within its large system. These institutions have more graduate students than undergraduate students and receive funding from both the national and local governments in recognition of the high cost of competing on the world stage. These costs include competing for the best researchers, funding the high cost of major research (including facilities, equipment, and technicians), and building essential infrastructure such as libraries. With this focused, differentiated support, these "lead" institutions have rapidly grown in research excellence, attracting some of the top talent from within China and around the world.

Aside from strategic investments in education, research and development, nations worldwide also are aggressively pursuing international collaborations that allow them to leverage their own strengths in partnerships with centres of excellence elsewhere. These investments and linkages will increase by necessity as competition in the global arena comes from both traditional and new, emerging economic powerhouses.

At the U of A, the overall aim of such partnerships is to facilitate research and teaching with international impact and influence, and showcase our capacity to be leaders in the search for solutions to global challenges. Alberta needs and deserves the benefits that a globally recognized institution brings to its citizens, who move internationally, and its industries, which engage globally. Alberta's ability to capitalize on strategic opportunities, find effective solutions to issues of provincial interest, and provide leadership in areas of international importance is directly linked to this university's ability to attract the world's best, to partner with global innovators, and to engage at the highest levels on the international stage.

A global university is not just a competitor on the international stage. It is a contributor to, and a leader in, the global community. The most critical risks and challenges in the world today —such as climate change, resource scarcity, food security, disease, and armed conflict—are not confined within national borders and cannot be addressed by individual nations. The solutions to these challenges require collective, international efforts across economic, political, academic, and business sectors. Alberta and the U of A are in a position to lead—especially in areas such as energy, water, food security, and health. Now is the time to invest in talent, knowledge, and innovation—for the benefit of Alberta, Canada, and the world.

The Academy

The University of Alberta will continue to invest in ways that are aligned with its mandate and position as the province's flagship university. These investments are guided by two principles. The first is the U of A's commitment to excellence in the people that define its academy and in the environment and opportunities we provide them to conduct the highest quality learning, teaching, innovation, discovery, and creative activities. The second is our commitment to growing and developing that excellence, impact, influence, and leadership in areas that span all domains of human inquiry.

These principles direct strategies for advancing the U of A's academic priorities:

- Achieving the balance of high-quality professors, post-doctoral trainees, graduate students and undergraduate students within the academy that facilitates exceptional learning, teaching, discovery, and creative activities.

- Producing graduates and trainees who are prepared to think critically, to assume positions of leadership in public and private sectors, to act entrepreneurially, to create cultural and technical innovation, and to be successful in the global marketplace.

- Providing secure information and communications technology infrastructure and systems that support research, creative activities, and digital learning technologies and pedagogies to enhance the on-campus, in-class experience and online learning environments.

- Serving as a valued and innovative leader and partner of other post-secondary institutions as a CARI member of the six-sector Campus Alberta and across Canada in achieving shared academic and organizational aspirations.

- Forming international collaborations that amplify the quality and impact of its teaching and learning, knowledge advancement, innovation, and global citizenship.

- Being among the top public institutions that are internationally recognized for areas of excellence and impact across the breadth of discovery, innovation, and creative activities.

Undergraduate student retention, experience, and success continue to drive our approach to addressing these priorities. The University of Alberta is also engaged in an academy-wide transformation of graduate student education and experience. The purpose of this renewal is to ensure that recruitment, programming, financial support, co-curricular and professional development opportunities, and organizational structures are optimal for attracting, retaining, and graduating internationally competitive Canadian and international scholarship-level students.

The University of Alberta's programming will continue its emphasis on quality and on integration with its research, innovation, and creative activities both within its five campuses and through hands-on learning opportunities with community, public, and private sector partners. There will be continued investment in programs, degrees, and certificates that increase cross-cultural and global readiness skills, study abroad programs, joint degrees with top-tier foreign institutions, and international industrial placement programs. New strategies and investments have been initiated to advance both the development and the use of innovative e-learning capabilities for teaching and learning. The U of A will also continue to develop collaborative articulation programming, to ensure a flexible and diverse array of educational opportunities for undergraduate students.

The U of A will also continue to invest in academic programing for entrepreneurship, increasing its six existing entrepreneurship programs to include a new one targeted at graduate students and post-doctoral fellows across the science, technology, engineering, and mathematics (STEM) disciplines. These programs leverage the U of A's applied research centre on technological entrepreneurship and commercialization planning and assessment; student-centred venture catalyst competitions; entrepreneurship workshops for graduate students and post-doctoral fellows; and industry collaboration programs through TEC Edmonton and other partners.

Like other top public research institutions in North America, the U of A continues to place a high institutional priority on international engagement and activities that amplify the quality and impact of its teaching and learning, knowledge advancement, innovation, and global citizenship. The University of Alberta's internationalization strategy permeates the entire academic enterprise and includes strategies and investments to enhance international undergraduate and graduate student recruitment, retention, and success; to develop cross-cultural, global readiness teaching and learning programs and research capacity; to create study abroad and international internship opportunities for Alberta students; to pursue international research consortia and partnerships that can also be leveraged to create distinctive learning and teaching opportunities; and to join international efforts to address complex scientific questions and to develop solutions to current and future challenges.

Outcomes of this strategy include increased foreign research revenue; international projects that connect Alberta and Canadian companies with foreign jurisdictions and potential partners; increased number of joint degree and shared credential programs with top foreign universities; and foreign internship opportunities for Alberta students. These outcomes have emerged from the U of A's long and careful cultivation of its international name recognition as a university with the kind of research, teaching, and learning capacity that interests the top institutions in China, Germany, Brazil, and India. The U of A will continue to pursue carefully selected international initiatives that advance the broadest range of its institutional objectives and contribute to its continued success within the new global environment.

In keeping with a public university of its size, stature, and mandate, the U of A engages in research and creative activities across all domains of human endeavour. Advances, insights, and impact increasingly span traditional disciplinary units and boundaries. For this reason, the University of Alberta will continue to sustain and develop areas of excellence and impact within each of the following broad themes: *Humanities and Fine Arts; Social Structures and Systems; Science and Technology; Energy; Environment; Food and Bioresources;* and *Health and Wellness*. The U of A evaluates its impact through benchmark comparison with highly regarded Canadian and U.S. public research institutions, and through the contributions our professoriate makes to national and international consultations on policy, legislation, and culture. Our continued commitment to this full spectrum of inquiry positions the U of A to make the comprehensive, cross-disciplinary contributions towards the scientific, social, and cultural innovations needed to support Alberta's key objectives and outcomes for its citizens: effective resource and environmental management, a broadened economic base, and resilient and healthy individuals and communities.

Capital Plan

Over the past 10 years, the University of Alberta has undergone tremendous growth. Total student enrolment has increased 20 per cent, fulfilling access goals of both the province and the university. Graduate student enrolment has nearly doubled. During the same period, there has been a concomitant increase in research productivity and international profile and reputation.

In the competitive world of post-secondary education, the U of A must strive to provide consistent, high-quality learning experiences and infrastructure that attracts, retains, and engages outstanding faculty, staff, and students. As the university changes, so must its space needs and requirements. The university has leveraged significant and continued capital funding by proactive planning for the construction of new learning and discovery spaces and the advancement of much-needed reduction in deferred maintenance. The university's ability to quickly respond to funding opportunities and partnerships as they arise is only made possible by actively engaging in planning and design activities that anticipate future needs.

Continued investment for renewal and repurposing, deferred maintenance, and new facilities remains key to the university's ability to meet its own and the province's objectives. With the recent completion of large-scale capital projects, the university now has the opportunity to sustainably maintain, and where appropriate, repurpose aging assets and infrastructure as new funding is made available. As areas and buildings are vacated by programs relocating to newly constructed buildings, smart, forward-thinking planning requires that the university look beyond simple renewal and explore repurposing opportunities. By coupling renewal and backfill projects, the U of A provides a best-value model for creating projects that look toward future operational and academic needs at a reduced capital cost. However, strategic investment in new infrastructure and buildings still remains vital in maintaining the delivery of first-in-class academic programs. To that end, wherever possible, the university will seek opportunities to leverage existing funding, utilize the equity in its current physical assets, and explore various partnerships and project delivery models.

As in previous years, the following Capital Plan endeavours to take a balanced approach in identifying planning, engineering, and construction needs. Going forward, the following five strategic focus areas guide the university's capital planning efforts:

- Ensure that we continue to maintain the condition and functionality of the university's physical assets, which play a critical role in our ability to attract, support, and retain the best students, faculty, and staff.

- Couple backfill requirements with renewal projects to provide a best-value model for capital projects that meets the pedagogical needs of tomorrow's learners and the requirements of researchers in a more cost-effective manner while positively enhancing utilization of our space.

- Fund pre-design services for strategic institutional capital priorities, creating an inventory of projects that can respond to future funding opportunities and be readily implemented through a variety of project delivery models.

- Provide purpose-built, supportive student housing for up to 25 per cent of full-time enrolment to keep pace with U15 peers, enhance completion rates, and ensure accessibility for rural and under-represented Albertan students as well as international students.

- Strategically plan and construct critical new facilities, respecting the varied needs of the university's five campuses as they each serve unique and separate constituencies within Alberta.

Institutional Budget

As are most post-secondary institutions across North America, the University of Alberta is faced with significant financial challenges. Although the university has received critically important financial support from the provincial government through modest increases to the Campus Alberta Grant, these increases, combined with restrictions on tuition revenue, and the new economic reality of low interest rates, have resulted in general revenues increasing at a slower rate than general operating expenditures.

The current Campus Alberta grant funding model does not fully account for the costs that a research-intensive university of U of A's capacity incurs, most notably the investments required to undertake world-leading research and provide leadership in graduate education, while sustaining access to an outstanding undergraduate student experience. As the Government of Alberta moves through its transition to results-based budgeting, the university will also be embarking on a strategic transformation, ensuring that the institution is able to maximize its resources to deliver the outcomes required by the province.

Consolidated Budget

Prepared under Canadian Generally Accepted Accounting Principles (GAAP), the University of Alberta's 2013-14 consolidated budget reflects the entire enterprise of unrestricted and restricted funds. This includes general operations, ancillary operations, research activities, and capital projects. General and ancillary operations are considered unrestricted within the consolidated budget versus research and capital projects, which are considered restricted. The difference between unrestricted and restricted funds is the degree of university control over the use of the funds. All unrestricted funds fall fully within the authority of the Board, whereas restricted funds form part of the consolidated budget but can only be used for the purposes for which funding has been received, primarily research activity and capital construction.

For 2013-14, the budget reflects a shortfall of revenue over expense of $18 million, or one per cent of the university's budgeted consolidated revenue. This includes a 1.5 per cent budget reallocation, which will be applied across the institution for 2013-14. There are three major factors driving this shortfall. The first is the impact of the amortization expense of capital in the unrestricted operating fund. As the university continues to capitalize its new buildings, the associated expense will continue to increase. Although transfers are made to offset the capital expense, the net impact remains where capital expense is higher than the capital transfers driving some of the consolidated deficiency. The second factor is the treatment of endowment income under the new public sector accounting standards. Previously, the university budgeted endowment income based on unrealized gains or losses. Under the new standards, the university can only budget actual revenue not including unrealized gains. For 2013-14 this has resulted in a reduction in budgeted revenue of approximately $10 million. At the same time, the university uses an agreed-to formula for the calculation of the endowment payout, which is based on forecast market returns, protection of the capital, and administrative costs. The net effect under the new standards is that the budgeted revenue is less than the calculated endowment payout adding to the deficiency. Without this accounting adjustment the deficiency would be $8 million. The other primary factor, and one of greater concern, is a structural deficit in the operating fund, driven by general expenditures that are increasing more rapidly than the university's unrestricted revenue.

If the university were to fully balance its 2013-14 consolidated budget, the university would require a budget cut across the institution of approximately four per cent in addition to the 1.5 per cent budget reallocation already factored into the operating fund. The university is acutely aware that this budget deficiency is not sustainable and has initiated the necessary steps to bring the operating fund into balance, which will then carry over into the consolidated budget. However, to avoid the profound impact on the teaching and research environment of immediately reducing operating expenditures, the university will take a balanced approach that is financially responsible while reflecting the ongoing commitment to invest in areas of academic excellence and of strategic priority to the university and the province. The university is finalizing a detailed plan that will identify realistic revenue enhancements and a series of structural changes that will enable the university to bring its budget into balance. The role of government in enabling the university to achieve its plan will be critical.

Key highlights of the university's revenue assumptions include:

- a two per cent increase to the base Campus Alberta Grant;
- modest decline in federal research funding from 2012-13;
- a 2.15 per cent increase to credit tuition fees and a 1.92 per cent increase to mandatory non-instructional fees;
- a continued phased approach to full implementation of market modifier tuition;
- continuation of the non-permanent Common Student Space, Sustainability and Services (CoSSS) fee;
- marginal growth in investment income and modest growth in endowment income due to market conditions;
- continuation of the IMP grant at current levels of $22 million per year.

On the expenditure side, the university's staff agreements extend to 2014-2015 with a negotiated across-the-board increase of 1.65 per cent in each of 2013-2014 and 2014-2015. Both statutory and non-statutory benefits are increasing with non-statutory benefits increasing between 3.5 and 15 per cent. All other expenditures are increasing at the range of two to four per cent.

Highlights of the university's expenditure assumptions include:

- growth in salaries and benefits driven by salary settlements (1.65 per cent ATB and 2.1 per cent merit);
- benefit cost increases ranging from 3.5 to 15 per cent;
- a 1.5 per cent reallocation in the operating budget;
- relatively stable utility expenditures;
- modest growth in scholarships;
- all other expenditures stable or marginally reduced.

The budget challenges that lie before the university are substantive, but so are the opportunities. With a balanced approach, support from the provincial government, a clearly defined plan, and realistic expectations, the university will generate the necessary new revenues, will implement the required structural changes, and will bring the university's consolidated budget into balance going forward.

Resource and Risk Implications

Even as it navigates the current financial storm, the province of Alberta must make strategic, long-term, visionary decisions on how best to support and leverage its flagship university to achieve provincial aspirations. The University of Alberta shares the province's bold vision for a future that is powered by innovation and ingenuity; indeed, the university will be critical to the province's success, and the university looks forward to working with government to advance provincial priorities.

Driven by *Dare to Discover,* the university has identified a series of resource gaps, outlined in the Resource and Risk Implications chapter, that are linked to its responsibility in providing comprehensive and diverse educational choices that prepare Albertans for citizenship in the world and address Alberta's need for undergraduate and graduate alumni who will contribute to the economic, social, and cultural prosperity of tomorrow. These gaps have been identified in a context wherein the university continues to implement strategies to maximize the use of its existing resources. Addressing these resource gaps will facilitate connection to international communities, enable the U of A to undertake world-leading research, and create innovative research agreements that will link researchers, graduate and undergraduate students, international foundations, industry, and government. These resource needs assume the government's commitment to provide two per cent increases to the Campus Alberta grant in both 2013-14 and 2014-15. Resource gaps include investment in the University of Alberta as the province's flagship university, enhancing internationalization, supporting digital learning and information technology, investing in capital infrastructure, and restoring payments from the Access to the Future Fund.

Risk Implications

Like all internationally competitive research-intensive universities, the University of Alberta must deal with a variety of risks that have the potential to hinder its growth and the realization of its vision, mission, and strategic objectives. Many of these risks have been identified throughout this document.

1. The substantive and continuing economic uncertainty, low interest rates, concerns over rising costs of education, government deficits, and a budget model where expenditures are increasing more rapidly than revenue present the university with a series of fundamental budget risks.

2. Enrolment growth must be managed from the perspective of meeting the labour demands of the province and supporting the research mandate of the university. This will require the university striking the right balance of undergraduate to graduate students to position the university as an internationally competitive research-intensive institution.

3. Without the appropriate number of leaders, teachers, researchers, and support staff contributing to their full potential, the university will not be able to provide the quality of the learning experience or participate in world-leading research expected of an internationally competitive research university.

4. For the university to remain relevant to its students and meet the needs and expectations of its faculty to engage in the highest-calibre research, it requires continuous investment in leading-edge IT infrastructure, highly skilled personnel, and support.

5. The continuation of appropriate levels of Infrastructure Maintenance Program funding to avoid a return to increasing levels of deferred maintenance is vital. In addition, limited or no funding of capital for new, expansion, or renewal projects will affect the university's capacity to meet the strategic goals of the institution and negatively affect the economic goals of the province.

6. An institution that aspires to be among the top research-intensive universities in the world can only achieve that goal through the establishment of strategic collaborations and partnerships with an extensive range of stakeholders. The university requires access to and flexibility in funding that would enable it to leverage tens of millions of research dollars from provincial, national, and international sources.

7. In moving towards the vision of being one of the world's great public universities, the University of Alberta's national and international profile will increase. The university must address the current economic and financial challenges it faces in such a way that it does not have a negative impact on its increasing national and international reputation as an exceptional place to learn and work.

8. While the university must assume risks in support of its mandate as an internationally recognized research-intensive institution, it must also promote appropriate risk management plans and strategies that develop responsive attitudes and behaviours at all levels of the organization in order to maintain a healthy and safe environment for all.

Through its integrated enterprise risk management framework, the university will monitor, manage, and mitigate these and other emerging risks in an effort to avoid substantial impact on the university's ability to fulfil its strategic objectives.

Accountability Statement

This Comprehensive Institutional Plan was prepared under the Board's direction in accordance with legislation and associated ministerial guidelines, and in consideration of all policy decisions and material, economic, or fiscal implications of which the Board is aware.

Douglas O. Goss, Q.C.
Chair, University of Alberta Board of Governors

Institutional Context

University of Alberta Mandate

As approved by the Minister of Advanced Education and Technology, July 2009

Created by the *University Act,* 1906, of the Legislative Assembly of the Province of Alberta, the University of Alberta is a board-governed, publicly funded university that operates as a Comprehensive Academic and Research Institution under the authority of Alberta's Post-Secondary Learning Act. Its fundamental mandate is to offer a broad range of outstanding learning and research programs to prepare citizens and leaders who will make a difference. The university plays a leading role in Campus Alberta through collaboration with other Alberta institutions, responding to vital community relationships at every level and giving a national and international voice to Alberta innovation. Its activities enhance student opportunities and build Alberta's capacity for long-term, knowledge-driven sustainable development at the global forefront.

The university provides instructional excellence through both on-campus and distance delivery in a vibrant and supportive learning and research environment. Its residential, multi-campus setting includes many research and field facilities. The university community discovers, disseminates, and applies new knowledge through the following interrelated core activities.

In a dynamic and integrated learning and research environment, the University of Alberta offers graduate and undergraduate students the opportunity to earn internationally respected credentials, including bachelor's, master's and doctoral degrees, and university certificates and diplomas. It also offers French-language programs leading to university degrees, certificates, and diplomas, as well as college certificates and diplomas. A number of its programs are unique within Alberta. Post-doctoral fellows come to the university to refine their teaching, mentoring, and research skills.

The University of Alberta is a balanced academy, with strong arts and sciences programs featuring the faculties of Agricultural, Life and Environmental Sciences, Arts, Augustana, Extension, Native Studies, Physical Education and Recreation, Science, and Campus Saint-Jean. These faculties are foundational to and interlinked with the university's network of strong professional faculties, including Business, Education, Engineering, Graduate Studies and Research, Law, Medicine and Dentistry, Nursing, Pharmacy and Pharmaceutical Sciences, Public Health, and Rehabilitation Medicine. In addition, all of our faculties are involved in professional development and continuing education.

The university establishes and maintains an environment of inquiry-based learning anchored in strong academic programming and an array of co-curricular student life opportunities. Academic support, social/community

enrichment, health and wellness, and career and life development are cornerstones of the University of Alberta student experience. The intellectual and creative diversity of the campus, including its international and multicultural population and exchange programs, makes for an engaging student experience. Fine arts displays, stage performances, museum collections, athletics, and recreational opportunities combine with residence life to present multi-dimensional possibilities. Experiential learning opportunities based in the community augment on-campus activities with real-life applications.

Transfer and collaborative degree completion agreements with partner institutions broaden student opportunities and provide rural, northern, and Aboriginal communities with access to University of Alberta credentials. Similar innovative arrangements centred at the university deliver information and knowledge resources to post-secondary and government communities through both inter-library and online access.

The university's research and creative activities produce a dual impact through the preparation of highly qualified graduates and a continuous flow of innovation. The university attracts scholars of international reputation: undergraduate and graduate students, post-doctoral fellows, staff, and faculty. Collectively, they foster, conduct, and disseminate research and creative activity, both pure and applied, within and across all the major program areas at an internationally recognized level of excellence.

University faculties, centres, and institutes combine resources and talents for collaborative advantage through research partnerships with other academic institutions, business, governments and public agencies. The university actively transfers new knowledge and creative works to Alberta, Canada, and the world for community benefit, including commercial development of intellectual property when appropriate and feasible.

In every aspect of its mandate, the University of Alberta is a partner in social, cultural, and economic development, fostering and establishing the provincial, national, and international connections and understandings that support leading global enterprise and citizenship for Albertans. University administrators, faculty, staff, and students contribute regularly to public debate and to government and corporate examination of issues. Startup companies and new technologies licensed to existing companies lead Alberta in new directions and employ graduates. The university continually moves out into its communities through its graduates, its creative and research advances, and its ongoing opportunities for experiential and lifelong learning.

University of Alberta Vision, Mission, Cornerstones, and Values

The University of Alberta *vision* is to inspire the human spirit through outstanding achievements in learning, discovery, and citizenship in a creative community, building one of the world's great universities for the public good.

Our *mission* is to create and sustain a vibrant and supportive learning environment that discovers, disseminates, and applies new knowledge through teaching and learning, research and creative activity, community involvement, and partnerships. The University of Alberta gives a national and international voice to innovation in our province, taking a lead role in placing Canada at the global forefront.

The U of A aspires to become one of the top public universities in the world by 2020 by focusing academic planning and strategic decision-making on *four cornerstones:*

1. Talented People
2. Learning, Discovery, and Citizenship
3. Connecting Communities
4. Transformative Organization and Support

Our *values:* The U of A community of students, faculty, staff, and alumni rely on shared, deeply held values that guide behaviour and actions. These values are drawn from the principles on which the University of Alberta was founded in 1908 and reflect a dynamic, modern institution of higher learning, leading change nationally and internationally.

Excellence: Excellence in teaching that promotes learning; outstanding research and creative activity that fuel discovery and advance knowledge; and enlightened service that builds citizenship.

Student Experience: The centrality of our students and our responsibility to provide an intellectually superior educational environment.

Integrity and Academic Freedom: Integrity, fairness, and principles of ethical conduct built on the foundation of academic freedom, open inquiry, and the pursuit of truth.

Diversity and Creativity: A diverse, yet inclusive, dynamic collegial community that welcomes change and seizes opportunity with passion and creativity.

Pride: Pride in our history and traditions, including contributions from Aboriginal people and other groups, which enrich and distinguish the university.

Comprehensive Institutional Plan Development

The University of Alberta operates within a four-year integrated planning and budgeting framework. The framework is based on the principles of long-term planning, openness and transparency, comprehensive consultation, accountability through performance tracking, and academic priorities (teaching and research) as the drivers of resource allocation decisions.

The university's Board of Governors approves the university's vision document, *Dare to Discover;* the academic community, through General Faculties Council, approves the current academic plan, *Dare to Deliver 2011–2015*. The preparation of the Comprehensive Institutional Plan (CIP) is based on these two guiding documents as well as the guidelines provided by the Ministry of Enterprise and Advanced Education.

The development of the CIP involved both internal and external consultation for key messages, priorities, and needs. Information from the faculties on the evolution of teaching and research priorities and initiatives, including pan-Albertan and Campus Alberta activities, was solicited in Fall 2012. This information was integrated with other consultations regarding the operating pressures associated with shared research resources and services, and ongoing dialogue on emerging initiatives with local, provincial, national, and international external stakeholders.

The U of A's Office of the Vice-President (University Relations) assumed overall responsibility for the process of preparing the CIP and leading it through review and governance approval process. Once the final CIP is prepared, the entire document is taken through several rounds of briefings and consultations. The U of A's governance processes include the participation of all constituencies (students, alumni, faculty, staff, and general public). The 2013 review process for the CIP involved the President's Executive Committee, General Faculties Council Academic Planning Committee (for information on February 6 and recommendation on February 13), the Board Finance and Property Committee (for information at a joint board committees and Board of Governors meeting on February 8 and for recommendation February 26), the Board Learning and Discovery Committee (for information on November 19, 2012 and for recommendation on February 25, 2013), and the full Board of Governors (for information on February 8 and for approval (withdrawn) on March 15). Detailed briefings of the CIP were presented to these committees, along with motions from the General Faculties Council Academic Planning Committee, the Board Finance and Property Committee and the Board Learning and Discovery Committee to the Board of Governors recommending approval. The Board of Governors is the university's final approving body of the CIP.

The CIP was formally withdrawn from the board agenda on March 15 following the provincial budget announcement and subsequent deadline extension for the CIPs. An addendum to the CIP in response to provincial budget, and the original CIP including clearly marked rescinded sections, were reviewed by the President's Executive Committee, the General Faculties Council Academic Planning Committee (for recommendation on May 22), the Board Finance and Property Committee (for recommendation on May 28), and the Board Learning and Discovery Committee (for recommendation on May 28) and recommended for approval to the Board of Governors. The Board of Governors approved the CIP and addendum June 3.

Upon approval by the Board of Governors, the document is submitted under the signature of the chair to the Minister of Enterprise and Advanced Education.

CAMPUS ALBERTA

The first act passed by Alberta's legislature in 1906 was the University Act, signalling from the very beginning that a strong post-secondary education system would be the foundation of the province's future prosperity and well-being.

Almost 100 years later, with 26 post-secondary institutions well established, the province launched Campus Alberta in 2002 as "a concept, a set of principles and a way in which the learning system works together." The aim? To encourage and support academic and administrative co-operation and collaboration among the institutions while also recognizing and capitalizing on their different, but complementary, roles.

ACADEMIC LEADERSHIP

Since the inception of Campus Alberta, the University of Alberta has demonstrated leadership and service among its provincial peers. Committed to easing the flow of students from one campus to another, and from program to program, Campus Alberta, through the Alberta Council on Admissions and Transfers, now boasts the most effective student transfer program on the continent. To date, the U of A has negotiated more than 5,200 transfer agreements, enabling more than 27,000 students to move from other provincial institutions to the U of A. More than one in four U of A students begin their studies at another institution, while a small number of U of A students move to other Campus Alberta institutions to continue undergraduate studies and pursue graduate and professional programs.

The U of A uses Campus Alberta not only as a vehicle for bringing students to its campuses, but also as a route by which the university can "travel" to students in remote, rural communities, offering them the advantages of research-enriched learning experiences close to home. U of A Libraries, for example, has opened access to an exceptional collection of more than 10 million items to Alberta students through both NEOS, a growing, multi-library consortium headquartered at the U of A, and The Alberta Library, an aggregating service extending to patrons of municipal and small-town libraries. The First Nations Information Connections, which provides electronic access to the U of A's vast digital collections, has also dramatically increased the holdings available to small First Nations colleges. The U of A also hosts the Lois Hole Campus Alberta Digital Library, funded by Alberta Enterprise and Advanced Education, to provide access to digital resources and collections.

Through a number of collaborations and agreements, the university has also enabled rural and Aboriginal students to study in home environments while earning U of A degrees. The benefits are many—not only for the students, but also for rural communities—because many of these collaborative programs prepare students for careers that are in high demand in rural settings.

Examples include the following:

- **2+2 programs:** Students take the first two years at a college and then complete their degrees on campus at the U of A.
- **Collaborative programs:** Students admitted to a Comprehensive Community Institution take the first (typically two) years of a transfer program as a college student, then apply for admission to the U of A and finish the program, earning a U of A degree while never leaving home. The final two years of instruction are delivered by U of A instructors on site at the same institution.
- **Aboriginal Teacher Education Program:** Aboriginal, Métis, and Inuit students earn a U of A Bachelor of Education degree, taking their classes at Portage College in Lac La Biche and Cold Lake, Northern Lakes College in Grouard and Wabasca, and Blue Quills First Nations College in St. Paul.
- **Collaborative Baccalaureate Program in Nursing:** Nursing students (nearly 1,500 to date) study in their home communities and intern at local hospitals while earning a U of A degree, due to collaboration and standardized curriculum between the U of A and Grande Prairie Regional College, Keyano College, and Red Deer College.

As the flagship Campus Alberta Comprehensive Academic and Research Institution (CARI), the U of A develops research partnerships of benefit to the whole system. For example, President Indira Samarasekera proposed and worked collaboratively with CARI partners and the ministry to define and shape the Campus Alberta Innovates Program (CAIP) Chairs. Throughout the joint appointment and identification of research theme processes, Alberta's top research universities co-operated to avoid overlap and maximize the future potential for interdisciplinary and inter-institutional research collaboration.

In addition to the CAIP chairs, the U of A currently holds more than 100 joint research grants that involve Alberta's CARI researchers as partners. U of A researchers are involved in many interdisciplinary and multi-institutional projects on an international, national, and provincial level.

Examples of Campus Alberta research collaborations are:

- The IBM Alberta Centre for Advanced Studies involves both U of A and U of C researchers working together on projects, which include modelling and simulation-based research in health and bio-systems, energy and environmental systems, and others that are aligned with Alberta's economic development needs.
- The Campus Alberta Neuroscience network includes more than 250 researchers from the U of A, U of C, and U of L whose expertise ranges from early brain development to clinical research. Initiated by the academic community across the three founding institutions, this network leverages Alberta's fundamental and translational neuroscience research in areas such as Alzheimer, Huntington, and Parkinson diseases, stroke, and brain damage rehabilitation.
- The Alberta Climate Change Dialogue, led by the U of A and involving multiple Campus Alberta, municipal, provincial, industry, and community partners, studies and tests methods of public engagement and deliberation on the issue of climate change with the aim of determining how to spark evidence-based social and political change, innovations in public policy and governance, and cross-sector understanding and consensus.

ADMINISTRATIVE LEADERSHIP

On the administrative side, the U of A's leadership in Campus Alberta includes providing auditing services, hosting UDigit Systems, managing major capital projects, and establishing provincial standards for research ethics. Due to the breadth and depth of the U of A's administrative expertise—and the sheer size of its operations—the U of A leads in steering collaboration and harmonization within Campus Alberta by building alliances, streamlining operations, managing shared systems and agreements, sharing resources, and providing centralized services.

Facilities and Operations works closely with our post-secondary partners and the ministry, sharing our operating programs and expertise in areas such as hazmat, utilities, fire safety, sustainability, general operations, and reporting. NorQuest College and St. Joseph's College have contracted our expertise in project management services on major new capital projects.

U of A Finance and Administration provides leadership across Campus Alberta in a number of areas.

Examples of administrative leadership include:

- managing provincewide information technology agreements, such as Microsoft licences, PeopleSoft, and learning management systems and software.
- conducting audits for Athabasca University, and sharing audit methodologies with the University of Calgary, University of Lethbridge, Mount Royal, and Grant MacEwan.
- leading the administration of Environmental Health and Safety (EHS), including collecting and disposing of hazardous waste for MacEwan, training safety personnel from both MacEwan and the U of L, and providing ad hoc EHS consulting services to the U of C, U of L, MacEwan, and NAIT.

ENVIRONMENTAL SCAN

Alberta is at a crossroads. During this transformational period, provincial leadership must make tough and visionary decisions to guide Alberta through these economically uncertain times—decisions that will shape our collective future. The University of Alberta will be a critical partner in achieving that future.

The University of Alberta, as the province's leading research-intensive post-secondary institution, is a cornerstone to Alberta's success. It is also a gateway through which Albertans and Alberta industry can access the world and, in turn, a key entry point for global talent and innovation to come to Alberta. In fact, global companies are attracted to Alberta by the research and innovation partnering opportunities presented by the university. With every innovation, every discovery, every global partnership formed, every alumnus working in the international market, the University of Alberta is advancing the global Alberta brand.

Many countries have recognized the imperative for investment in education and innovation. These countries are competing with Alberta, and simply maintaining the status quo here at home will mean falling far behind on the global stage. In order to ensure economic stability and advance growth, Alberta must develop top talent, skilled leaders, and thinkers who will build an energetic, innovative, entrepreneurial, and competitive society. Consistent, adequate, long-term funding for post-secondary education and innovation, specifically with strong support for the flagship institution, is essential to securing Albertans' prosperity long into the future. As Alberta's 2012 Strategic Plan states, "education and innovation will be the key to how Alberta grows and changes to meet the challenges of a rapidly developing world. We will need an educated, skilled workforce and a collaborative, cutting-edge research community to develop the resources we are fortunate to have, as well as to diversify into new and exciting industries."

The Alberta Environment

In 2011, Premier Alison Redford signalled that education would be a priority to her government, saying in her State of Alberta address that "keeping Alberta strong involves investing in our engine of innovation—people. World-class output requires world-class input. Our economy depends on intelligent, capable, and productive people." She noted the need for outstanding post-secondary institutions. She reiterated these arguments in her June 4, 2012 mandate letter to the new cabinet, stating that education and entrepreneurship "are the cornerstones of a dynamic economy." Then, in spite of the difficulties caused by the economic situation, Premier Redford reaffirmed her commitment in her January 2013 address to the province, where she said the government will continue to provide the services of education and health care that Albertans have identified as their priorities. It is significant that the premier made the ministry responsible for higher education in the province also responsible for enterprise. This new structure clearly recognizes the importance of the strong links between higher education and private industry, as well as the impact that higher education has on the province's current and future economy.

The University of Alberta lies at the heart of Alberta's knowledge and innovation enterprise. It graduates more than 9,300 students per year, many of them ready to enter high-demand areas such as engineering and health services, two areas recently identified as having skilled-labour shortages in Canada. With an undergraduate or graduate degree in hand, a University of Alberta graduate adds benefits to his or her community that will accumulate for decades. Each one brings advanced expertise, leadership, and innovation to various sectors of the economy and society, resulting in greater health and wellness, improved educational outcomes, and enriched cultural organizations, as well as new businesses and community organizations, innovations in existing enterprises and public policy, and expanded international engagement and investment.

The impact that the University of Alberta has had—and continues to have—on the province is difficult to quantify. However, in September 2012, the University of Alberta released a study of the economic impact that the university and its alumni have on the province. That document revealed that the university is one of the largest drivers of the provincial economy, with an economic impact of $12.3 billion in the fiscal year 2009-10 alone (approximately five per cent of Alberta's 2009-10 gross domestic product). The study also showed that research at the U of A has a larger effect on the provincial economy than the study's comparator universities have on their respective provincial economies. U of A research over the last 30 years was estimated to have an indirect annual impact of $5.7 billion, higher than that of the University of British Columbia ($5 billion).

DEMOGRAPHIC RISKS

The long-term benefits of investment in post-secondary education generally, and in the University of Alberta particularly, are indisputable. However, in order to keep—and advance—our global position, the following risks to the province's competitiveness and productivity need to be addressed head on:

- Low levels of participation in post-secondary education among 18- to 24-year-olds.
- Low numbers of international students being attracted to Alberta.
- Low number of students participating in graduate and post-doctoral studies.
- Lower levels of Aboriginal population participation rates in post-secondary education.
- An aging population leading to a decline of skilled labour in the workforce.

According to the Organisation for Economic Co-operation and Development (OECD), Alberta's 15-year-olds consistently score among the best in the world in math, science, and reading, and yet, Alberta has one of the highest high school drop-out rates and one of the lowest post-secondary participation rates in Canada. According to the *Campus Alberta Planning Resource 2012*, the post-secondary participation rate of Albertans aged 18–34 was 17.5 per cent in 2011, compared with 26.8 per cent in Quebec, 24.8 per cent in Ontario, and 24.5 per cent in British Columbia. The Canadian average was 23.8 per cent.

Beyond that, there are comparatively low numbers of master's and PhD students enrolled in Alberta. According to data from the Association of Universities and Colleges in Canada and Statistics Canada, 2011 full-time graduate student enrolment per thousand of population in Alberta was at 3.3, compared with 3.9 in Ontario, 4.4 in British Columbia and 5.4 in Quebec.

One of the few populations in Alberta that continues to grow is the Aboriginal population, but Aboriginal post-secondary participation lags behind the wider Alberta population's participation rates. Statistics Canada projects that, by 2017, Alberta will have the second-largest Aboriginal population in Canada, with a large cohort entering the workforce. It is therefore necessary to ensure greater Aboriginal rates of participation in post-secondary education, particularly at the university level. The University of Alberta has several initiatives for the recruitment of Alberta's Aboriginal students and will keep seeking ways to increase enrolments from those important populations.

In addition to the demographic risks associated with younger populations, the *Campus Alberta Planning Resource 2012* also highlights that "the aging population, and a higher percentage of retirement-age Albertans, will mean fewer Albertans able to participate in the workforce."

Clearly, the University of Alberta, along with Campus Alberta partners, has a large role to play in mitigating the demographic risks currently facing the province by attracting, retaining, and preparing talented students from all backgrounds for leadership and success in tomorrow's workforce.

International Students

The attraction of international students will provide one part of the answer to the province's need for human capital for research, innovation, and highly skilled labour in a dynamic economy. The very presence of international students also has a beneficial effect on the economy which should not be underestimated. According to a report from Statistics Canada published in 2012, international students spent more than $8 billion on educational services in Canada in 2010 alone; Alberta's share of that revenue was almost $487 million.

Currently, international students and faculty members are studying and teaching in universities throughout Alberta, but as mentioned above, recruiting and retaining more of

these highly skilled individuals will be critical to realizing the immediate and long-term economic aspirations of the province. In 2011-12, international students accounted for 11 per cent of undergraduate students, 25 per cent of master's students and 40 per cent of doctoral students at the University of Alberta. Having come here for education, many students decide to stay: 60 per cent of Alberta's international students have stated that they will look for work in the province after completing their studies.

According to UNESCO, Canada currently attracts only 2.7 per cent of the 3.6 million students studying abroad, with the United States attracting the lion's share at 19 per cent. Unsurprisingly, China and India are the top two source countries. The *Campus Alberta Planning Resource 2012* shows that, among Alberta institutions, the University of Alberta consistently attracted the largest number of international students in 2010-11, with that number significantly increasing over a three-year period. However, Citizenship and Immigration Canada put that in context, noting that Alberta attracted only five per cent of all international students entering Canada in 2011. This is the fourth-highest number in Canada, below Ontario (42 per cent), British Columbia (30 per cent) and Quebec (15 per cent).

The Government of Canada has recognized the critical need to attract more of the world's best and brightest and, in 2012, convened the Advisory Panel on Canada's International Education Strategy. The panel determined that Canada should accept double the number of international students—at both the undergraduate and the graduate level. The panel also recommended that Canada strengthen its educational brand and expand its global marketing campaign. As it continues to reach out to international students and international research partners, the University of Alberta is strategically improving its global brand and, by extension, Alberta's and Canada's global brands.

Graduate Students and Post-doctoral Fellows

With the changing demographics of Alberta's population and workforce, the attraction and support of graduate students and post-doctoral fellows will be important. Graduate students and post-doctoral fellows are engines of leadership in business, academia and government in Alberta, Canada and the world. These talented people are highly motivated to seek environments that provide the resources they need to make discoveries and innovations, to build businesses, and ultimately, to have the strongest impact possible on the world. Graduate students and post-doctoral fellows are indispensable to the advancement of research and innovation in the province, providing the highly skilled labour needed to power vibrant research teams and clusters. In addition, a rich, diverse graduate education learning environment acts as a magnet for attracting more talent, further research funding, and new partnerships; undergraduates also benefit from learning in this idea-rich creative environment.

To meet the province's needs, the University of Alberta aims to define itself by the quality and strength of its graduate education. This will involve increasing the number of domestic and international graduate students and post-doctoral fellows to globally competitive levels, and will require the maintenance of a top-quality environment including the addition of professors to supervise, train, and engage these young global leaders. Facilities now geared to undergraduates will also have to be adapted for specific graduate and post-doctoral fellow use.

Fostering and sustaining a strong pattern of students participating in graduate studies will help stimulate the creation of a knowledge-driven economy in Alberta. Through their long-standing and powerful global networks, these individuals create informal and formal connections that cross borders. If Alberta effectively leverages these people connections to create knowledge transfer, it will increase competitiveness, secure economic prosperity, and advance Alberta's position in the global economy.

CAMPUS ALBERTA

The differentiation of roles within Campus Alberta's six-sector model is vital to the realization of this vision. As the province's lead comprehensive academic and research institution (CARI), the University of Alberta is the key to sustaining and improving Alberta's global competitiveness, precisely through continued expansion of graduate education and research, and the forging of national and international partnerships. Institutions in the other five sectors also fill important provincial post-secondary aims for providing broad access and diverse educational options to students of varying needs, backgrounds, locations, and skills.

Through several initiatives, the University of Alberta has leveraged government investment in our institution to the benefit of others within the Campus Alberta system. The university plays a leading role in creating and facilitating academic and administrative collaboration with partner institutions; it works together to create opportunities for Aboriginal students and students in rural and remote areas, to share academic and administrative resources and best practices in a cost-effective manner that contributes to system-wide efficiencies, and to leverage economies of scale. Investment in the University of Alberta demonstratively benefits all of Campus Alberta.

As the results-based budgeting process progresses, there will be an opportunity to enhance the Campus Alberta funding model, with clear recognition and support of the important role played by the CARIs, and in particular, the leadership role played by the University of Alberta.

TIGHTENING BUDGETARY ENVIRONMENT

In answer to growing budgetary pressures and Albertans' desire for clear results from government spending, the Government of Alberta enacted the Results-Based Budgeting Act in February 2012. This act began a process wherein government departments and programs are being reviewed to seek efficiencies and identify measurable outcomes. As Minister Doug Horner articulated in his November 12, 2012 Results-Based Budgeting: Report to Albertans, the three-year review is "focused on finding efficiencies, identifying areas for improvement, and ensuring our work is effective and delivers results." Minister Horner identified education as one of the chief priorities in this process, noting that "Albertans have told us they want us to deliver results in priority areas—including health care, education, growing our economy, providing supports for seniors and vulnerable Albertans, and investing in our communities." In discussing revenue shortfalls and budget solutions, Premier Redford told reporters on January 14, 2013, that the current fiscal situation may hasten the results-based review process.

Moving forward in the midst of tough economic times, the decisions made by the province will require important decisions on the part of the University of Alberta regarding how best to fulfil its mandate. The adoption of results-based budgeting presents the province with a brilliant opportunity to evaluate the current post-secondary education and innovation funding model and make the changes necessary for the province and its flagship university to play a significant role on the world stage.

The Canadian Environment

Similar to the province, the federal government is also in the midst of ongoing plans to reduce departmental spending in order to balance its budget over the medium term. To locate savings, a subcommittee chaired by Treasury Board President Tony Clement asked all departments to examine five per cent or 10 per cent spending reductions, with the results announced in Budget 2012: $5.2 billion in savings. The full impact of these funding reductions on departments and agencies of importance to the University of Alberta, some of which are detailed below, have yet to be fully assessed and will continue to be monitored over the coming year and beyond.

The 2012 federal budget provided additional funding to existing research programs, including the three main research granting councils, Canada Foundation for Innovation, and the National Research Council. These investments support the federal government's objective of continuing to lead the G7 in research and innovation funding. The House of Commons Standing Committee on Finance published its pre-budget recommendations in December 2012, which recommended a continuation of this trend in Budget 2013.

TRI-COUNCIL FUNDING

Allocations for the Tri-Council funding (consisting of the Canadian Institutes of Health Research, the Natural Sciences and Engineering Research Council of Canada, and the Social Sciences and Humanities Research Council) have been increasingly focused on federal priorities. The 2009 federal budget allocated $17.5 million for the Social Sciences and Humanities Research Council but required the funds to be used only for business-related projects.

The 2012 federal budget also provided $37 million to Tri-Council agencies but mandated that these funds be used for academic-industry partnerships. The funding of governmental priorities creates a gap in fundamental enquiry-based research funding. Fundamental research, longer term in nature, is necessary and is often the foundation for later, outcome-related projects. These funding trends, combined with the impact of federal budget restraint on the agencies, have created resource challenges for the University of Alberta that should be factored into the provincial planning process.

CANADA FOUNDATION FOR INNOVATION

The goal of the Canada Foundation for Innovation is to ensure that Canada's scientific and innovation infrastructure is on par with that in the rest of the world, while also providing mechanisms for forging meaningful industry-university partnerships. CFI-supported facilities are among Canada's key knowledge exchange venues where discovery research is linked with sector challenges so that resulting innovations occur faster and more effectively. Ideally, the government will continue its commitment to keeping Canada's research facilities among the best in the world with appropriate funding, not only for new facilities but also for their maintenance and renewal. In Budget 2012, the Government of Canada included a commitment for the Canada Foundation for Innovation to receive an additional $500 million over five years starting in 2014.

Maintaining and renewing research and teaching infrastructure, from buildings to equipment, from libraries to information technology, is an ongoing challenge for

the University of Alberta. Though the recent budgetary allocation for the Canadian Foundation for Innovation is welcome, federal funding for advanced research infrastructure has not kept pace with demand, creating a backlog of valuable projects in need of support. In addition, the Natural Sciences and Engineering Council has cancelled several equipment-related funding streams, leaving critical gaps that threaten the viability of current research projects.

INDUSTRY-ACADEMIC PARTNERSHIPS

The federal government strives to encourage business investment in research and development. In October 2010, an expert panel was tasked with evaluating federal research and development programs with a business innovation focus. The review, completed 12 months later, recommended substantial changes to the federal business research and development landscape, including the creation of new agencies and co-ordinating mechanisms and a shift in emphasis away from tax incentives in favour of direct program funding. The panel's report, entitled Innovation Canada: A Call to Action, also urged greater attention to gaps in Canada's innovation ecosystem, such as the lack of large-scale public procurement measures; limited collaborations between business, academia, and government; and Canada's impoverished supply of venture capital. The final report concluded by recommending that the federal government should work with the provinces to stimulate and advance the innovation agenda.

The 2012 federal budget reflected the panel's advice and provided funding for research and development by small and medium-sized companies, promoted linkages and collaborations, and refocused the National Research Council on helping Canadian businesses develop innovative products and services.

An increasing emphasis has been placed on commercialization and industry-oriented research. As Minister of Finance Jim Flaherty stated in an address in September 2011: "In recent years, the Government has emphasized the need to more closely link publicly funded research to business needs and to obtain greater economic and social value from federal funding for research." In remarks to the annual Research Money conference in March of 2012, Minister of State (Science and Technology) Gary Goodyear spoke to this theme as well: "We also need to improve our ability to commercialize research into products and processes that create high-value jobs and economic growth."

Given the federal government's considerable interest in academic-industry partnerships, the University of Alberta's level of success with these types of collaborative projects is a key strength. For example, the University of Alberta currently holds 22 NSERC Industrial Research Chairs, more than any other university in Canada, and it continues to expand its participation in this key program, which assists universities with enhancing their science and engineering capacities in areas of interest to industry.

However, the federal government's increasing shift in the direction of commercialization and industry-driven research will affect the national environment in which the University of Alberta operates, as support for both applied and curiosity-driven "blue-sky" research is required to create the foundation for major, transformative innovations.

NATIONAL RESEARCH COUNCIL

Perhaps the most pronounced example illustrating the federal government's shift towards commercialization is its efforts to reorient the National Research Council to an industry focus. Minister of State Goodyear noted in a speech that "[we] are also making changes at Canada's venerable National Research Council to refocus it back to its original mandate—that of demand-driven business-oriented research to help our private sector develop new products and services." In an interview with the Globe and Mail, the National Research Council's president, John McDougall, pledged to focus the institution's funding in order to obtain better returns for Canadian taxpayers. Budget 2012 also provided $67 million to support the National Research Council's evolution to a "business-led, industry-relevant" focus.

Universities currently conduct a large share of the industry-focused and sponsored research in Canada while simultaneously conducting the majority of enquiry-driven research. The implications of the shift in the NRC's mandate are still not fully clear but could have a wide-ranging impact on the research-intensive university sector by further reducing the resources available to the enquiry-driven research that is proven to be a foundational component of innovation.

INTERNATIONAL ENGAGEMENT

In addition to changes to research funding models, the Government of Canada has also adopted an aggressive trade strategy. Negotiations are currently underway with the European Union and India, and Canada has been invited to participate in the high-profile Trans-Pacific Partnership talks involving eight other nations in the region. When the establishment of the India-Canada Centre for Innovative Multidisciplinary Partnerships to Accelerate Community Transformation and Sustainability (IC-IMPACTS) was announced, Prime Minister Stephen Harper stated that "Canada needs to be connected to an international supply of ideas, research, talent, and technologies in order to prosper in an increasingly competitive global environment." The University of Alberta, in partnership with the University of Toronto and the University of British Columbia, will be co-operatively managing IC-IMPACTS—further proof that the institution is among Canada's leaders in forming international partnerships. The Government of Canada committed more than $13 million to the Canada-India Research Centre of Excellence initiative in the 2011 federal budget.

The Global Environment

Competition within the global context is fierce. The international higher education and research landscape is shifting quickly in the face of growing demand, ongoing economic challenges, changing international demographics and new technologies.

A September 2012 article in the journal Science observed the steadily growing number of Western researchers being drawn to Asia by generous research funding, new scientific challenges, exciting collaboration opportunities, leading-edge facilities, and aggressive recruiting strategies. As noted in a Times Higher Education article from October 2012,"the consensus […] is that emerging market universities, increasingly featured in the World University Rankings, will chip away at the historic dominance of Western universities. An analysis of research funding […] in the West compared with emerging markets"also confirms a shift in the landscape of global higher education.

Globalization and competition present risks for universities such as the U of A, but also enormous opportunities. As a report released by the Council of Canadian Chief Executives in July of 2012 noted,"unprecedented demand for higher education in Asia today offers a multitude of opportunities for Canada, from institutional partnerships to facilitate research, to the recruitment of talented international students and researchers, to new markets for Canadian knowledge exports."

INTERNATIONALIZATION

As the province's flagship institution, the University of Alberta has taken on an ambitious internationalization strategy to strengthen its ability to take advantage of and invest strategically in emerging international opportunities. Internationalization now permeates all aspects of the U of A's core academic mission and activities, enhancing and enriching the quality of teaching, learning, and research through the recruitment of international students, faculty, staff, and researchers; the attraction of key partnerships; and the establishment of the institution as a worldwide hub for research and distinguished scholarly networks. Its approach is focused on targeted regions (China, India, Brazil, Germany, and the United States) in which success in creating international partnerships can match and advance the strategic directions and interests of both Alberta and Canada. Indeed, the University of Alberta provides superb leadership in creating and operationalizing an international strategy that brings the province to the world stage as the university functionally links Alberta private industry partners with global counterparts.

As a result of its targeted approach to internationalization, the University of Alberta has succeeded in developing a number of high-level, collaborative partnerships that not only build on and strengthen existing areas of U of A research excellence, but also create provincial and national

connections with some of the most influential and innovative institutions in world. The following are two examples from 2012:

- The Sino-Canadian Energy and Environment Research and Education Initiative (SCENEREI) is the result of a recently signed agreement with one of the top science and technology universities in China, Tsinghua University.

- The India-Canada Centre for Innovative Multidisciplinary Partnerships to Accelerate Community Transformation and Sustainability, or IC-IMPACTS (mentioned above), brings together scientists and industry partners from the University of Alberta, the University of British Columbia, the University of Toronto and 11 leading institutions in India.

At the University of Alberta, the overall aim of forming international partnerships is to facilitate research and teaching with international impact and influence, and to showcase our capacity to be leaders in the search for solutions to global challenges. Alberta's ability to capitalize on strategic opportunities, find effective solutions to issues of provincial interest, and provide leadership in areas of international importance is directly linked to the university's ability to attract the world's best, to partner with global innovators and to engage at the highest levels on the international stage.

GLOBAL COMPETITORS

Competitive investments made in higher education and research around the world make investment at home ever more critical, especially given the staggering growth of tertiary participation worldwide. University World News reports that the number of students enrolled in higher education is expected to rise from 99.4 million in 2000 to 414.2 million in 2030; the East Asia and Pacific region is expected to have about half of the total enrolments by 2030, a huge shift from its share of 25 per cent of global enrolments in 2000.

OECD statistics show a similar trend. They estimate that by 2020, if current higher education participation rates continue, the number of youth from Argentina, Brazil, China, India, Indonesia, the Russian Federation, Saudi Arabia, and South Africa with a tertiary degree will be almost 40 per cent higher than the number from all OECD countries combined. As a result, Canada's position will continue to erode relative to their growth. According to the Association of Universities and Colleges of Canada, in 2008 university attainment rates for the cohort aged 25 to 34 placed Canada 15th among OECD countries. Thirty years ago, Canada was a leader among OECD countries in university attainment.

In spite of the economic downturn of 2008 and the continued economic turbulence worldwide, countries continue to place education, research, and development at

the heart of their political agendas. They have recognized the critical importance of strategic investment now in order to secure both short-term economic recovery and long-term economic competitiveness in the knowledge economy of the future. To maximize their resources and become globally competitive as quickly as possible, many emerging and rapidly developing economies are avoiding a one-size-fits-all model for their growing national, public post-secondary systems. Instead, they are choosing differentiated models, in which a small percentage of the institutions within the system are designed as leading centres of research and graduate education. These flagship institutions receive differential funding to achieve the kind of results expected of global institutions functioning at the highest competitive level.

China

China's funding for universities reached $12 billion in 2010, with growth of 15 per cent a year. China has surpassed the United States to become the largest post-secondary system in the world. Meanwhile, an estimated $20 billion in purchasing power parity has been spent on building an elite sector in China's PSE sector. The result is that, in the last 16 years, China has quadrupled the number of its tertiary graduates to three million a year while also seeing an 80-fold increase in the number of doctoral degrees in engineering and natural science for this same period. This remarkable change has enabled China to accelerate its economic growth to an unprecedented level, and it is likely to continue. China is graduating immense numbers of highly skilled students in areas that are critical to innovation: science, technology, engineering, and mathematics. Another significant result of China's ongoing investment in higher education is the growing number of world-class researchers attracted to the elite institutions in that country as several public policy initiatives, like the 1,000 Foreign Experts program, draw talent to relocate there.

China has selected a comparatively small group of about 39 institutions that have been targeted for funding and support to act as flagships within the large Chinese system. These institutions are either elite comprehensive institutions like Peking University or specialized like the China Agriculture University. In either case, they have more graduate students than undergraduate students and they receive funding from both the national and local governments in recognition of the high cost of competing on the world stage, including the increasing cost of competing for the best researchers, the high cost of research (including facilities, equipment, and technicians), and the cost of essential infrastructure items like libraries. With this focused support, these flagship institutions have rapidly grown in research excellence, attracting some of the top talent from within China and around the world.

India

India is also aggressively pursuing education and research and development as priority areas. The Indian government has committed to ensuring a tertiary education for 30 per cent of its youth by 2025, up from its current rate of 12 per cent. To meet this ambitious goal, India has sought out partnerships with world leaders in education to increase both the quality and accessibility of its education system. It also increased the budget for higher education for 2010-2015 to nine times the amount of the previous five years. In 2006 and 2007, the Indian government created 10 premier science

and research institutes dedicated to research and teaching in the basic sciences with an aim to become science universities of the highest calibre devoted to both teaching and research.

In addition, India has entered into an agreement with the United Kingdom to establish 14 world-class, research-intensive "innovation universities" in partnership with elite universities such as Oxford and Cambridge. At present, India invests approximately $21 billion into research and development and has committed to increasing the budgets for both higher education and research and development. India is already among the top 10 research countries in the world.

Brazil

Brazil has made significant investments into its higher education sector. Announced in June 2011, the Brazilian Scientific Mobility Program or "Science Without Borders" is an international student exchange program that has allotted $1.7 billion to fund the exchange of 75,000 undergraduate and graduate students and researchers in order to improve Brazil's competitiveness and innovation agenda. An additional 25,000 scholarships will be funded by private industry. The program aims to establish linkages with "excellence" through exchanges and partnerships that will see the best students and researchers from the best universities around the world, and within Brazil, study, instruct, and research reciprocally. Further, in December 2012, the Brazilian government signed a law that will see 100 per cent of all new national oil royalties spent on education—a staggering amount of money—in part to assist Brazil in meeting its target to devote 10 per cent of its GDP to education by 2020. The oil royalties will also be devoted to assisting Brazil to transition to a "post-petroleum" reality by educating the highly skilled individuals it needs to become an innovation powerhouse.

Taiwan

In 2005, Taiwan first announced an investment of $1.6 billion to lay the foundation for the creation of elite universities. The national government is continuing efforts to invest in the expansion of higher education as a key component of its economic competitiveness. The ascension of Taiwan in higher education and research is noteworthy for its successes; education reforms have long been considered one of the critical keys to Taiwan's modernization. According to the World Economic Forum's 2012-13 World Competitiveness Report, Taiwan now ranks 13th in the world—one place above Canada—for its ability to compete because of gains made in research and development infrastructure and talent.

Europe

Investment in higher education and research and development is not limited to the rapidly expanding BRIC (Brazil, Russia, India, and China) economies. As part of the drive to create new growth and jobs, and to secure global competitiveness, the European Union is counting down to the implementation of *Horizon 2020*, which aims to "secure Europe's science and technology base and industrial competitiveness to create new jobs and growth." The program's overall budget will be €80 billion, up from €50.5 billion for its predecessor funding framework, which is known as the Seventh Framework Programme for Research (2007-2013).

Horizon 2020 will run from 2014 to 2020 and will combine all research and innovation funding currently provided through the Framework Programmes for Research and Technical Development, the innovation-related activities of the Competitiveness and Innovation Framework Programme and the European Institute of Innovation and Technology. *Horizon 2020* is a market-driven approach that aims to create a genuine single market for knowledge, research, and innovation, and will create partnerships between the private sector and member states. *Horizon 2020* will be complemented by additional measures to complete and further develop the European Research Area by 2014. These investments come as EU member states face continued and, in some cases, severe economic upheaval. However, the European Commissioner responsible for research innovation and science, Máire Geoghegan-Quinn, has stated that to not invest in innovation fronts now would be "unthinkable."

Germany

In Germany, the national research budget is approximately €55.7 billion, two-thirds of which is provided by industry, one-third by government, and four per cent by foreign investment. The German federal government has adopted a strategy for the internationalization of science and research that includes initiatives for training young researchers, supporting the mobility of researchers, and enhancing the possibilities for international research collaborations. With its reputation for elite higher education and research, it is noteworthy that Germany receives the fifth-largest number of international students. Moreover, Germany currently attracts €11 billion annually in foreign investment. Germany has committed to building on these strengths with continued investments in education and research.

The national Excellence Initiative aims to promote top-level research and to improve the quality of German universities and research institutions in general, thus making Germany a more attractive research location, making it more internationally competitive, and focusing attention on the outstanding achievements of Germany universities and the German scientific community. In the first phase of the project, which ran from 2006 to 2012, €1.9 billion was invested in graduate schools to promote early-career researchers, clusters of excellence to promote top-level research, and institutional strategies to promote top-level university research. In light of the success of the first phase, the program was renewed for a second phase with an allocation of €2.7 billion.

Germany is also expanding capacity in anticipation of burgeoning enrolments. Despite a projected decline of 15 per cent in its 18-to-24 age group by 2020, Germany's federal government has committed €5 billion to accommodate the 275,000 additional entrants expected between 2011 and 2017.

The above examples show that global investment in post-secondary education, research, and innovation is growing. Accompanying that growth is the differentiation and support of a few top institutions within a jurisdiction to act as leaders within the system and as ambassadors to the rest of the world.

NEW EDUCATIONAL TECHNOLOGIES

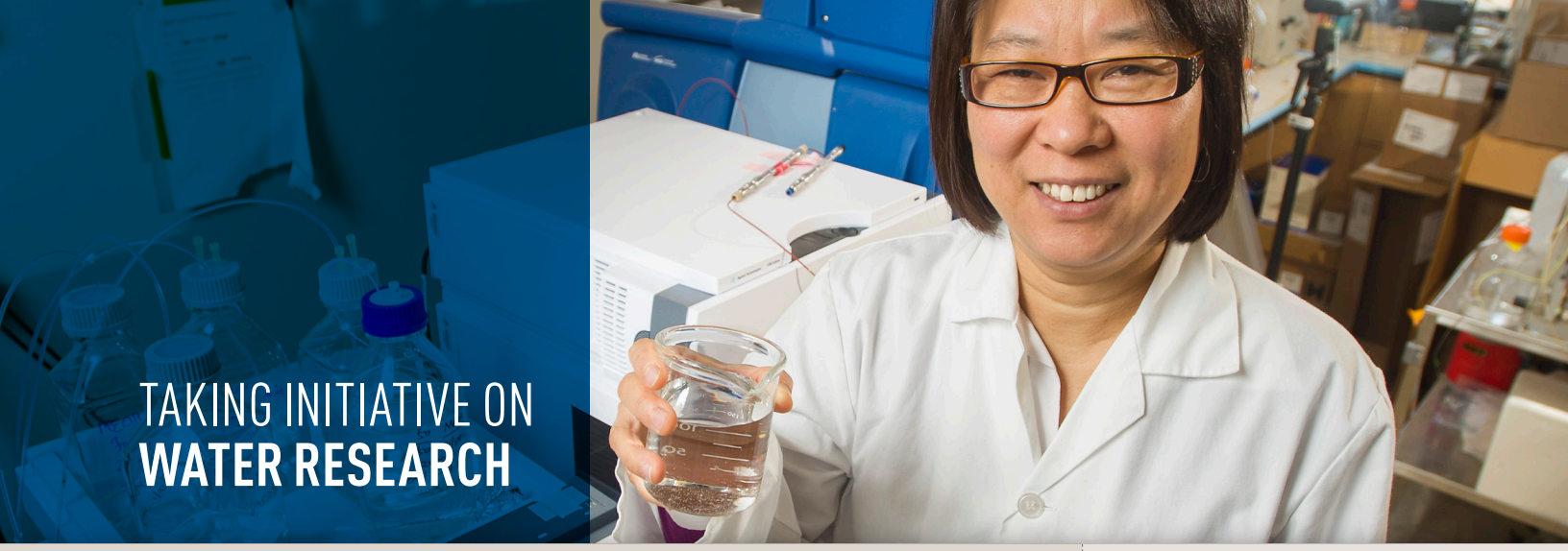
Aside from increased competition worldwide, the global post-secondary education sector is facing the challenge of a changing model for education delivery. New technologies—including massive open online courses, or MOOCs—are shifting the way higher education is delivered and expanding its potential reach. Hundreds of thousands of students all over the world are currently participating in the digitally delivered courses currently offered by some of the most globally prominent universities, including Harvard and Stanford.

The University of Alberta has entered into a memorandum of understanding with one of the leading MOOC providers, Udacity, to form a research partnership. Researchers in the university's Centre for Machine Learning and its Faculty of Education will be working with Udacity to conduct research on online learning technologies. In addition, a pilot project is underway to develop a small number of courses in the Faculty of Science, with the expectation that at least one course can be taken for University of Alberta credit. This initiative sets the university apart from all other Canadian universities.

The full implications of the rise of MOOCs is yet to be determined. However, most players in the higher education sector believe the effects will be far-reaching—perhaps democratizing high-quality higher education, revolutionizing educational delivery formats, improving completion rates, and offering options to improve cost-effectiveness. The University of Alberta will continue to develop and explore new technologies that present both challenges and opportunities for the institution. Although having a MOOC program is a great opportunity to introduce a wider global audience to the brilliant work being conducted at the University of Alberta, the challenge is to establish sustainable revenue models. Being in the vanguard of this important development will allow the university to have first-mover advantages.

Conclusion

A global university is not just a competitor on the international stage; more importantly, it is a contributor to and leader in the global community. International organizations such as the World Economic Forum and the United Nations continue to remind us that many of the most critical risks and challenges we face—such as climate change, resource scarcity, food security, disease, and armed conflict—cannot be defined by national borders or solved by one country alone. These require collective, international efforts across economic, political, academic, and business sectors to find solutions. Alberta and the University of Alberta are in a position to lead. Now is the time to invest in the talent, knowledge, and innovation.



TAKING INITIATIVE ON **WATER RESEARCH**

A DECADE AFTER A TWO-YEAR PERIOD OF SEVERE DROUGHT IN SOUTHERN REGIONS OF THE PROVINCE, THE GOVERNMENT OF ALBERTA LAUNCHED *WATER FOR LIFE: ALBERTA'S STRATEGY FOR SUSTAINABILITY.* IT WAS APPARENT THEN—AND NOW EVEN MORE SO—THAT "A HEALTHY AND SUSTAINABLE WATER SUPPLY" IS FUNDAMENTAL TO ALBERTA'S FUTURE PROSPERITY IN ALL OF ITS ASPECTS.

Aside from the air that we breathe, there is no element so essential to all forms of life and to the development and security of human communities as water.

This is a story that spans the globe. Alberta and the world share complex challenges in ensuring that safe water is readily available to sustain the environment, ensure human health, and support food and energy production. The University of Alberta has the interdisciplinary expertise required to address these problems and has brought together more than 120 researchers under the umbrella of its Water Initiative.

U of A research teams, which include industry partners, have long-standing research collaborations in the area of water usage and treatment. Some of the current work employs nanoscience and engineered biological processes. Other research programs are developing treatments to make water contaminants more biodegradable. Still others are focused on assessing and modelling the effects of water removal on the ecological integrity of Alberta's rivers. All of this work is leading to industrial, technical, and policy innovations, which result in the preservation and renewal of safe water resources as well as the establishment of best practices in water use.

The U of A Water Initiative is founded on the principle that sustainable solutions to provincial, national, and global water challenges will require the integration of scientific, technological, and socio-economic knowledge from multiple disciplines. Through existing and new collaborations with private, public, and not-for-profit partners locally and internationally, the Water Initiative will focus on three challenges: water usage in resource extraction, water quality in non-urban areas, and future water supply for food production.

OUTCOMES AND OPPORTUNITIES:

- Long-standing water quality surveillance and risk assessment research initiatives at the U of A have laid the groundwork for even more targeted assessments of non-urban water quality that can evaluate risk, weigh alternative policy consequences, and measure the impact of technological interventions on small communities or agricultural regions.
- A U of A team has developed unique micro-gels that shrink or swell—and change colour—in the presence of contaminants. Such foundational scientific research work is the first step in developing technologies for simple, real-time detection of certain types of contaminants in oil sands process water.
- Along with IC-IMPACTS partners in India and Canada (see page 61), researchers are working with communities, local governments, industries, and trade organizations in both India and Western Canada to develop water testing and treatment technologies that can be deployed in small communities or even individual households, using, for example, novel electromechanical methods for water filtration membranes and nano-scale separations.
- U of A researchers in environmental economics and natural resource policy are investigating how different water allocation policies manage forecasted shifts in water supply. Other researchers in hydrology, climate change, and remote sensing are integrating multiple factors into models that can help decision-makers assess the economic consequences of alternative fresh water distribution and management policies.

THE ACADEMY

The University of Alberta is recognized not only as one of Canada's leading comprehensive academic and research institutions, but also as one of the top 100 public universities in the world.

Our reputation attracts highly qualified undergraduate and graduate students as well as post-doctoral fellows from Alberta, across Canada, and abroad who are seeking exceptional opportunities that integrate learning, research and creative activities, real-world internships with public and private sector partners, connections with top-tier international institutions, and community engagement. Such opportunities are the hallmark of leading teaching and research-intensive universities like the U of A because they create exceptional leaders and professionals who bring innovation and insight to all sectors of society.

The strength of the U of A is founded first and foremost on the quality and diversity of our people, programming, research, and resources. An exceptional professoriate is the essential foundation for the rigorous and challenging inquiry-based undergraduate education and learning environment to which we are committed, and that only a research-intensive university can produce and evolve. Sustaining our research and teaching capacity is our greatest priority and most urgent need if we are to continue to deliver to our students and the province of Alberta the quality, breadth, and innovative kinds of education and research that are needed to achieve and maintain social well-being and economic prosperity.

Over the past decade, the University of Alberta's five campuses have experienced tremendous growth, which has supported and made possible innovative new programs and stronger connections to communities. These five campuses offer Alberta's students a range of choices for learning within a research-intensive university, from the intimacy of the rural Augustana Campus in Camrose and the French-speaking environment of Campus Saint-Jean to the physical recreation and agricultural research environment of South Campus, the urban vibrancy and integration of Enterprise Square, and the large, dynamic, heavily populated environment of the North Campus. Undergraduate and graduate enrolments have expanded due to provincial investment, and new and repurposed state-of-the-art space for modern forms of education and research has been added. At the same time, more than half of our current professors are new to the university since 2001, and we have been increasingly successful in hiring internationally competitive scholars.

As Alberta's largest comprehensive post-secondary institution, the U of A has a clear mandate to create an excellent teaching and learning environment in academic and professional programs that leverages and produces groundbreaking research, innovation, and creative activity. This environment relies on the quality of the interactions among undergraduate and graduate student populations, domestic and international students, and professors and students. The U of A is committed to advancing knowledge and creating impact across seven broad areas of human inquiry and global challenge: food and bio-resources; energy; environment; health and wellness; humanities and fine arts; science and technologies; and society and culture.

This broad base of excellence has defined Alberta's leading university from its inception and ensures that Alberta has the capacity for today's challenges and opportunities, as well as those that emerge in the future.

The U of A continues to build its strong international reputation for high-quality education and leading-edge research. The internationalization strategy is multi-faceted and permeates the entire academic enterprise. It includes international student recruitment at the undergraduate and graduate levels; study abroad and international internship opportunities for Alberta students; multi-levelled partnerships with top-tier international partners; and leadership participation in major international initiatives that seek to solve pressing global issues. These initiatives expand the institution's and province's teaching, research, and innovation capacity by leveraging our resources with those of other jurisdictions. The U of A is creating a recognizable international brand for itself, which can deliver to the province of Alberta the kind of tangible and intangible benefits that signature public institutions such as University of California, Berkeley and University of Texas, Austin deliver to their respective jurisdictions.

Continuous, innovative evolution and renewal is essential to maintain and enhance the health and vigour of a comprehensive academic and research-intensive university, and only with strong support from the provincial and federal governments will the U of A remain in a strong position to manage the challenges and pressures that it faces during the period of our current academic plan, *Dare to Deliver 2011-2015*. These include:

- Changing demographic trends in the student population;
- Resource constraints that adversely affect the quality of the research and innovation environment available to the existing professoriate, the competitiveness of recruitment offers, and the balance of student and faculty numbers;
- Emergence of new technology that students and professors expect to be integrated into their teaching, learning, and research activities;
- Demands for new programs and research that encompass new forms of learning and knowledge and cross conventional disciplinary borders;
- New structures in federal research funding; and
- Competition for the best students and researchers from increasing numbers of post-secondary institutions around the world.

The university uses these planning choices and areas of investment to advance the following priorities:

- Achieving the balance of high-quality professors, post-doctoral trainees, graduate students and undergraduate students within the academy that facilitates exceptional learning, teaching, discovery, and creative activities;
- Producing graduates and trainees who are prepared to think critically, to assume positions of leadership in public and private sectors, to act entrepreneurially, to create cultural and technical innovation, and to be successful in the global marketplace;
- Providing secure information and communications technology infrastructure and systems that support research, creative activities, and digital learning technologies and pedagogies to enhance the on-campus, in-class experience and online learning environments;
- Serving as a valued and innovative leader and partner of other post-secondary institutions as a CARI member of the six-sector Campus Alberta and across Canada in achieving shared academic and organizational aspirations;
- Forming international collaborations that create exceptional learning, discovery, citizenship, and innovation opportunities, advancing its vision to be one of the world's top publicly funded institutions;
- Being among the top public institutions that are internationally recognized for areas of excellence and impact across the breadth of discovery, innovation, and creative activities.

To achieve and maintain the quality and success for which the U of A strives, the academic programming and research enterprise must remain deeply and solidly grounded in and matched by essential new or enhanced core physical facilities, sophisticated information technology, and extraordinary knowledge resources.

Access and Enrolment

PRIORITY: The University of Alberta's academy has the balance of professors, post-doctoral trainees, graduate students, and undergraduate students necessary for exceptional learning, teaching, discovery, and creative activities.

Talented People

The U of A aims to provide enriched and transformative student experiences, resulting in graduates who are engaged citizens prepared to contribute to the social and economic well-being of the province, the nation, and the world. The U of A recruits and graduates undergraduate and graduate students from a diverse demographic:

- high school and post-secondary graduates from Alberta, Canada, and abroad;
- transfer students from Alberta's Comprehensive Academic and Research Institution (CARI) sector as well as institutions in other Campus Alberta sectors;
- francophone and francophile students seeking a post-secondary degree or diploma in a French-language or bilingual learning environment;
- mature students seeking a university education for the first time and those returning for advanced study;
- First Nations, Métis and Inuit students from urban, rural, and Aboriginal communities;
- students seeking a rural-based education or employment following graduation;
- students who are immigrants or from immigrant families;
- students from socio-economic groups for whom university access is a financial challenge;
- students who are the first in their family to attend university.

Among this diverse array of undergraduate and graduate students are some of Canada's most accomplished and promising minds. U of A students have consistently won Canada's most prestigious scholarships, including 68 Rhodes Scholarships since 1913 (the third most among Canadian universities), 47 Vanier Scholarships since 2009, and eight Trudeau Scholarships since 2004, while student athletes have won 61 national championships since the inception of Canadian Interuniversity Sport.

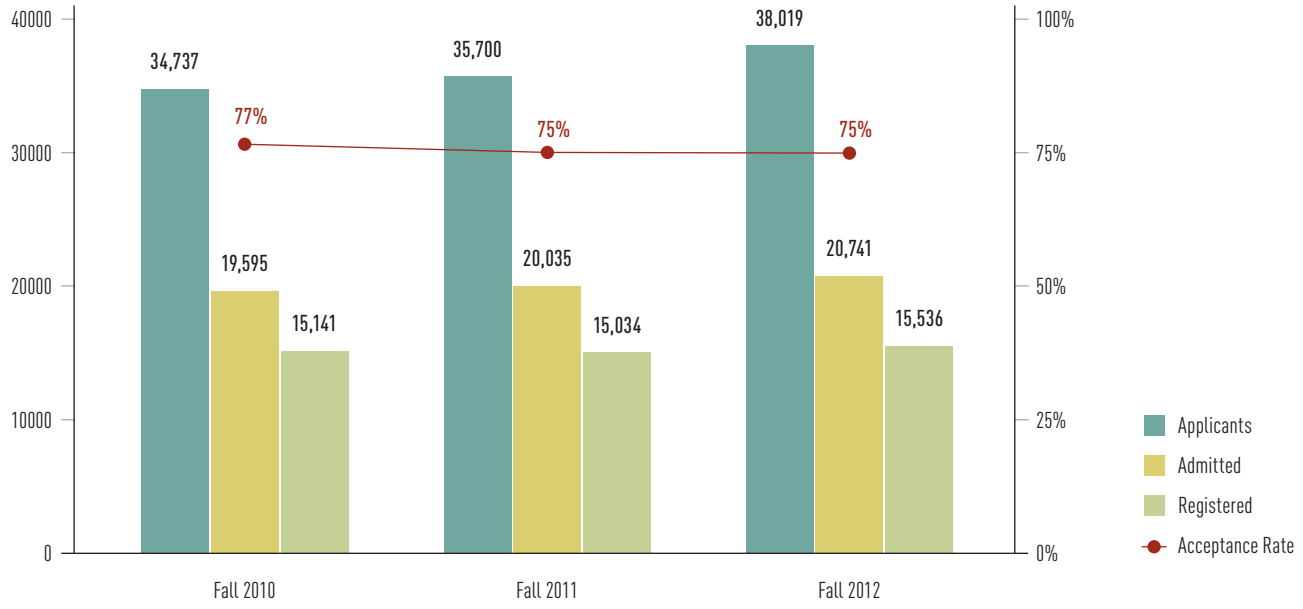
The U of A also recruits and trains highly qualified post-doctoral fellows from around the world. They are attracted to the province and the U of A by its outstanding research achievements, and opportunities to actively participate in knowledge creation and translation as a way of contributing to the well-being of the global community. They also choose the U of A because of the professoriate and the mentorship available here.

U of A professors are as diverse as the student population they teach. More than half of U of A faculty members have been recruited over the past 10 years from top universities in Canada, North America, and around the world. Whether new or established in their academic careers, these professors fit a 21st-century, globally connected, entrepreneurial, and technologically savvy profile. In choosing the U of A, they have joined an internationally recognized professoriate whose exceptional teaching and research strengths are routinely affirmed and celebrated through national and international awards and honours. In 2012, four of 10 annual 3M National Teaching Fellowships

for excellence in undergraduate teaching were awarded to U of A professors. This brings the U of A's total number of 3M laureates to 38 since the founding of the award, the highest number in Canada and well ahead of second-ranked University of Western Ontario with 22. The continuing recognition of U of A faculty with this award reflects the commitment of the professoriate to providing an exceptional undergraduate learning experience within a research-intensive environment.

The University of Alberta uses a number of measures to assess the quality and effectiveness of its access, enrolment, and programming initiatives. These measures and the university's strategies for improvement are provided at the end of this chapter, along with examples of specific outcomes achieved within faculties and professional schools since the 2012 CIP. The following sections present institutional-level considerations and notable achievements.

FIGURE 1 APPLICATIONS AND ADMISSIONS



Notes: The numbers reported reflect unique individuals. The acceptance rate is the proportion of those admitted who registered. Data are as of October 4 of the reported year. **Source:** PeopleSoft Production database (Admissions statistics October 1st Archive).

Access and Enrolment Projections and Plans

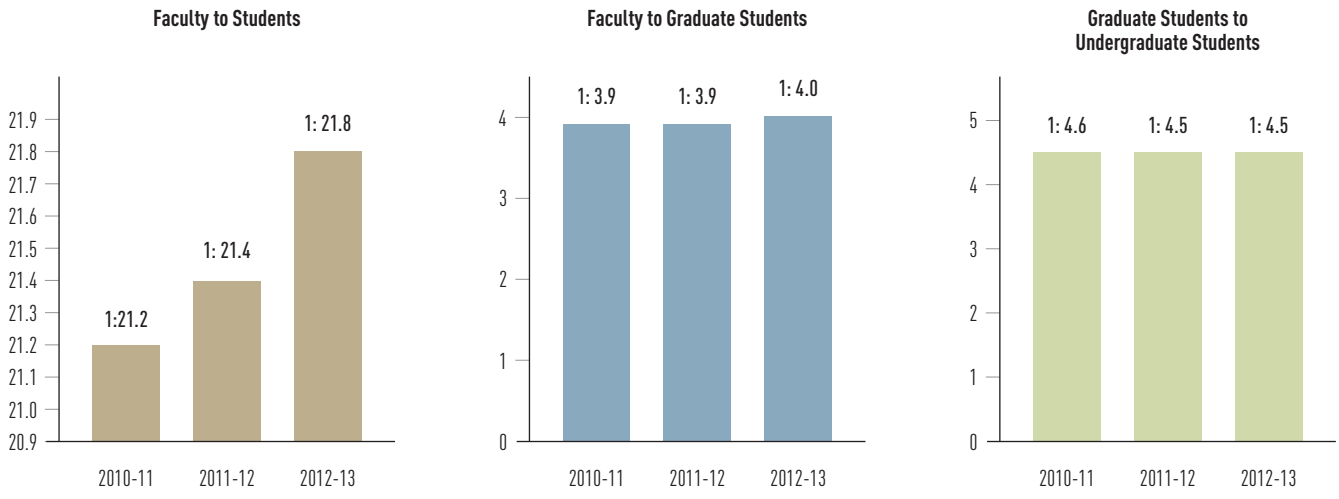
Since 2010, applications to U of A programs have increased by 3,282 or nine per cent. With a steady acceptance rate of 75 per cent and registration rate of 39 per cent, the headcount enrolment has grown from 38,241 in 2010 to 39,459 in 2012.

Access to programs at the U of A is adjusted in response to student demand and workforce needs. The Bachelor of Education program, for example, was expanded in Fall 2012 to allow direct entry to the program in year one, rather than in year two following a year of study in another foundational program such as sciences or arts. Demand was such that the target enrolment was met immediately. Managing enrolment through 2016-17 is expected to be a challenge for the direct entry programs, particularly in faculties with STEM programs, because of student demand. Despite setting increasingly higher high school completion averages and transfer GPAs, exceptionally strong demand for BSc programs in the faculties of Physical Education and Recreation, Engineering, and Science led to above-target enrolments in Fall 2012. The U of A has a fixed capacity to deliver a quality teaching and learning experience; it will continue to use admission standards to balance the pressure of student demand with the ability to deliver this experience within a research-intensive environment.

Quality teaching and learning experiences are fundamentally based on students' access to and interaction with professors and graduate students. Top universities in North America and around the world strive to achieve three critical minimum target enrolment ratios:

- 1:16 faculty member to overall student number
- 1:4 faculty member to graduate student
- 1:3 graduate student to undergraduate student

FIGURE 2 FULL-TIME EQUIVALENT (FTE) RATIOS, 2009-10 TO 2011-12



Notes: All student data is based on information in effect on December 1 of the reported year. Post-graduate medical education students are excluded. FTE (full-time equivalent) represents the number of full-time students plus one-third the number of part-time students, and is based on the number of individual students within each reporting category. Staff data is based on information in effect on October 1 of the reported year. 2012 data are preliminary. **Sources:** Student enrolments based on Acorn Data Warehouse. Faculty counts based on U of A Human Resources data as reported in staff census extracts from PeopleSoft for indicated years as calculated by Strategic Analysis Office, (previously from UCASS extracts, which have been discontinued by Stats Canada).

When achieved, these ratios lead to a qualitatively different educational environment, especially for undergraduate students who are exposed to and integrated into a cross-disciplinary, cross-professional research culture, composed of scholarly teams of graduate students, post-doctoral fellows, faculty, and industrial partners.

To further improve teaching and research quality and productivity at the U of A, as well as enhance student learning experience, professor to student and undergraduate to graduate student ratios must become far more competitive on national and international levels.

To achieve the ideal ratios mentioned above and reap the resulting benefits, the University of Alberta plans to continue to differentially increase the number of graduate students and grow the complement of professors.

The University of Alberta's current, post-EPE institutional benchmark for access is 32,798 FLEs. This benchmark will be maintained through 2016-17. It is composed of:

- the funding benchmark established with the Government of Alberta in June 2003 when a one-time adjustment to the base grant was made to ensure that all student spaces were funded from that point onward, plus
- funding to support additional enrolment with the merging of Augustana Campus in 2004, plus
- all ACCESS and EPE funded enrolment to 2008-09, plus
- the modified rate of increase in incremental FLEs from 2009-10 to 2013-14 following cessation of the EPE program in 2009.

Based on the above calculation, individual faculty and program enrolment FLE targets were adjusted in 2010-11, 2011-12, and 2012-13.

Using 2004-05 as the base year, the U of A has been gradually increasing the numbers of graduate students and medical students differentially, while maintaining the undergraduate population. That is, between 2004-05 and 2011-12, graduate student enrolment was increased by 44 per cent (from 4,900 to 7,068 FLEs) and medical enrolment by 52 per cent (from 505 to 766 FLEs). By reallocating FLEs from undergraduate to graduate programs within the current benchmark through to 2016-17, the U of A will not only be able to improve the undergraduate to graduate student ratio, but also to continue to encourage and accommodate new programming. See Appendix 1 for five-year planned and projected enrolment targets.

In the health sciences disciplines specifically, steady state enrolment is predicted until 2014 with minor changes each year for additional health graduates who are or may be funded. The graduate targets in the Health Workforce Action Plan for nursing and medicine will remain in place through 2013-14, with the exception of graduate programs in physical and occupational therapy. New base funding is needed to support existing soft-funded physical therapy pilot programs at Augustana Campus and the U of A's Calgary Centre; funding is also needed to expand the occupational therapy program into Calgary. Proposals related to these two programs were submitted to the Ministry of Enterprise and Advanced Education in November 2012. The last intake of students for the current physical therapy satellite programs will take place in September 2013 with graduates in 2015-16. These programs now have 10 students in each cohort, but given current demand, numbers could be expanded. There is also demand for the U of A to offer the occupational therapy program in Calgary; to do so would require the same resourcing as the physical therapy program for setup.

The U of A aims for an average variance of about 1.5 per cent in meeting benchmark enrolment targets. Over the past three years (2009-2012), enrolment has averaged 1.63 per cent above target. This is attributable to variances in applications and enrolment due to factors such as fluctuations in student and market demands; expansion and contraction of program choice within the university and across Campus Alberta; and new, improved, or deteriorating quality of facilities. In 2011-12 and 2012-13, for example, demand for enrolment in most Bachelor of Arts programs as well as professional post-baccalaureate programs remained steady and at or slightly above enrolment targets. At the same time, demand for Bachelor of Sciences programs in all faculties offering science, technology, engineering, and math (STEM) programs rose considerably, especially in the Faculty of Science on North Campus with the opening of the state-of-the-art Centennial Centre for Interdisciplinary Science, and especially among third-year transfer students. Similarly, demand for the BSc in the Faculty of Nursing also rose dramatically in Fall 2012, following the opening of the Edmonton Clinic Health Academy in 2011. In contrast, while demand for the BSc is also growing at Augustana Campus and Campus Saint-Jean, aging science classroom and lab facilities impedes the recruitment of students at those campuses into science programs.

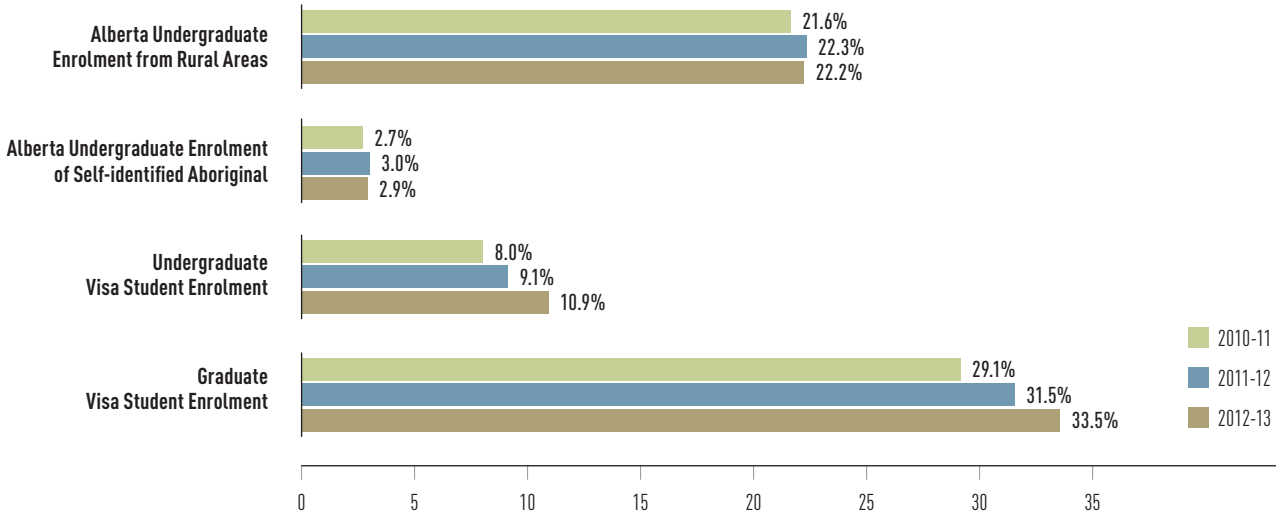
Aboriginal, rural and francophone enrolment

The University of Alberta stands respectfully on lands once known only by Aboriginal people and has a particular commitment and responsibility to Alberta's Aboriginal people. *Dare to Deliver 2011-2015* commits to celebrating diverse Aboriginal histories and cultures throughout the physical, virtual, ceremonial, and intellectual space of the university. As one of the first institutions founded by the new province of Alberta in 1908, the U of A also takes seriously its responsibility to support and participate in the social and economic lives of rural Albertans, and offers outstanding educational opportunities to students in a rural environment as well as leading-edge research on important rural issues. The U of A also offers francophone Albertans, western Canadians, and international students a liberal arts undergraduate education in French at Campus Saint-Jean, located in and an integral part of Edmonton's francophone community.

Aboriginal, rural, and francophone students bring knowledge and insights that inform and expand the U of A's teaching, learning, and research activities. The University of Alberta invests resources in a number of initiatives to increase the representation of these students on our campuses:

Aboriginal students. The University of Alberta hosts the only Faculty of Native Studies in Canada, established in 2006. In 2008, the U of A adopted an institutional objective to be Canada's leading institution for Aboriginal post-secondary engagement, education, and research. To reach this goal, the U of A invests in initiatives that advance both Aboriginal recruitment and the distinct elements that define social well-being within Aboriginal communities and regions. These initiatives are integrated into the full range of institutional activities, from education and training programs to collaborative research centres and institutional-level partnerships and agreements.

FIGURE 3 ENROLMENT OF SELECTED STUDENT GROUPS



Notes: All data is based on information in effect on December 1 of the reported year. Rural and aboriginal figures are proportions of total Alberta undergraduate enrolment. Rural enrolment is based on the census division of the student's hometown being outside Edmonton or Calgary. Visa student enrolment reflects those students who are not Canadian Citizens or permanent residents. **Source**: Acorn Data Warehouse.

Aboriginal student enrolment across all faculties and campuses is approximately three per cent, a number that the U of A is striving to increase significantly. Both Augustana Campus and North Campus have Aboriginal Student Offices to support current students and to spark new enrolment growth. The Aboriginal Peoples Network and a team of special advisors to the Provost are also charged with enhancing Aboriginal engagement, opportunities, and research. Programming initiatives for Aboriginal professional learning and training include the Aboriginal Teacher Education Program, an off-campus community-based collaborative cohort program offered in partnership with provincial and tribal colleges. The goal of this program is to improve the educational success of Aboriginal children by increasing the number of Aboriginal teachers and teachers with an understanding of Aboriginal culture and perspectives in communities in northern Alberta. Medical training initiatives focused on Aboriginal learners are also well established: the University of Alberta has trained 72 Aboriginal doctors to date, more than any other institution in Canada. In 2012, six new Aboriginal students were admitted to the MD program, while four graduated.

The U of A will continue to invest in the recruitment and retention of Aboriginal students, professors, and staff, as well as provide relevant programming, appropriate support services, and specialized and inclusive gathering places. Notable outcomes since the 2012 CIP include the following:

- A Master of Education in Educational Policy Studies (Indigenous Peoples' Education specialization) is being offered in collaboration with Blue Quills First Nations College.

- Augustana Campus is in discussion with Maskwacis Cultural College to increase access for students to the University of Alberta.

Rural students. Augustana Campus offers a rural residential campus experience for students seeking the best of both worlds: a liberal arts and sciences undergraduate education at a research-intensive university. Along with the faculties of Education and Medicine and Dentistry, it offers practicum placements for students in rural Alberta, and in partnership with the faculties of Education, Nursing, and Rehabilitation Medicine, delivers select programs based on North Campus to rural students. Augustana Campus's relationship to and partnerships with the city of Camrose also attracts students.

Notable outcomes since the 2012 CIP include the following:

- To build enrolment, Augustana Campus is developing and expanding transfer agreements with Campus Alberta institutions in Red Deer, Medicine Hat, and Grande Prairie.

- In Fall 2012, ground was broken to begin construction of the new Camrose Performing Arts Centre, a community-university partnership that will enrich the intellectual and cultural lives of students and Camrose residents.

Francophone students. The intellectual and cultural heart of Alberta's francophone communities, Campus Saint-Jean (CSJ) offers liberal arts and science undergraduate education in French. In addition, CSJ offers a bilingual BSc in environmental and conservation sciences, and in partnership with the U of A's professional faculties, CSJ also offers bilingual undergraduate degrees in nursing, commerce, and engineering. A majority of teachers in Alberta's immersion and francophone schools have studied at CSJ.

The following are two examples of outcomes since the 2012 CIP:

- The U of A is expanding access to French-speaking students seeking pre-baccalaureate education with the introduction in 2013 of college-level programs at Le Centre Collégial de l'Alberta (formerly Collège Saint-Jean), including a two-year bilingual diploma in business administration.

- A new two-year Tourism Management program is being developed for implementation in 2014.

Refer to appendices 2, 3, and 4 for additional information on enrolment and programming initiatives for Aboriginal, rural, and francophone students, respectively, and

to Appendix 8, Research Capacity: Investments and Details, for the U of A's capacity in Aboriginal, rural, and francophone scholarship and research.

International enrolment

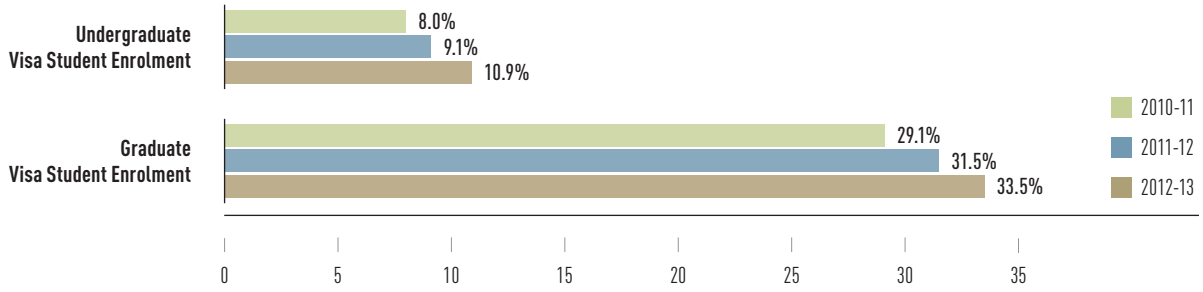
An international dimension is fundamental to all aspects of the University of Alberta's teaching, research, and community service mandates. The University of Alberta is emerging as one of the best places in the world to acquire the mindset of global citizenship and the intellectual skills to succeed in an increasingly internationalized job market. To serve as a globally engaged and internationally respected university, the University of Alberta is aiming to achieve an institution-wide international undergraduate enrolment target of 15 per cent, and to sustain international graduate student enrolment at approximately 30 per cent.

The U of A is committed to attracting a diverse array of nationalities and academic interests among its international student cohort to foster a diversity of global perspectives, talents, and competencies. International students educated at the University of Alberta have the potential to ease provincial labour shortages among professions needing highly skilled, innovative, and entrepreneurial workers.

Graduate student enrolment

The University of Alberta is engaged in an academy-wide transformation of graduate student education and experience. The purpose of this renewal is to ensure that recruitment, programming, financial support, co-curricular and professional development opportunities, and organizational structures are optimal for attracting, retaining, and graduating internationally competitive Canadian and international scholarship-level students. Expected results include a new multi-year strategic graduate management plan, quality assurance measures, and student-focused and friendly administrative systems. Over the past 10 years, graduate student enrolment at the U of A has risen almost 35 per cent, from 5,638 to 7,598 students. The University of Alberta aims to enrol 10,000 graduate students, with approximately 30 per cent of them being international students.

FIGURE 4 INTERNATIONAL STUDENT ENROLMENT

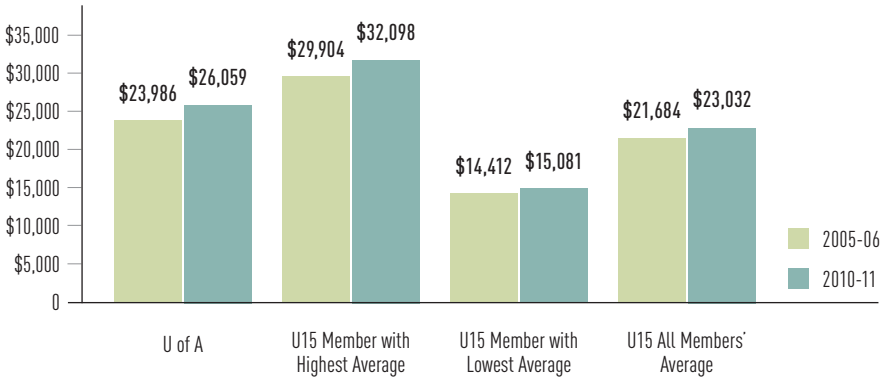


Notes: The proportion of international students is based on the student's citizenship status and registration in effect on December 1 of the reported year. Visa student enrolment reflects those students who are not Canadian Citizens or permanent residents.

Because financial support is critical to the recruitment and retention of top graduate students, the University of Alberta strives to offer appropriate and effective financial packages that are competitive among Canada's top five research-intensive universities. In general, the U of A's average financial support for graduate students is competitive with Canada's leading graduate schools. The U of A's average financial support for doctoral students has remained relatively unchanged relative to other U15 institutions since 2005-2006, increasing approximately nine per cent to $26,059 per year in 2010-11. Support for master's students has increased only two per cent during this same time, placing it second relative to the U15 cohort.

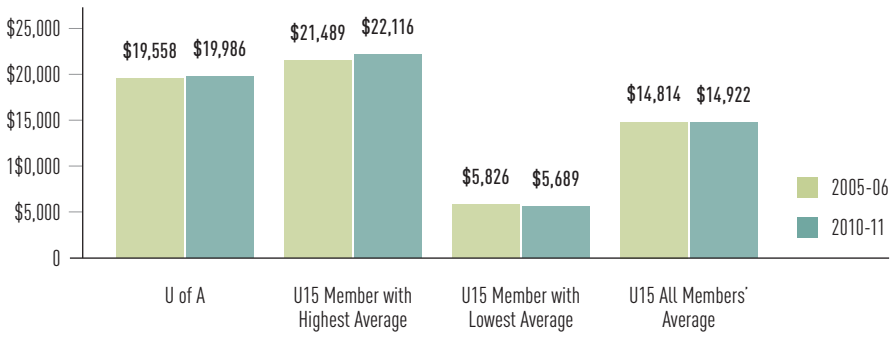
Investment in graduate students offers tremendous social value—graduate financial support costs much less than the total value of master's and doctoral graduates' contributions over their lifetime. Financial support to pursue advanced education partially compensates students for the income they forgo when they choose to pursue graduate studies instead of joining or remaining in the labour market after obtaining their bachelor's degree.

FIGURE 5 AVERAGE FINANCIAL SUPPORT PER DOCTORAL STUDENT, UNIVERSITY OF ALBERTA AND U15 UNIVERSITIES, 2005-06 AND 2010-11



Notes: The statistical results are based on 10 universities for year 2005-06 and 14 universities for year 2010-11. **Source:** U15 Data Exchange

FIGURE 6 AVERAGE FINANCIAL SUPPORT PER RESEARCH MASTERS STUDENT, UNIVERSITY OF ALBERTA AND U15 UNIVERSITIES, 2005-06 AND 2010-11

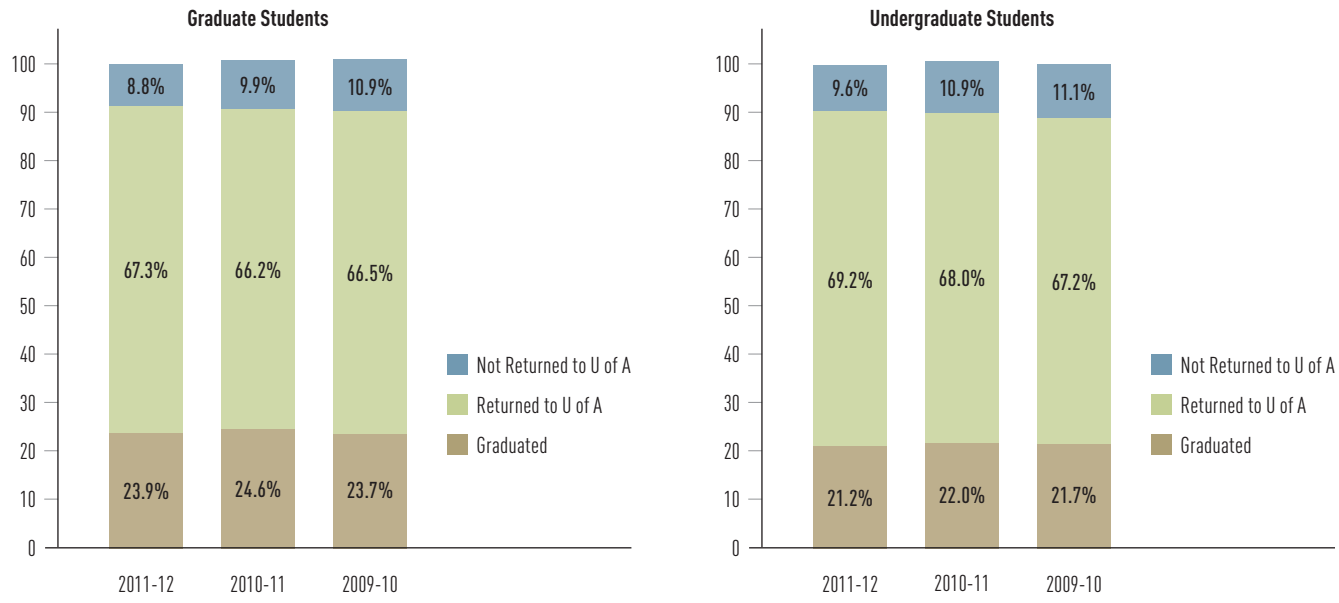


Notes: Results are based on 10 universities in 2005-06 and 14 universities in 2010-11. **Source:** U15 Data Exchange

Retention, Completion, and the Student Experience

Retention rates, and their improvement where capacity exists, are a focus for attention in the academic plan, *Dare to Deliver 2011-2015*. Trends are being charted and assessed for effectiveness of initiatives and opportunities for improvement over a five-year period. Since 2010, graduate student retention rates have improved by 2.1 per cent while overall undergraduate student retention rates have increased by 1.5 per cent.

FIGURE 7 RETENTION



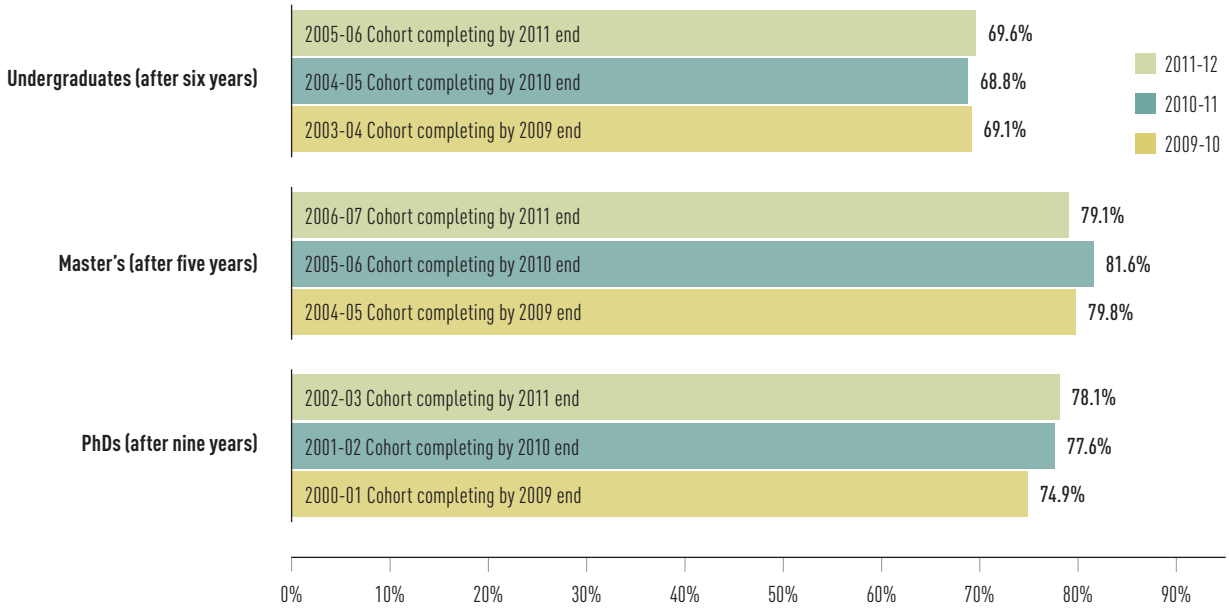
Notes: Student Cohort reflects students registered on December 1 of each respective academic reporting year. The graduated count is as of November 1, 2012. Other student activity one year later is as of December 1 of the year following the cohort year, with the exception of the most recent cohort (Fall 2011), which is as of November 1, 2012. Visiting, special and post-graduate medical education (PGME) students are excluded from the analysis. Categories of student activity (e.g. graduated; returned same faculty, etc.) are mutually exclusive. The summarized counts and percentages by career and the overall U of A reflect distinct students, therefore may be lower than the sum of individual line item counts. **Source:** Acorn Data Warehouse.

Completion Rates

Completion rates for undergraduate programs overall across the U of A have remained steady over the past three years at around 69 per cent. In professional degree faculties, completion rates are steady in the range of 93 per cent. Graduate students' completion rates are approximately 78 per cent across the academy.

Student experience at the University of Alberta encompasses opportunities for academic engagement both inside and outside the classroom, as well as social and community involvement. The U of A promotes student health and wellness alongside career and life development, and intellectual exchange and interaction with professors, staff, and the broader community.

FIGURE 8 COMPLETION RATES, UNIVERSITY OF ALBERTA

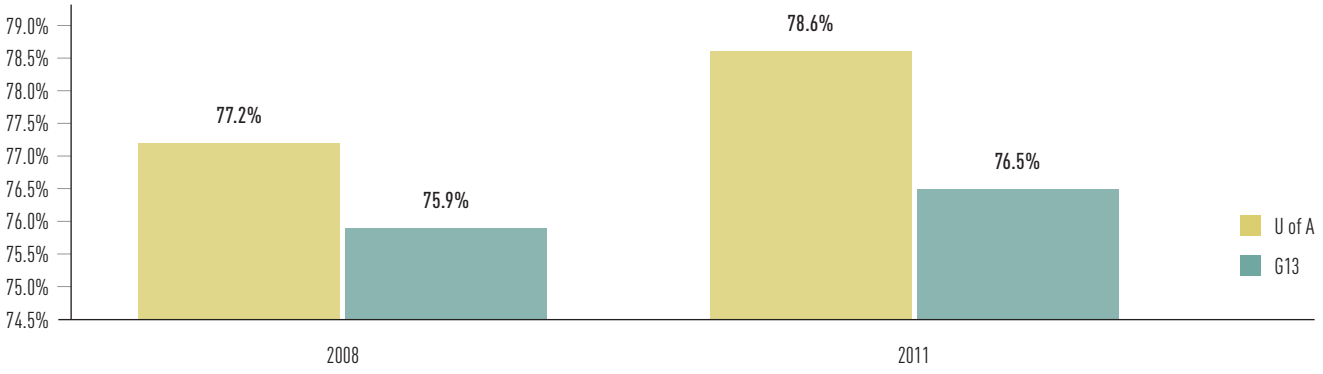


Notes: Completion Rate methodology defined and implemented by the U of A Strategic Analysis Office. Completers in the Undergraduate Completion Rate represent students who graduated from the U of A in any program. Completers in the Master's and PhD Completion Rates represent students who graduated with either a Master's or PhD. **Source:** U of A Strategic Analysis Office undergraduate figures as submitted to CSRDE (Consortium for Student Retention Data Exchange); Master's and PhD figures are based on the U15 methodology, but have been modified to include course-based Master's students in the analysis.

The outcomes of engagement are many, but most readily identifiable are the advancement of knowledge, the development of leadership and entrepreneurial skills and ambitions, involvement in communities both near and far, a sense of belonging and affiliation with the U of A, as well as self-formation and personal development. Ideally, all students will seize opportunities beyond their academic programs and aspire to learn new life skills, deepen or broaden their engagement with their creative, athletic, or intellectual passions, and contribute to their university, communities, and the world in countless ways.

Student housing and the programming offered in residences are important features for attracting students from across the province and the nation, and internationally. The University of Alberta houses only about 13 per cent of its student population in campus residences but has a target of 25 per cent. Every campus strives to offer both residential and commuter students multiple ways and means to actively participate in campus life during the hours spent on campus. To that end, the university supports the development of the whole student and dedicates resources to both academic and co-curricular experiences. The U of A supports in various ways over 400 student groups, and offers academic and personal counselling, health and wellness services, and extensive opportunities for students to participate in collegial governance of the institution. Alumni strongly endorse these initiatives through philanthropic donations to the Annual Fund that supports study abroad, leadership and professional development, and undergraduate research opportunities.

FIGURE 9 PERCENT OF SENIOR STUDENTS RATING THEIR EDUCATIONAL EXPERIENCE AS GOOD OR EXCELLENT



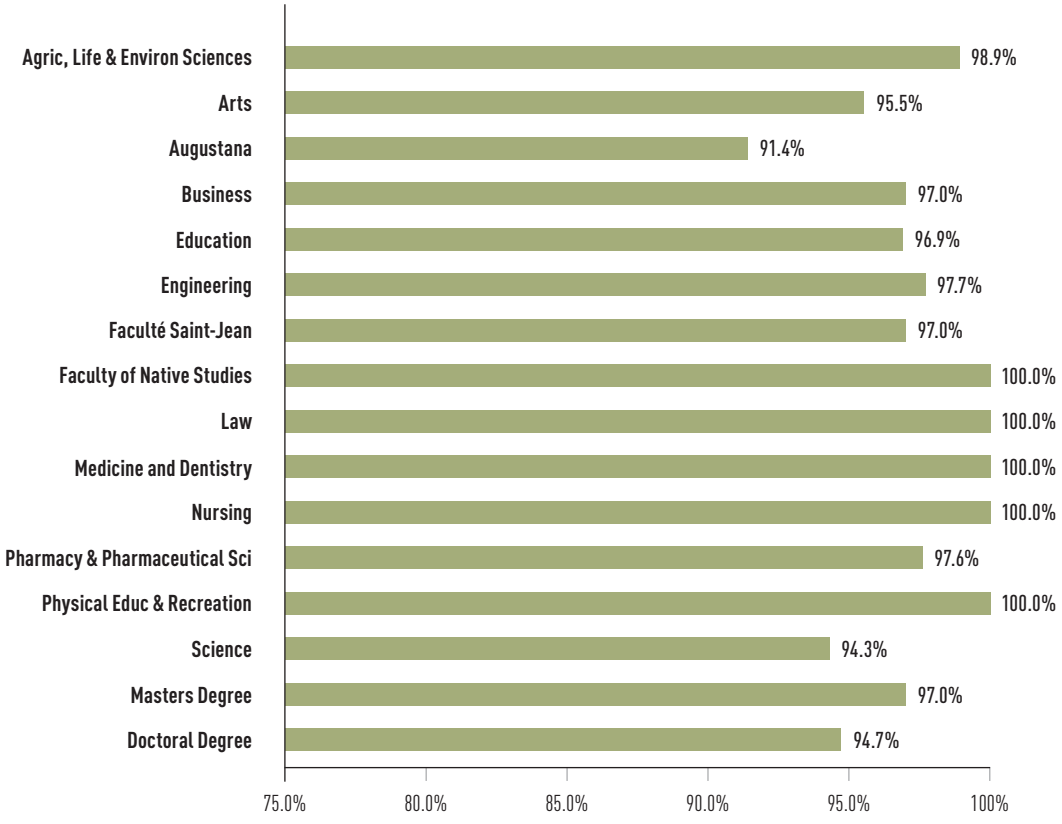
Note: Senior Student designation represents students in their fourth year, or in the year that they are normally expected to graduate.
Source: U of A Frequency Distribution Report, NSSE (National Survey of Student Engagement), 2008 and 2011.

Employment Rates and Labour Force Needs

Statistics Canada reports that the labour force demand for university graduates expanded by 700,000 net positions between 2008 and 2012, despite the dramatic economic issues of that period. High employment rates among graduates from across all disciplines at the U of A, shown in the following Figure 10 demonstrates the value of a university degree.

The University of Alberta contributes highly qualified graduates to several important workforce areas. Please refer to Appendix 5 for the numbers of 2012 U of A graduates in selected fields.

FIGURE 10 GRADUATE EMPLOYMENT RATE TWO YEARS AFTER GRADUATION, 2010 GRADUATES IN 2012



Source: Alberta Enterprise and Advanced Education: Alberta Graduate Outcomes Survey.

Programming Innovations and Initiatives

PRIORITY: University of Alberta graduates are prepared to think critically, to assume positions of leadership in public and private sectors, to act entrepreneurially, to create cultural and technical innovation, and to be successful in the global marketplace.

Although provincial resources to support new programming have been extremely limited since 2009, the University of Alberta has worked to evolve its programming to meet student and highly skilled labour market demands. The U of A undertakes a formal, structured review of each faculty on a regular basis, engaging external reviewers from top institutions in Canada and the United States. These reviews assess program and teaching quality, research quality, and student satisfaction, and recommend means for improvement, including reallocation of existing resources, including FLEs, from current programs to those with greater demand or new relevancy.

Flexibility and Mobility

Consistent with other leading global institutions and the University of Alberta's provincial mandate, the U of A is committed to creating a diverse, comprehensive educational environment that sustains intellectual and organizational strength and leadership across the academy. A broad range of programs is offered that allows for flexibility in the pursuit of advanced education and post-secondary credentials, with various entry and exit points for students with differing needs. Well-established methods and programming provide current and prospective students with opportunities to ladder from one level of post-secondary study to another, and to ladder from post-secondary study to additional professional development programs. These varied laddering opportunities include transfer among programs at the U of A, transfer from and into programs at Campus Alberta partner institutions, embedded and free-standing post-baccalaureate certificates, summer institutes, bridging programs, and, soon, pre-baccalaureate college-level programming.

In 2012, the University of Alberta focused on expanding English-language programs to assist highly qualified prospective and admitted international students improve their language skills and ability to succeed in their degree program. The initiative exceeded its ambitious targets very quickly. From 2011 to 2012, the number of students enrolled in the Bridging Program increased by 67 per cent (from 366 to 612 students).

English for Academic Purposes - Bridging Program students Student Numbers (Head count)

	2011	2012
Total	366	612
Percentage of BP students within the EAP student population	66.30%	68.92%

Collaborative and articulation programming (where students complete one or two years of study in their home region or country before transferring to complete and receive their degree at the University of Alberta) creates a flexible and diverse array of educational opportunities for undergraduate students. Collaborative programming options for both new and existing programs are part of program renewal.

See Appendix 6 (page 96) for a list of selected programs offered in partnership with Campus Alberta, Canadian, and International institutions.

Finally, new programming is essential to meet new and emerging social and economic needs, as well as student demand. Program development in 2012 and 2013 is summarized in Appendix 7 (page 98).

Knowledge Mobilization, Entrepreneurship, and Leadership

The University of Alberta educates graduates with the knowledge and skills foundational to driving and diversifying Alberta's workforce and economy. The U of A is committed to integrating a research-intensive educational experience with specialized training to enable students to pursue entrepreneurial careers, if they choose, and to become leaders in business, industry, non-profit, and public service sectors.

Programs with entrepreneurship focus

The U of A has a long-standing suite of programs aimed at enhancing Alberta's entrepreneurial capacity for technological, business, and social innovation. These include a Bachelor of Commerce degree in entrepreneurship and family enterprise; an MBA in technology commercialization; an Executive management program; a Senior and Executive Managers' Development Program; and a Citation in Entrepreneurship.

Investments in additional programs and initiatives since the 2012 CIP include:

- *Master of Arts in Community Engagement:* Trains professionals who are working, or who will work, in community settings in roles that include program evaluation, leadership, social entrepreneurship, program development, and community capacity-building.

- *Citation in Social Entrepreneurship:* Empowers participants by providing the skills and knowledge to think innovatively, to anticipate and solve problems, and to engage and interact with business communities.

In the coming year, an Innovation and Entrepreneurship certificate program—targeted at graduate students and post-doctoral fellows across the STEM disciplines—will undergo review and approval.

Initiatives to develop entrepreneurship

The U of A will continue to sustain and develop several innovative programs that leverage the entrepreneurial expertise of researchers, staff, and students within the institution, and create opportunities for learning and impact outside the classroom. These include the following:

- The *Technology Commercialization Centre* supports technological entrepreneurship and commercialization planning and assessment. The aim is to increase Alberta's entrepreneurial capacity by linking skilled professionals at the science-business interface, and stimulating technology entrepreneurship through partnerships with key stakeholders such as TEC Edmonton, Alberta Innovates-Technology Futures, Enterprise and Advanced Education, NanoAlberta, and Alberta Innovates – Health Solutions.

- The *University of Alberta Venture Catalyst Competition (AVCC)* is a student-led effort designed to encourage entrepreneurship among post-secondary students at the U of A. The Technology Commercialization Centre supports and advises this initiative, a feeder into the TEC VenturePrize, as part of a suite of efforts in co-ordination with TEC Edmonton to enhance entrepreneurship on the University of Alberta campus and across the province.

- *Entrepreneurship 101* is a regular series of workshops and lectures by researchers and professors in the School of Business and the National Institute for Nanotechnology (NINT), assisting post-doctoral fellows in the sciences to develop entrepreneurial skills.

- The *Undergraduate Research Initiative,* now in its third year, creates and facilitates opportunities for undergraduates to engage directly in research and creative activities under the guidance and mentorship of university research leaders.

- *Graduate and post-doctoral fellow professional development* programs prepare graduate students and post-doctoral fellows for both academic and non-academic employment, and prepare them to be competitive in the global market.

- The *Community Service-Learning* program provides students with "hands on" learning experiences by aligning university course assignments with volunteer work in local communities, industry, and non-profit organizations. CSL marked its tenth anniversary in 2012, having tripled annual enrolment since 2007 to 750 students in 70 courses and 25 disciplines, and acquiring more than $2 million in external philanthropic funding.

- *Professional upgrading* continues to be a defining element of the U of A's professional faculties, its Faculty of Extension, and its humanities and sciences core through special programs designed to meet the needs of public and private sector partners.

Initiatives in Leadership

The University of Alberta strives to foster leadership as an essential attribute of local and global citizenship, both in the institution as a whole and within each student. Leadership, as a concept, skill, and activity in itself, is offered as a field of study for credit and non-credit continuing education programming, professional development activities, and scholarship support. U of A leadership initiatives include the following:

- The *Municipal Management & Leadership Certificate* and *Leadership Development Program* is offered by the School of Business, while the Faculty of Education offers a specialization in *Educational Administration and Leadership*.

- Numerous donor-funded *undergraduate leadership awards* reward and recognize students involved in leadership activities in university, community, cultural, political, sports or other arenas.

- The *Green and Gold Student Leadership* and *Professional Development Grant* funds undergraduate and graduate students who want to develop leadership skills through participation in professional development activities (supported by University of Alberta Annual Fund donors).

- The *Arts Leadership Cohort* in Lister Hall residences is designed for students who aspire to be involved in their community, develop their leadership skills, and have an impact on campus and in the greater community.

- The *Students' Union Annual Leadership Summit* assists student leaders in developing leadership skills.

Plans are underway for a University of Alberta Leadership College. The vision is to offer an intensive academic, residential environment that will foster the leadership potential of motivated, high-achieving students through international study and travel, community service learning, and undergraduate research experiences.

Provincial and National Collaborations

PRIORITY: The University of Alberta is a valued and innovative leader and partner of other post-secondary institutions in Campus Alberta and across Canada in achieving shared academic and organizational aspirations.

Campus Alberta Collaborations

One of the priorities of the Ministry of Enterprise and Advanced Education is to ensure a dynamic and innovative Campus Alberta system that maximizes and leverages expertise and resources. The University of Alberta serves its mandate as the province's flagship institution in part through leadership in Campus Alberta's academic enterprise, in both programming and research.

Significant institutional investment in the University of Alberta Library, for example, ensures that researchers, instructors, and students throughout Campus Alberta as well as the entire Government of Alberta have free digital and physical access to the holdings of one of North America's top-ranking research libraries. In addition, while the Government of Alberta provides financing, the University of Alberta Library manages the administration of the Lois Hole Campus Alberta Digital Library initiative, dedicated to making commercially licensed digital materials and new digital collections widely available.

The University of Alberta continually develops and enhances programming partnerships with Campus Alberta institutions within the CARI sector as well as the other five post-secondary sectors. Details on academic programs that have been established or initiated in 2012 are found in Appendix 7.

Three notable examples of institutional leadership and sharing of resources and best practices since the 2012 CIP are:

- *Mental Health Initiative.* Providing adequate mental health services to students has become a major focus for North American post-secondary institutions. The University of Alberta has taken the lead in Campus Alberta by advising the government on the severity of the situation among post-secondary students and requesting provincial support to enhance institutions' ability to provide essential services to students. Currently, to ensure that sustainable medical and mental health funding and services are established, the U of A is preparing a proposal for a Family Care Centre to be located on North Campus. While this concept is being developed, the ministry accepted a bridge-funding proposal from the U of A, which subsequently led the ministry to invite proposals from the universities of Lethbridge and Calgary. The U of A's request for $3 million over three years was approved for January 2013. U of L and U of C were each awarded similar $3 million funding.

- *Information Technology.* The University of Alberta's Academic Information and Communication Technologies unit developed a cost-effective way of putting IT infrastructure into classrooms, which has been shared with and adopted by the University of Calgary. The U of A has developed expertise in installing and deploying the Eduroam technology, and shared this expertise with other Campus Alberta institutions. In addition, the U of A has collaborated with Athabasca University, NAIT, EAE, and Cybera to consolidate the hosting of the University of Alberta Learning Management System (Moodle) at Cybera. To complement the Ministry of EAE investment of approximately $235,000, the partners absorbed the remaining hardware, support staff, and ongoing operational costs. Other Campus Alberta institutions have been invited to join this initiative, which has served as a proof of concept in sharing expertise and reducing costs with economy of scale. There are opportunities to extend these types of initiatives to other IT issues, such as identity management, as resources allow.

- *Harmonizing Provincial Health Research Ethics.* The University of Alberta played a leadership role within the Executive Sponsors group for Alberta's Health Research Ethics Boards (HREBs). The HREB consortium signed a reciprocity agreement to harmonize multi-jurisdictional health research ethics applications as part of AI-HS's initiative to define a framework and mechanisms for sharing appropriate health research ethics information. Prior to 2012, the U of A had reorganized and integrated its internal ethics review processes, and built an online ethics review tracking system. During 2012, the U of A's Research Ethics Office and Administrative Information System portfolio both shared their organizational and technical experiences about this process with other HREB members, and helped to implement a provincial health research information framework. The University of Lethbridge will use the U of A ethics application and review system for its own internal processes as a result of project charter development with the U of A. The anticipated outcome of this provincial initiative is to further enhance health research investments in Alberta.

National Collaborations

The U of A places a high priority on leading, supporting, and participating in national research and innovation initiatives, and where possible, working in partnership with the Government of Alberta to leverage resources. Accordingly, the university invests internal resources (e.g., base positions, space, and funding contributions) in the following national initiatives: The National Institute for Nanotechnology; the Pacific Institute for Mathematics; SNOLAB (neutrino physics, with expansion into studies within seismology and geophysics); TRIUMF (subatomic physics); WestGrid (one of the four regional consortia that operate Compute Canada's supercomputing resources); Canadian Light Source (synchrotron research); and more recently, the IBM-Alberta Centre for Advanced Study (initiated at the University of Alberta and now expanded to the University of Calgary). These investments bring federal and international research dollars into the province, and expand the province's research capacity through access to highly specialized resources and expertise. Complementary investments by the province in such national initiatives raise the profile of the province, the U of A, and all Alberta CARIs nationally and globally.

In support of French-language programming, under the terms of the Canada/Alberta Agreement on Minority-Language Education and Second Official Language Instruction, the U of A received $3,787,659 in 2011-2012 and is expecting the same amount from Heritage Canada via Alberta Enterprise and Advanced Education in 2012-2013. This is an important national collaboration among the university, the provincial government, and the federal government.

The U of A will also continue to partner with other Canadian institutions on common objectives that can leverage complementary expertise and resources. There have been two notable outcomes associated with these investments since the 2012 CIP: the success of the CALDO partnership in recruiting full-funded graduate students from Brazil, and the India–Canada Centre for Excellence (IC-IMPACTS) success. These outcomes advance both the U of A's and Alberta's international objectives and are described in the next section.

Internationalization

PRIORITY: The University of Alberta forms international collaborations that create exceptional learning, discovery, citizenship, and innovation opportunities, advancing its vision to be one of the world's top publicly funded institutions.

Internationalization is an institutional objective, an institutional strategy, and an institutional outcome. The University of Alberta must reach beyond Canada's borders to take its place among globally engaged institutions and serve as an exchange channel for Alberta capacity and international capacity. Internationalization is also a broad institutional strategy that advances nearly all elements of the U of A's academic enterprise and objectives: recruitment of exceptional undergraduate and graduate students from targeted highly ranked foreign institutions; education abroad activities and international internship placements for Canadian students; development and maintenance of international relationships, partnerships, and projects that enhance teaching and global community service; curriculum development in global citizenship; and creation of international research consortia and partnerships that leverage institutional strength and increase research capacity and support.

The U of A's strategies for internationalization are achieving results. International enrolment at both the undergraduate and graduate levels has been increasing over the past three years. Research funding from foreign sources shows a large increase over the last year's level. Shared credentials and degrees with top-tier international partners have been put in place, and international industrial internship opportunities for Alberta students have emerged through the university's interaction with these partners. Many of these outcomes emerge from the U of A's existing international research consortia, and continued efforts to establish new ones in strategic areas that advance its learning, teaching, and research. The U of A's internationalization strategies and additional details on outcomes are summarized at the end of this chapter. The sections that follow highlight institutional-level considerations and specific notable achievements.

Institutional Partnerships

The University of Alberta will continue to build partnerships with top-tier institutions in five priority countries: Germany, China, Brazil, India, and (regions within) the United States. At the same time, the U of A will also sustain and develop other partnerships outside these priority areas should an emerging opportunity also meet strategic goals, especially in the area of global citizenship. The U of A's ongoing relationship with the Aga Khan University is one such example.

China

Since the 1990s, the University of Alberta endeavoured to build a relationship of respect and trust with China's top-tier education and research institutions, specifically Fudan University, Tsinghua University, and the Ministry of Science and Technology (MOST). The university has 60 active memorandums of understanding with Chinese universities, research institutes, and government agencies.

Outcomes since the 2012 CIP include the following:

- *New water research initiatives on water-borne diseases, toxicology, and human health:* Aligned with the U of A's water initiative, these programs involve the State Key Laboratory of Environmental Chemistry and Ecotoxicology (SKL-ECE), the Research Center for Eco-Environmental Sciences (RCEES), Chinese Academy of Sciences (Beijing), College of Environmental Sciences and Resources, Zhejiang University, and Harbin Institute of Technology.

- *Sino-Canadian Energy and Environment Research Initiative - Tsinghua University:* This initiative will

advance research on clean energy, with a key focus on effectively and responsibly utilizing the energy resources for social, environmental, and economic benefits. This initiative will support a broader international research collaboration involving affiliated units, industry, and other stakeholders from Canada and China.

- *Canadian-Chinese Graduate Student Summer School – 2013:* In collaboration with UBC, Dalhousie, Laval, UManitoba, and UOttawa, the University of Alberta will lead development of a program preparing graduate students for success within the international context.

- *Medical Sciences Graduate Program (MSGP) – Shantou University:* The MSGP-Shantou program, a joint PhD program between the University of Alberta and Shantou University Medical College, received its first cohort of students in 2012.

- *U of A Masters of Financial Management – delivered in China:* Offered in partnership with Xi'an Jiaotong University in China, this master's degree is designed for individuals who aspire to fill leadership roles, such as VP finance, controller, treasurer, or chief financial officer, in large private and public sector organizations, particularly those with a global orientation.

Germany

The University of Alberta's association with German institutes, universities, and government agencies has matured extensively over the last 10 years. The current foundation of this relationship consists of a major research partnership with the Helmholtz Association of German Research Centres; member institution status in the Technical University of Munich's science and engineering graduate programs; research mobility programs with Bavarian universities in the areas of computing science and earth observation sciences; active exchange programs in the humanities and fine arts with Ludwig-Maximilians-Universtät and Leipzig University; and the establishment of the sixth worldwide German Canadian Centre for Innovation and Research at the U of A.

Outcomes since the 2012 CIP include:

- *Joint PhD agreement with Ludwig-Maximilians-Universtät*: The University of Alberta and Ludwig-Maximilians-Universität (LMU) offer a jointly delivered doctoral degree program in which students complete part of their program abroad at the host university.

- *Berlin Summer Program—2013*: This program will offer course credit opportunities for U of A undergraduates in language instruction and internships in German cultural and political organizations. This program is the first in a series, with others being developed in China and the U.S. for launch in 2014 and in Brazil for launch in 2015.

Brazil

In 2010, the U of A identified Brazil as a strategic area for partnerships. In 2011, the university joined with Laval University, Dalhousie University, and the University of Ottawa to create the CALDO consortium. CALDO signed agreements with Brazil's two premier funding agencies, the Ministry of Science and Technology's National Council for Scientific and Technological Development (CNPq) and the Ministry of Education's Federal Agency for the Support and Evaluation of Graduate Education (CAPES). These agencies administer scholarships with Brazil's Science without Borders (SwB) program, which is sending 75,000 fully funded students to study abroad.

Outcomes since the 2012 CIP include:

- Through the CALDO consortium, the University of Alberta enrolled 52 fully funded undergraduate students in September 2012, the first year of the SwB program, and an additional nine students in January 2013.

- The U of A is initiating cotutelle agreements with the Federal University of Minas Gerais (Brazil), Technische Universität München (Germany), and University of Campinas (Brazil) in areas of science.

India

In 2009, President Samarasekera launched accelerated strategic outreach in India, to pursue partnerships with India's universities, research institutes, and industries. Active research MOUs and exchanges currently exist in the domains of oil, gas, agriculture, and nanoscience, with the Indian Institute of Technology, Mumbai, and the Indian Institute of Science, Bangalore, as well as with industry leaders Tata Consultancy Services, Petrotech, and Oil and Natural Gas Corporation Limited, among others.

Outcomes since the 2012 CIP include the following:

- *IC-IMPACTS*: A joint proposal submitted by the U of A, the University of British Columbia, and the University of Toronto was selected by the federal government to establish the India-Canada Centre for Innovative Multidisciplinary Partnerships to Accelerate Community Transformation and Sustainability, or IC-IMPACTS. The centre will work in three areas of strategic importance to both India and Canada: integrated water management, sustainable and safe water infrastructure, and water-borne disease prevention and treatment. These areas also align with the U of A's water initiative. Research findings will be disseminated with help of local governments, NGOs, trade organizations, and public sector organizations in both India and Canada. Co-partners in India include Indian Institutes of Technology in Delhi, Roorkee, and Bombay; Birla Institute of Technology in Pilani; Vallabhbhai Patel Chest Institute; and the International Centre for Genetic Engineering and Biotechnology. Total federal funding is $13.8 million over five years.

- *Ganga River Basin —Industry/Academia Partnership*: In partnership with ETI Dynamics in the United Kingdom, the U of A is bringing together Canadian research institutions and technology companies into a science, technology, and innovation "country cell" that will address aspects of the Ganga River cleanup project in India.

United States

The U of A's U.S. strategy, which has been underway since 2010, focuses on regions that complement the university's research activities, and advances recruitment and alumni objectives. Special emphases include increasing the number of visitors funded under the Fulbright Program, and defining roles for the U of A in influential U.S. university and policy associations.

Outcomes since the 2012 CIP:

- *65th Annual Meeting of the Council of State Governments - West*: The CSG-West held its annual conference in Edmonton, under the theme of Western Frontiers—On the Edge of Innovation. The U of A hosted a one-day forum event for attendees at the School of Business's Western Centre for Economic Research.

- *Alberta Institute for American Studies*: An external U.S. panel conducted an institute review and presented several strategic recommendations on enhancing the institute's disciplinary focus and the role it should play in moving forward the U of A's overall U.S. strategy.

- *Fulbright Program*: Six Fulbright-funded U.S. scholars and visitors.

Programs for Global Citizenship and Readiness

To meet employer expectations in Canada and abroad, new graduates need the knowledge, skills, and understanding to function effectively in a global marketplace. As a result, students expect their university education to prepare them well for international opportunities. To answer this need, the University of Alberta will continue to recruit faculty experts in the history, sociology, business, education, and economics of globalization, who are able to develop outstanding undergraduate and graduate programs in these areas. The University of Alberta has offered such programs for several years, including a certificate in globalization and governance, a bachelor of commerce major in international business, an MBA in international business, and various language programs.

Outcomes since the 2012 CIP include the following:

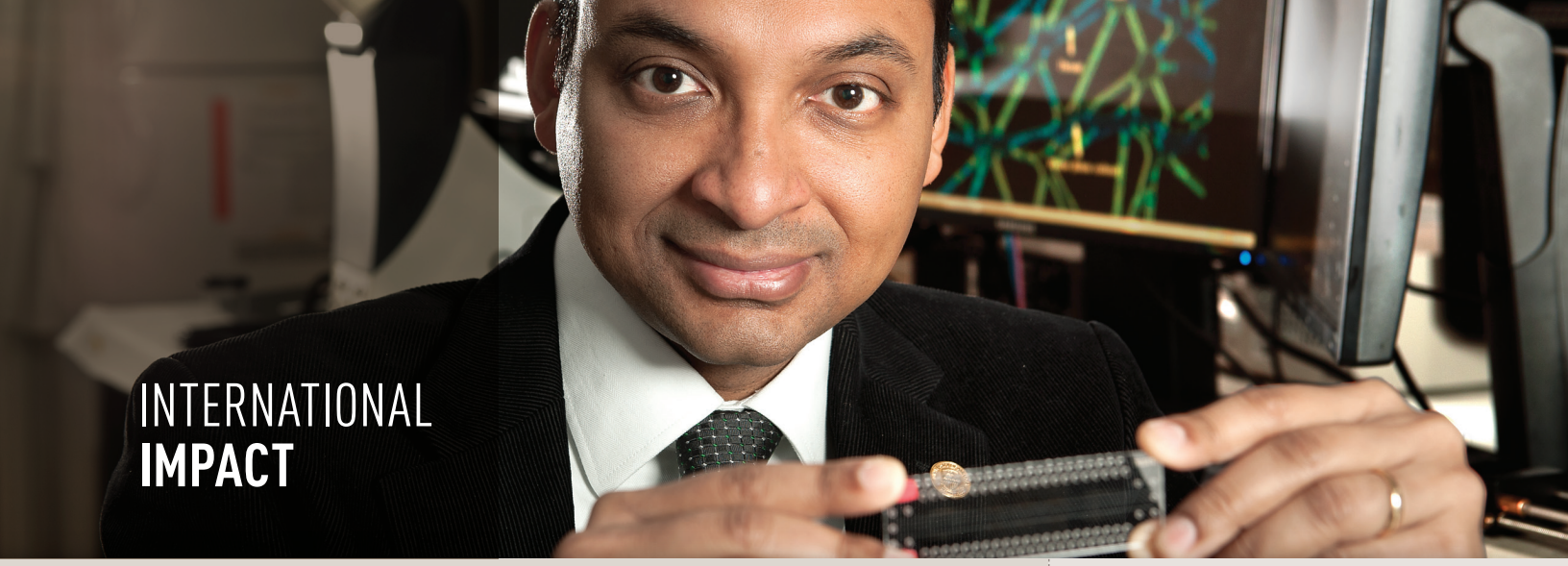
- Four new multi-faculty, interdisciplinary education abroad programs have been developed in the areas of business and health.
- New certificate programs in European studies, Latin American studies, India studies, International learning, and Chinese translation.
- New citation for English for Arabic-speaking students.

The University of Alberta will continue to invest in special training and learning opportunities for international professionals from the public, private, and academic sectors. These activities advance the university's global reputation and relationship-building objectives.

Activities since the 2012 CIP include the following:

- *University Management Program:* Offered in 2011-12 to 25 administrators from top Chinese universities, this program will continue in 2012-13 for participants from both Chinese and Iraqi universities.
- *English training projects and management programs:* Designed especially for public professionals from Shanghai, Saxony, Germany, and Japan.

Individual faculties also have units charged with supporting, sustaining, and developing global research, training, and citizenship.



INTERNATIONAL **IMPACT**

GLOBALIZATION IS TILTING THE BALANCE OF POWER. INTERNATIONAL SUPER-PARTNERSHIPS BETWEEN GOVERNMENTS, BUSINESSES, AND ACADEMIC INSTITUTIONS CAN NOW HAVE GREATER IMPACT THAN ANY SINGLE SUPERPOWER. THE UNIVERSITY OF ALBERTA IS AT THE FOREFRONT OF THIS SHIFT IN THINKING.

And we're putting it into action by building the foundations for a Canada-Alberta-India super-partnership ripe with opportunity for the whole province.

Since 2007, the university has signed 19 agreements with India's top science and technology schools. These agreements, unique to the U of A, are setting a new international standard in higher education. They are multi-faceted academic, government, and industry partnerships. No longer based on a "one-to-one exchange" model, these agreements include multiple opportunities for exchange, such as student exchanges, co-supervision of graduate students, and collaborative research projects between academia, government, and industry.

The alliances built through this type of multi-level model translate into opportunity: a well-educated Alberta workforce with a global outlook, an international reputation built on respect and collaboration, and meaningful relationships with some of the most powerful institutions in Canada and Asia.

Take IC-IMPACTS, the India-Canada Centre for Innovative Multidisciplinary Partnerships to Accelerate Community Transformation and Sustainability, as an example. This new $30-million partnership brings together Canada's top three research universities—the U of A, the University of British Columbia and the University of Toronto—with several of India's established and future academic and industry research powerhouses. The goal is to develop technologies that will improve water health, safety, and sustainability in remote communities in both countries. Teams involving the U of A are developing practical methods of delivering safe, clean drinking water to rural areas in both Canada and India.

OUTCOMES AND BENEFITS:

- More than 75 faculty members of Indian origin make the U of A their home.
- The U of A has formed collaborative partnerships with:
  - » Indian Institutes of Technology, Bombay, Delhi, Roorkee, and Kharagpur
  - » Indian Institute of Science and Indian Institute of Management, Bangalore
  - » The University of Hyderabad
  - » Gujarat Technical University
  - » Pandit Deendayal Petroleum University
  - » MS Swaminathan Research Foundation
  - » Petrotech
  - » Tata Consultancy Services
- Of the 300-plus students from India attending the U of A, more than 170 are enrolled in graduate programs. Co-supervision by professors here and in India provides a "brain chain" of graduates that will synergize the Alberta-India relationship for years to come.
- The U of A and Indian partners Tata Consultancy Services, Robonik, and KEM Hospital, are developing water monitoring sensors for measuring E. coli and metal contaminants in drinking water.
- U of A students travelled to India in February 2012 to work with the Swaminathan Foundation, exploring issues of food security, sustainable agriculture, gender equity, rural development, and poverty in India.
- The U of A organized a symposium in Boston in February 2013 where leaders from India, Singapore, Europe, and North America met to discuss the key scientific issues related to the development of efficient water treatment facilities with minimal use of energy, incorporation of advancement in micro and nanotechnologies for water purification and monitoring, and the challenges faced by the emerging technologies in field-scale deployment and its uptake by the community.

Research Capacity and Impact

PRIORITY: The University of Alberta is among the top public institutions that are internationally recognized for areas of excellence and impact across the breadth of discovery, innovation, and creative activities.

In keeping with a public university of its size and stature, the U of A engages in research and creative activities across all domains of human endeavour. Advances, insights, and impact increasingly span traditional administrative units and disciplinary boundaries. For this reason, the U of A will continue to sustain and develop areas of excellence and impact within each of the following broad themes: Humanities and Fine Arts; Social Structures and Systems; Science and Technology; Energy; Environment; Food and Bioresources; and Health and Wellness. Public universities that are globally recognized as being best in class have identifiable excellence and impact in specific areas within most or all of these broad themes. Our continued commitment to this full spectrum of inquiry positions the U of A to make the comprehensive, cross-disciplinary contributions towards the scientific, social, and cultural innovations needed to support Alberta's identified objectives and outcomes for its citizens: effective resource and environmental management, a broadened economic base, and resilient and healthy individuals and communities.

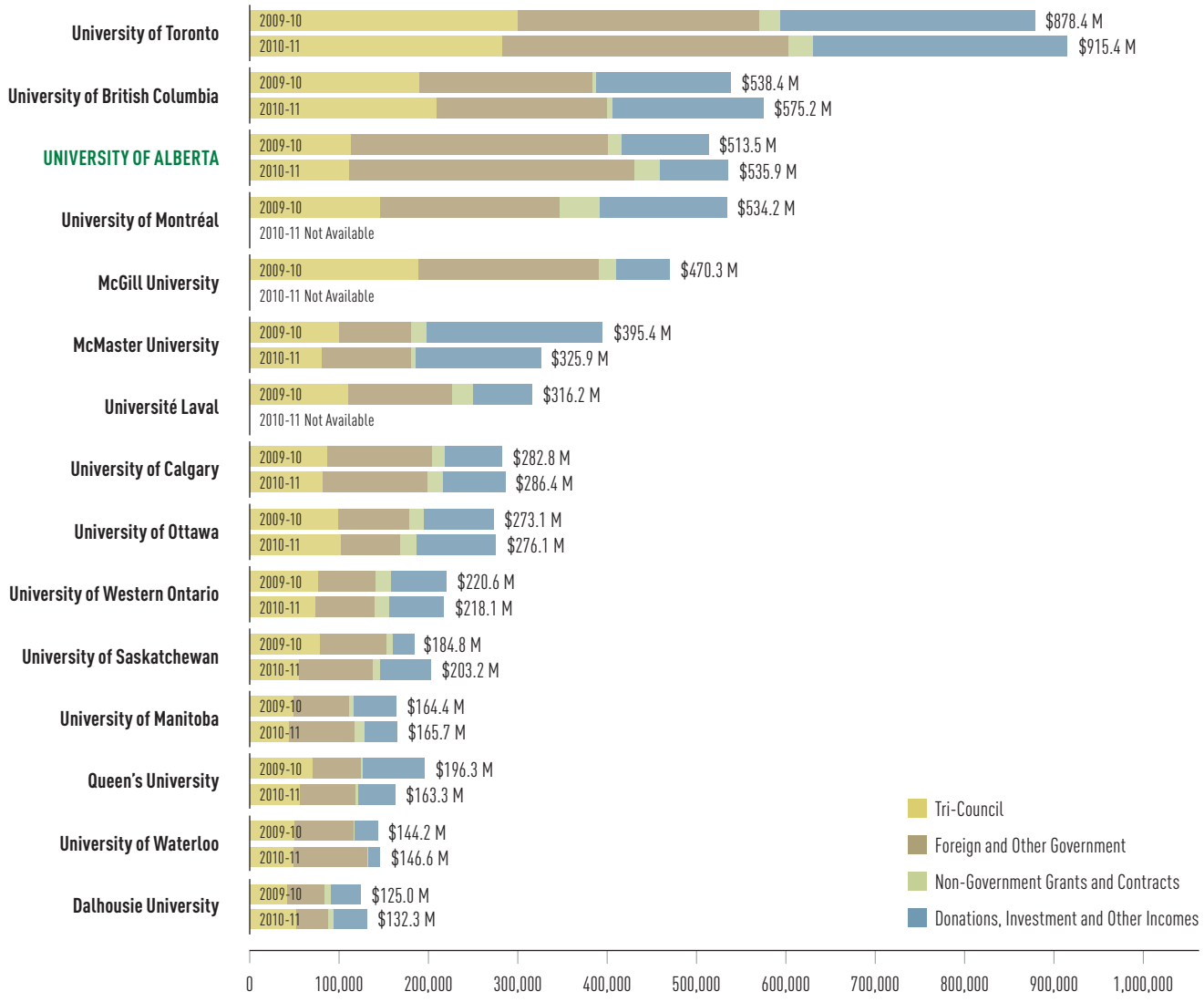
The U of A's research capacity consists of its people, and the financial, physical, and human resources it provides to enable them to make a significant impact in their fields. Specifically, the U of A builds research capacity by investing in talented faculty members, investigators, and specialized non-academic staff; research chairs; exceptional graduate students and post-doctoral fellows; equipment, resources, and infrastructure for individual faculty as well as multi-user and multi-team activities; centres, institutes, and collaborative initiatives within the institution and in partnership with other Canadian and global institutions; core research resources, facilities, and platforms; and capital infrastructure development undertaken to accommodate the evolving needs of research and to pursue new avenues of impact.

The University of Alberta uses a number of quantitative and qualitative measures to assess the quality and impact of its research capacity investments and initiatives. These measures and the U of A's strategies for improvement are provided at the end of this chapter, along with examples of outcomes achieved since the 2012 CIP. The following sections present some of these measures along with institutional-level considerations and notable achievements.

Assessing Quality and Impact

The U of A's 2010-2011 total sponsored research income increased by four per cent over its 2009-2010 level. For 2010-2011, the U of A ranked third among U15 Canadian universities in total sponsored research income ($535.9M) and second in sponsored research income per full-time teaching faculty member ($337,082). Research income from federal and other sources is an essential element of Alberta's research and innovation capacity; the U of A continuously invests resources to increase the success of its reseachers

FIGURE 11 U15 SPONSORED RESEARCH INCOME BY TYPE, 2009-10 AND 2010-11



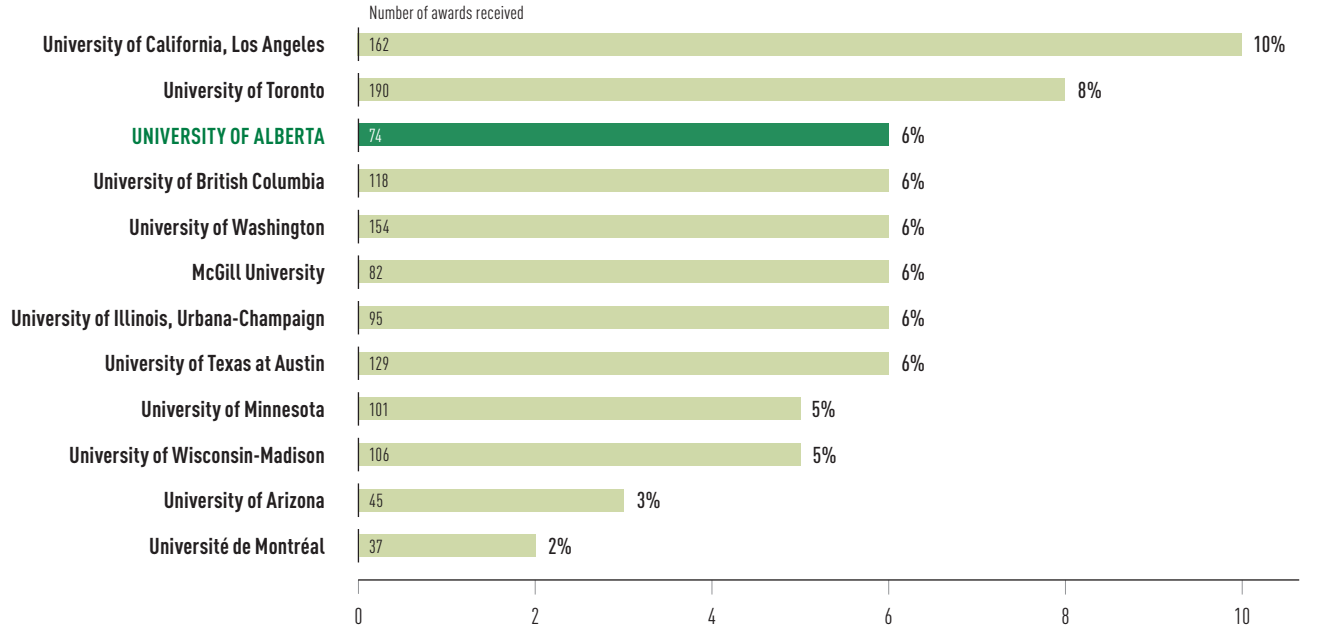
Notes: Income from Tri-Council includes: Social Sciences and Humanities Research Council; Natural Sciences and Research Council; and Canadian Institute of Health Research (CIHR). Other Government income reflects income from all government departments and agencies - grants and contracts, less Tri-Council and includes foreign government income. Donations, non-government grants and contracts, and investment and other incomes, are reported in each respective category on the CAUBO report. **Sources:** Canadian Association of University Business Officers (CAUBO): Financial Information of Universities and Colleges 2009-10 and 2010-2011, Report 3.1. Université de Montréal includes École Polytechnique de Montréal and HEC Montréal. The 2010-11 information is not yet available for McGill University, Université de Montréal and Université Laval.

in funding competitions and has extended a pilot grants support program to Tri-Council funding.

The awards and honours received by our faculty are another important indicator of the excellence and impact of the U of A's professoriate. Such awards and honours reflect both the quality of the professors recruited and retained, and the quality of the environment and opportunities provided for them to have impact in their fields. The U of A benchmarks its progress in recruiting and supporting exceptional scholars, as evident from faculty awards and honours, against a target peer group of Canadian and U.S. institutions. The U of A also works to ensure that achievements of its professoriate are recognized by distinguished groups, and celebrates that recognition when it occurs.

U of A faculty received several notable awards during 2012. Highlights include Dr. Lorne Babiuk, vice-president (research), receiving one of the world's most prestigious health research awards, the Canada Gairdner Wightman Award. Greg Hollingshead, professor emeritus, was awarded the Order of Canada. Researchers affiliated with the Alberta Glycomics Centre were awarded the 2012 NSERC Brockhouse Canada Prize for Interdisciplinary Research in Science and Engineering, the first such award given to researchers at our institution. Four faculty members were elected as Fellows of the Royal Society of Canada, two to the Canadian Academy of Health Sciences, and one to each of the Agricultural Institute of Canada and the American Academy of Nursing.

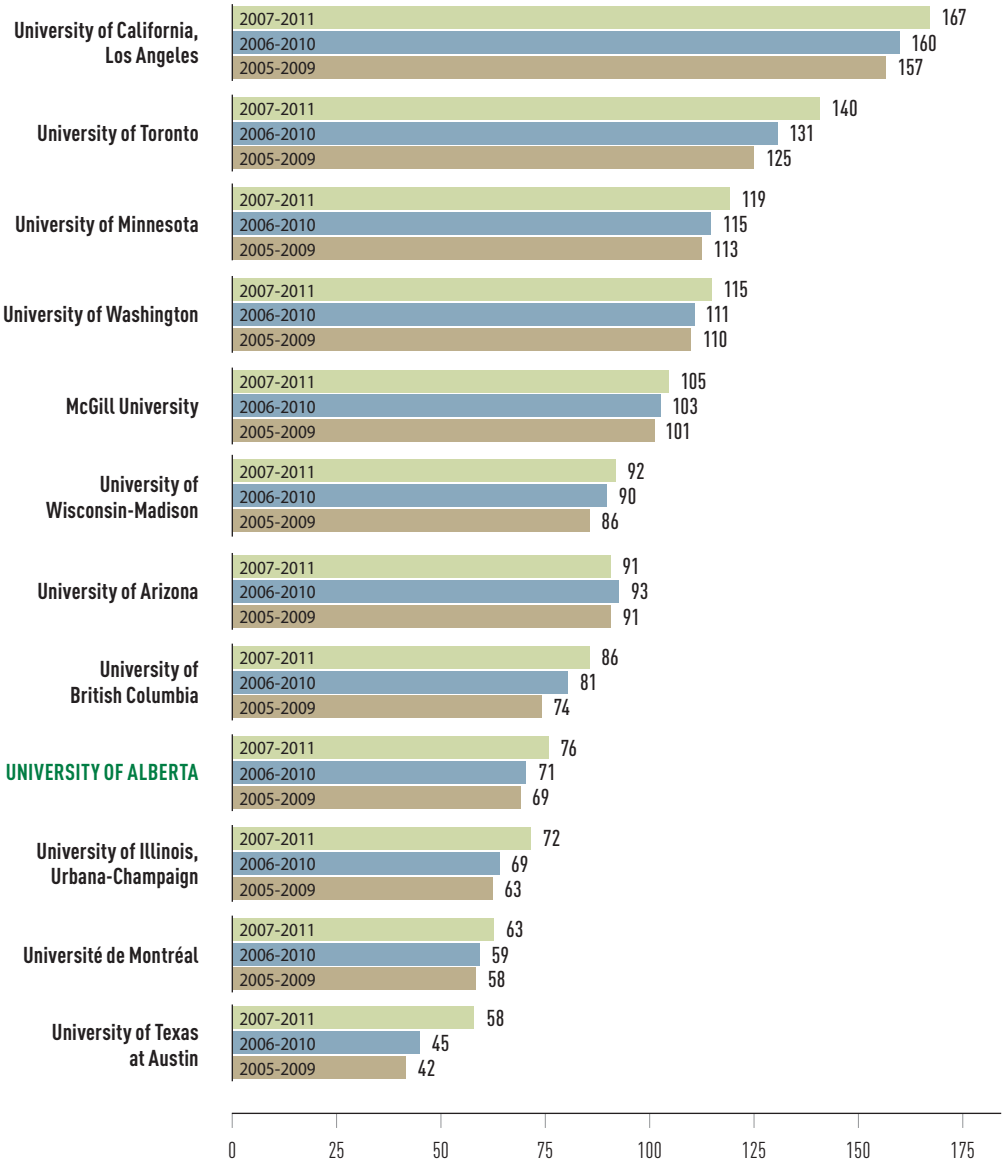
FIGURE 12 PERCENTAGE OF FULL-TIME FACULTY RECEIVING SELECTED AWARDS AND HONOURS, UNIVERSITY OF ALBERTA AND SELECTED PEERS, 2001 TO 2011



Awards include: 3M Teaching Awards (2001-2011), American Academy of Arts and Sciences (2001-2011), CIS Coach of the Year Award (2001-2011), Federal Tri-Council Highest Awards (2001-2011), Fulbright Scholars (2001-2011), Guggenheim Fellowship Awards (2001-2011), ISI Highly Cited Researchers (inception-2011), Killam Research Fellows (2001-2011), Molson Prize (2001-2011), National Academy of Engineering (2001-2011), National Academy of Sciences (2001-2011), Nobel Prize (inception-2011), Royal Society of Canada (2001-2011), Royal Society of Canada Awards (2001-2011), Royal Society of London (2001-2011), Sloan Research Fellowships (2001-2011), Steacie Fellows (2001-2011). **Sources:** Award data from individual awarding organizations. Faculty counts based on Statistics Canada: Salaries and Salary Scales of Full-time Teaching Staff at Canadian Universities, 2001-2002 through 2010-2011: Final Reports.

The quality and impact of the University of Alberta's research capacity is also reflected in the requests that U of A professors receive to provide expert advice on policy and legislation. Examples of significant advisory roles held by U of A professors during 2011-2012 include member of the Expert Panel on Federal Support to Research and Development, appointed by the federal minister of state for science and technology; member of the Human Rights Advisory Council, Canadian Museum for Human Rights; member of the Scientific Advisory Committee, U.S. Bureau of the Census; reciprocal international observer in the Waitangi Tribunal Hearings in New Zealand; and invited witness at the Standing Senate Committee on Legal and Constitutional Affairs, authorized to examine and report on the provisions and operation of the act to amend the Criminal Code.

FIGURE 13 CITATIONS IN ALL FIELDS PER AVERAGE FULL-TIME FACULTY, UNIVERSITY OF ALBERTA AND SELECTED PEERS, 2005-2009, 2006-2010 AND 2007-2011



Notes: Staff figures represent averages for the reported years. 2011–12 UCASS figures are not available. **Sources:** InCites TM, Thomson Reuters, (2012). Global Comparisons, 5-year trends. Canadian university faculty counts based on Statistics Canada: Salaries and Salary Scale of full-time staff at Canadian Universities Reports US university faculty counts based on their respective Common Data Sets for each respective year.

Graduate Students and Post-doctoral Fellows

Graduate students and post-doctoral fellows often form the core of research teams working on complex sponsored research projects, creating strong links with private and public sector partners. Because of the level of knowledge and skill graduate students and post-doctoral fellows bring, professors can pursue large-scale, visionary, and sometimes risky research agendas—agendas that have the greatest potential for producing major discovery and innovation. Thus, top faculty members seek to join institutions with a reputation for attracting strong graduate students and post-doctoral fellows.

The U of A has undertaken to evaluate and evolve its institutional strategies and operations for graduate education structures, systems, and programming. This plan, which encompasses recruitment, financial support, and co-curricular and professional development opportunities, is a critical strategic initiative undertaken to enhance the university's total research and teaching capacity in the coming years.

The U of A also has a strategic priority to roughly double its current post-doctoral fellow cohort (593). The percentage of post-doctoral fellows to full-time continuing faculty continues on an upward trajectory, increasing from 23.8 per cent in 2010-11 to 28.1 per cent in 2012-2013. Training post-doctoral fellows is a distinguishing feature of the CARI's mandate, and thus is particularly important for the U of A as the province's flagship research institution. A challenge in meeting this objective is that fellows are not counted among faculty, staff, or students in determining direct and indirect institutional operating costs and capital plan development.

Competitive and Well-Managed Research Resources

The University of Alberta acquires, sustains, and operates highly specialized and diverse research resources, facilities, and services that support discovery, translational, and pre-commercialization activities. The U of A also provides the platform for regional development and the attraction of external private sector interests in biomedical, medical, livestock, and health sectors. These core research resources, facilities, and services support work undertaken with and on behalf of private and public sector stakeholders to advance the research priorities of the province.

Canada, like other nations, funds programs to ensure that it has globally competitive research and innovation infrastructure. Much of this infrastructure resides within Canada's research-intensive universities, where they are used to train exceptionally skilled graduates and to advance discovery and innovation, often in partnership with external partners. The U of A's success in acquiring these resources depends solely on the excellence of its researchers. The U of A was very successful in the 2012 Canada Foundation for Innovation (CFI) competition, receiving approximately $14 million dedicated to four areas: nanoscience and nanotechology, medical imaging, rehabilitation neuroscience, and environmental chemistry.

There are other institutional core facilities (e.g., animal care facilities, research stations, specialized instrumentation units) that evolve, not directly through infrastructure programs such as CFI, but as a natural requirement of the university's research and training enterprise. The quality of these facilities also contributes to and determines the quality and functionality of Alberta's overall research and innovation capacity.

The U of A aspires to provide competitive research and innovation capacity that operates at the highest level of efficiency for internal and external stakeholders. The university continues to undertake a number of strategies with its available resources to cover direct operating costs.

To obtain the greatest efficiency it can through these steps and others, the U of A looks forward to working with the Ministry of Enterprise and Advanced Education to identify new ways to effectively sustain these core research and innovation platforms.

Appendix 9 provides details on funding gaps related to specific specialized research platforms associated with Alberta priorities, to the indirect costs of post-doctoral fellow training, and to sustaining core facilities that serve external stakeholders.

Areas of Capacity and Alberta's Priorities

The University of Alberta takes a lead role in supplying Alberta with the research capacity it requires to achieve the continued and improved social well-being of its citizens, especially within a global context. Three of these objectives, as identified in the 2012 *Alberta Research Innovation Plan,* are the following.

- *Effective Resource and Environmental Management:* manage the cumulative economic, social, cultural, and environmental effects of past, present, and foreseeable land-use activity associated with developing all of Alberta's natural resources through advances in identifying and understanding the complex environmental and social considerations for informed land-use; defining appropriate analytic methods and data collection protocols to be developed with economic, social, and environmental risk assessment as a central component; developing and deploying advanced technologies to measure and mitigate cumulative effects; and understanding the complex interplay of social, cultural, economic, and environmental factors that determine the consequences of environmental and resource management decisions.

- *A Broadened Economic Base:* develop a bioeconomy that transforms the province's biological resources into new sources of energy, new industrial sectors and value-added products, and new economic opportunities for rural communities and producers.

- *Resilient, Healthy Communities:* provide individual Albertans and communities with effective, inclusive, and accessible structures and systems for health services, education, and cultural engagement so that they can embrace regional and global changes and opportunities.

The sections below present brief descriptions of the University of Alberta's research capacity in its seven thematic areas, with details on recent and projected capacity growth, as well as on the contributions the institution's research capacity makes to Alberta's research priorities. Refer to Appendix 8 for details on the U of A's investment in these areas, through research chairs, centres and institutes, and infrastructure, as well as for information on the university's special capacity within each theme.

The U of A has also undertaken a water initiative that leverages and enhances the water research capacity that exists across 120+ water researchers, and a host of existing centres, international and industrial partnerships, specialized core facilities, and research land holdings. This initiative builds on the university's research capacity developed in four areas over the last several decades: energy, environment, agriculture, and health. Over time, research activities undertaken at the U of A have placed a greater emphasis on water—particularly the pressing global challenges that emerge where issues relating to energy, environment, agriculture, and health intersect. Water research is also forming the basis for new international partnerships in China and Brazil (see International Collaborations). The U of A's water initiative will integrate scientific, technological, and socio-economic research approaches to tackle major challenges, such as water usage and conservation in resource extraction and agriculture, and water quality. Through close collaboration with Alberta Innovates corporations and with international advisors, the initiative aims to enhance the university's contribution to solving both Alberta's water challenges and global water challenges.

HUMANITIES AND FINE ARTS

Humanities and fine arts scholarship advances clarity, insight, and understanding about cultural development and interactions, historical influences and contexts, awareness and construction of meaning, and the multiple media and creative activities that individuals, societies, and cultures use to express themselves and their ideas.

The U of A has increased its capacity in the areas of visual expression, indigenous languages and cultures, and philosophy. Intended areas of growth include performing arts, philosophy, indigenous and First Nations scholarship, cross-cultural studies, and languages, especially related to East Asia and China.

Impact on Alberta: Alberta's vision for healthy and resilient individuals and communities has identified culture, community engagement, and "inclusion" as central areas of concern. U of A research capacity enables these notions to be framed and understood within the 21st-century context of globalization pressures. Strong capacity exists in the history and cultural expression of peoples, both indigenous and new to Alberta. Application of this capacity has led, for example, to the development of agriculture management policies and programs in other provinces (e.g., Manitoba) as they affect First Nations' participation in an agricultural economy. The U of A's humanities research capacity also underpins some of the institution's new entrepreneurship initiatives and anchors new international activities.

Fine arts scholarship at the U of A sustains and enriches the cultural environment of Alberta's capital region, and drives the region's cultural and artistic economic sectors, enhancing Alberta's competitiveness and global marketability as a jurisdiction for both industries and individuals. The university's investment in this area directly advances the cultural experiences and opportunities of Alberta's citizens through activities at the Timms Centre for the Arts, the Camrose Performing Arts Centre, and Convocation Hall. The U of A also contributes through on-going interactions with symphonies, theatre companies, the Edmonton Fringe Festival, the Works, and the Art Gallery of Alberta. Other examples include the university's Festival of Ideas, presented in partnership with the Edmonton Arts Council of the City of Edmonton, and activities undertaken within centres and institutes focused on francophone heritage, central and eastern European cultures, China, and Japan.

SOCIAL STRUCTURES AND SYSTEMS

Social sciences advance the understanding of how social structures, institutions, and systems evolve, act, and interact to influence the behaviour, effectiveness, and well-being of individuals, groups, regions, and nations. Society's changing educational, political, economic, and legal objectives are realized through advances and innovations in its social structures and systems.

The U of A has increased its research capacity in the areas of educational measurement and policy; legal studies, particularly corporate, criminal, and Aboriginal law; economics (including natural resource economics), corporate sustainability, and business finance; political and social structures; and information privacy, access, and protection. Areas for intended future growth include corporate social responsibility, international business, innovation and entrepreneurship, Aboriginal social structures and systems, and educational technology.

The U of A is the lead institution for the multidisciplinary CIHR Alberta Network Environments for Aboriginal Health Research, which assembles professionals in Aboriginal health care, education, public health, sociology, nursing, and nutrition. As well, the U of A's Aboriginal Health and Education initiative investigates culturally appropriate health care and services, and indigenous approaches to health service and delivery issues.

Impact on Alberta. Alberta's research agendas for managing cumulative effects of resource development and for developing a bioeconomy identify notions of "social licence," corporate responsibility, community resiliency, and engagement as central challenges. The U of A provides broad socio-economic research capacity for addressing these complex challenges. This capacity can inform policy and program development related to areas such as market-based instrument programs for the provision of natural resources such as water; land use; community response to climate and population change pressures; and the collaborative community management and use of natural resources. Research capacity in professional learning, communities of practice, and lifelong learning also directly addresses the labour and workplace needs of both urban and rural communities.

The U of A's continued investment in educational technology, as well as educational research and learning programs with Aboriginal partners, contributes to ensuring effective and inclusive educational systems and structures in both urban and non-urban communities. The U of A intends to develop additional research capacity development in entrepreneurship, innovation ecosystems, and technology commercialization; these topics have emerged as key issues within Alberta's diversification agenda.

SCIENCE AND TECHNOLOGY

The U of A sustains and develops expertise and impact in the natural and physical sciences, engineering, human behavioural sciences and neurosciences, mathematics and statistical sciences, computing sciences, nanoscience, and nanotechnology. The U of A aims to lead and to participate in national and global efforts aimed at advancing fundamental discoveries, particularly in domains such as space sciences and physics, which require the intellectual resources of multiple nations and institutions.

The U of A has increased research capacity in ecology; plant sciences, food sciences, epigenetics, and bioproduct development; theoretical and applied mathematics; astronomy; nanotechnology and nanoscience; and biomedical engineering. Areas for future growth include these areas, as well as land use planning, chemistry, drug production and drug toxicology, rehabilitation sciences, and neurosciences.

Impact on Alberta. The U of A's ability to lead and participate in multinational "big science" efforts in areas such as space sciences, climate change, and physics contributes to Alberta's intellectual reputation and global impact, and creates scientific and engineering training opportunities for Alberta students at the most elite science installations across Canada and the world (e.g., CERN). The U of A's capacity is also well established in provincial priority areas of nano, ICT, and "-omics," which serve as platform sciences for innovations in education, health, the bioeconomy, and sustainable energy and environment.

Research capacity in data analytics, identified as a strategic priority for AIberta Innovates - Technology Futures, continues to advance with the additional opportunities provided by the IBM-Alberta Centre for Advanced Studies. Areas of focus in data analytics that support Alberta priorities include earth observation sciences resource geosciences, remote sensing, and drug design. Theoretical and applied mathematics and statistics serve as additional "platform" disciplines that enable advances in these areas as well as in economic and social modelling, business and finance, and industrial analytics. The university's capacity in next-generation modelling methods, sciences, and technologies for environmental and natural resource applications (e.g., exploration, prediction, and monitoring) continues to support collaborative research projects with several Alberta ministries and with international partners in Germany and Brazil. Work in human cognition and behaviour contributes to evidence-based policies and practices for optimizing child and family development, developing innovative educational technologies, and

diagnosing and treating neurological disabilities, diseases, and disorders, especially related to aging. These broad topics and related ones are signalled as priority concerns by different ministries in their respective strategic plans.

ENERGY

The University of Alberta's cross-disciplinary and cross-sector energy research addresses all aspects of conventional and non-conventional energy development and distribution, environmental sustainability, and economic analysis, market instruments, and policy.

The U of A has recently increased its research capacity in all aspects of sustainable energy exploration, recovery and processing, including new carbon sequestration policies, natural resource and energy economics, resource geosciences, and hydrochemistry. There is intended capacity building in these and other areas.

Impact on Alberta. Much of the U of A's sustained and continued growth in energy research advances the broad objective of sustainable energy and environment, especially in areas of water usage, treatment, quality, and supply. This work is supported by capacity in chemical engineering, chemistry, nanoscience, and microbiology; economic policy analysis; land use impact; and advanced ICT. The integration of disciplines within energy research, broadly defined, is a key strength of the University of Alberta, enabled by sustained and continued growth in natural resource economics; ecology and environmental sciences; and the emergence of nanoscience and molecular biology, among others. This collective capacity continues to feed into Alberta's broad resource stewardship objectives and specific objectives set by Alberta Innovates – Energy and Environment Solutions, such as reducing or eliminating the use of water and tailings ponds in oilsands processing, effectively treating existing waste water and tailings ponds, developing science and technology for improved waste water quality in the future, addressing socio-economic issues arising from the cumulative effects of resource development, and analyzing the consequences of policy decisions in areas that include market-based approaches to land use and environmental quality objectives. The U of A's strength in energy research is the foundation for its international partnerships in Germany, China, India, and increasingly Brazil, which furthers Alberta's goals for global interactions and connections with international industries.

ENVIRONMENT

Environmental research advances scientific understanding, advanced analytic techniques and technologies, and best practices that are collectively required to sustain healthy ecosystems of water, air, plant, and animal life. It also examines the interaction of ecosystems with the physical health of individuals and the socio-economic health of communities, especially in response to both natural and human-induced pressures.

The U of A has increased its capacity in ecology and ecosystems; biogeochemistry for whole ecosystem functioning; natural resources, energy, and environment; environmental law; environmental health sciences; soil sciences; and sustainable forests, agriculture, and rangelands. Further capacity growth is intended in most of these areas, and also in remote sensing technologies for environmental sciences.

Impact on Alberta: Environmental research at the U of A draws upon physical and biological sciences, public health, chemistry, information and communications technology, computing sciences, law, economics, business, nanoscience, and mathematics. This capacity provides the advanced research foundation for integrated science, economic, and social policy development required for responsible environmental stewardship and the sustained health of individuals and communities, especially outside of urban areas. Much of this expertise is applied directly

to the Alberta context, through advisory and research relationships with multiple ministries and the Alberta Innovates Corporation. This includes expertise in the environmental and social considerations for informed land use; the development of analytic methods and data collection protocols to measure and assess economic, social, and environmental risk; and advanced life sciences research on water, air, and soil quality and its relation to human and wildlife health. The U of A's strength in environmental research forms the basis for international partnerships in Germany and China.

The U of A will sustain and continue to develop capacity in the development and deployment of advanced technologies to measure and mitigate the cumulative effects of resources development. Water quality in non-urban communities is one of three strategic focus areas within the university water initiative. This work leverages extant public health and environmental chemistry capacity, and socio-economic capacity necessary for assessing the impact of water quality on the economic and social sustainability of Alberta's small communities, and on recreation and tourism in non-urban areas. This capacity supports Alberta's priorities and objectives for healthy and resilient communities, and for informed environmental stewardship policies.

FOOD AND BIO-RESOURCES

Research in food and bio-resources is directed at discovering and applying the knowledge necessary for developing sustainable bio-economies; enhancing the health qualities of food and the resilience of crops, plants, and forests in response to human and climate-induced pressures; and addressing agribusiness sector challenges in food safety and animal health.

The U of A has increased research capacity in epigenomics, lipid utilization, agribusiness economics, and nano-enabled biomaterials. Areas identified for further growth include bio-resource technologies; food security and safety; sustainable agriculture; cross-disciplinary nutrition and food sciences, including nutrigenomics and epigenetics; social responses to ecological changes in food production; water supply and sustainable agriculture and forestry; and chemical ecology.

Impact on Alberta. The U of A's capacity in food production and the bio-economy—bioproducts, biomaterials, and bioenergy—creates the knowledge base for achieving provincial economic diversification. This capacity is built on depth in disciplines that include genetics, food and soil sciences, molecular biology, nanotechnology, and resource economics. Integrated research in petrochemicals, nanoscience, biochemistry, proteomics, and systems biology is leading to the development of value-added products from the waste produced by wood, plants, and crops. The development of a nano-enabled biomaterials program, leveraging the NINT investment, represents a significant new trajectory for Alberta's bio-economy.

Nutrigenomics and plant genetics research is also advancing the food value of crops and their resistance to drought and disease. Much of the U of A's food and bio-resource research is done in collaboration with industrial partners from the agribusiness sectors and ministries, and includes a strong commercialization component. In addition, the university's water initiative has identified the future of Alberta's water supply as a key research focus. Southern Alberta's agricultural and food production regions are currently affected by climate- and human-induced (e.g., population growth) stresses on water supply, and these stresses are predicted to increase over the coming decades. U of A cross-disciplinary capacity in sustainable agriculture, socio-economic analysis, and climate change can provide Alberta's decision-makers with the understanding needed to develop effective policies that will help sustain these regions and communities.

HEALTH AND WELLNESS

The U of A undertakes a fully integrated approach to human health and wellness research and training, one that addresses the full spectrum of human health determinants, including clinical factors and predispositions, socio-political and economic environments, and individual characteristics and behaviour. Activities advance and integrate discovery research, translational research, and clinical research across medical and life sciences, health professions, computing sciences, economics and law, nanoscience, engineering, and technology assessment.

Capacity has increased in the areas of mental and family health, environmental health sciences, individual behavioural determinants of health (e.g., lifestyle, nutrition, exercise, and sports medicine), neurosciences for motor and cognitive rehabilitation and skill development, patient health management, pharmaceutical sciences, community health service delivery, knowledge translation and health-care systems, prions, cardiology and neurosurgery, biochemistry (prions), microbiology and immunology (viruses), pediatric illnesses and diseases, medical genetics, oncology, health economics, global health, diagnostic imaging, emergency medicine, and dentistry. Intended capacity growth is planned in many of these areas as well as for speech pathology and audiology, pharmacology, family medicine, and internal medicine.

Impact on Alberta. Strategically, the U of A developed its health research expertise and reputation primarily around a small set of health and wellness concerns (e.g., chronic diseases, cardiology, oncology, infectious diseases, mental health, and special populations), with significant capital and operating investment in facilities for medical research, clinical research, and advanced clinical treatments. It has enhanced its impact with increased investment in translational research; social, cultural, environmental, and population health influences on individual and community health; biomedical engineering; health economics; and patient management and care. The Edmonton Clinic Health Academy supports institutional and provincial objectives for inter- and intra-professional health and wellness research and training.

The U of A continues to advance a range of priorities and objectives for Alberta Innovates - Health Solutions and for Alberta Health Services, from improved health delivery systems to personalized medicine. Research chairs established in conjunction with Capital Health and AI-HS also provide targeted capacity in areas of provincial priority, including emergency medicine, surgical simulation, cardiology, public health, epigenetics, and health outcomes. Finally, the U of A's five-year contract to serve as one of 11 evidence-based practice centres with the U.S. Agency for Healthcare Research and Quality will connect external expertise and capacity with Alberta stakeholders and issues.

Advancing Alberta's Innovation Ecosystem

The University of Alberta strives to be a key contributor to the development of Alberta's innovation ecosystem. The U of A will continue to invest in technology transfer and commercialization initiatives that assist in commercializing ideas developed within the institution, as well as those emerging from Alberta's broader innovation ecosystem. These investments will include developing and supporting entrepreneurship programs (see page 53); entering into long-term partnerships with municipal, provincial, and federal stakeholders; and developing facilities to foster commercialization with industries. Examples of these include the following:

- *The medical isotope and cyclotron facility* is a strategic institutional investment to produce medical-grade isotopes, creating the potential for a medical diagnostic treatment and imaging sector within Edmonton and Alberta.

- *The National Institute for Nanotechnology* (NINT) is a strategic partnership among the Government of Canada, the National Research Council, the Government of Alberta and the U of A, operated jointly by the NRC and the U of A, undertaken to increase the competitiveness of Canadian companies, to create technology solutions to meet the needs of society, to expand transformative programs to train the next generation of researchers and entrepreneurs, and to enhance Alberta and Canada's stature as global leaders in nanotechnology.

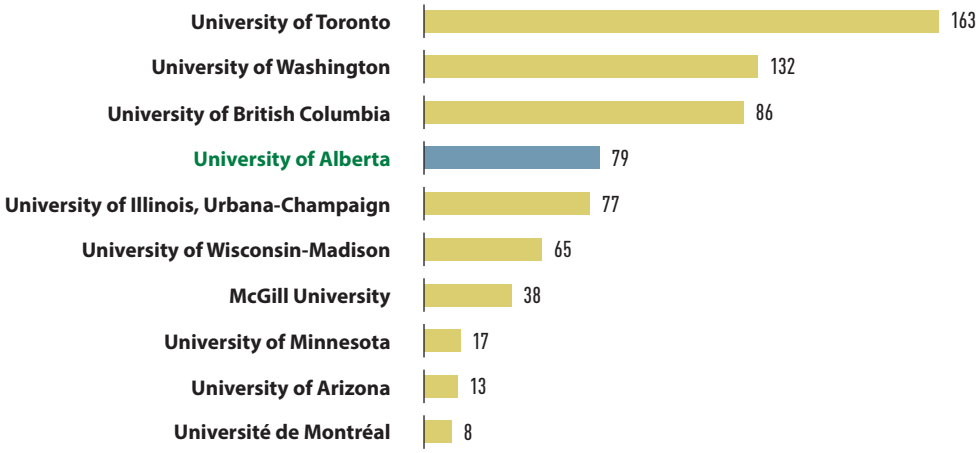
- *TEC Edmonton* is a joint venture between the U of A and the City of Edmonton that serves as the institution's dedicated entity for incubating spinoff companies, advances a number of technology transfer and partnership objectives, and provides executives-in-residence programs, seminars on intellectual property and company development, and entrepreneurship training for faculty, staff, and students.

- *The Drug Development and Innovation Centre* facilitates successful approval of pharmaceutical products, offering expertise in accelerated drug candidate commercialization, early risk assessment, analytical testing, and regulatory affairs suitable for small- to medium-sized enterprises.

- *Agri-Food Discovery Place* links academic leadership with industry partners, provides bio-product processing capabilities, and brings applied research through commercialization to the marketplace in the areas of food safety, ag-industrial technologies, functional food, and natural health products.

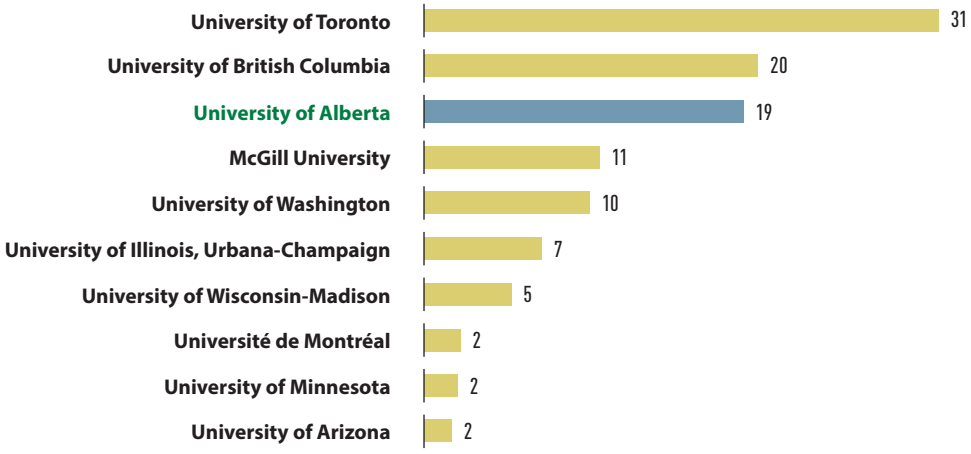
The number of continuing spinoff companies is a measure of how a research-intensive university, situated within its particular innovation ecosystem, creates technologies that will contribute to society's well-being and commercialization opportunities. Within our benchmark group, the U of A performs well, ranking above several highly regarded U.S. public institutions.

FIGURE 14 CONTINUING SPINOFFS 1991-2010



Notes: Startups still in operation reflect companies started at any time during the report period that are still in operation as of the most recent AUTM Licensing Survey. **Source:** AUTM Licensing Surveys

FIGURE 15 CONTINUING SPINOFFS PER 1 BILLION $ OF TOTAL RESEARCH EXPENDITURE 1991-2010



Notes: Startups still in operation reflect companies started at any time during the report period that are still in operation as of the most recent AUTM Licensing Survey. **Source:** AUTM Licensing Surveys

The Digital Environment

PRIORITY: The University of Alberta has secure information and communications technology infrastructure and systems that support research, creative activities, and digital learning technologies and pedagogies to enhance the on-campus, in-class experience and online learning environments.

The information and computing technologies infrastructure at the U of A is complex. It includes networks to connect buildings and campuses, wireless services, and additional specialized local networks. This infrastructure is the foundation of the U of A's digital environment that supports its academic, research, and administrative requirements, and its aspirations for efficiency and innovation.

Advances in information and communications technology, especially in the arena of mobile computing, continue to transform learning environments. In 2012, the U of A began to engage more aggressively in developing and expanding the use of advanced learning technologies and their related pedagogies in undergraduate and graduate education. Although the focus of current media attention is online learning, opportunities for innovation go well beyond teaching to include research in education (pedagogy, instructional delivery techniques, learning outcomes assessment), computing science (adaptive learning experiences, automated assessment, collaboration tools, security), humanities (analysis of privacy, collaboration, ethics), and business (case study analysis, market trends, analytics). These are the areas in which the U of A is expanding its engagement in the digital environment.

To leverage such opportunities for innovation and leadership in digital learning and research, and based on a critical mass of internationally known and respected research and teaching expertise already in place, in 2012:

- The U of A signed a memorandum of understanding with online education provider Udacity for collaborative experimental work on online learning management systems, with the goal of developing, testing, and implementing a small number of high-quality and distinctive massive open online courses (MOOCs) based on select U of A courses. The U of A's strength in educational technology, post-secondary pedagogy, and machine-learning research made it an attractive partner to this U.S. company.

- The U of A's first MOOC, Dino 101, is planned for implementation in Fall 2013.

See Appendix 10 for details on selected e-learning and digitally supported teaching and learning activities across U of A campuses, including the following:

- The U of A has innovative and popular digitally supported physical therapy satellite programs in Calgary and Camrose. These programs were initiated to help deal with the supply and demand issues related to therapists that have occurred in rural and southern Alberta.

Access and Programming Measures

QUALITY

- admissions averages
- application to registration yield
- ratios of undergraduate to graduate students, professors to all students, professors to graduate students
- student satisfaction

THE LEARNING ENVIRONMENT

- participation rate in Centre for Teaching and Learning programming and number of Teaching and Learning Enhancement Fund applications
- number of national teaching award recipients
- student satisfaction
- number of rural and francophone students
- number of Aboriginal students, faculty, and staff
- number and diversity of international students
- retention and completion rates for undergraduate and graduate students

STUDENT EXPERIENCE AND ENGAGEMENT

- application, admission, and registration yields
- retention and completion rates
- student satisfaction
- average financial support for students
- number of funded internship and undergraduate research opportunities
- number of study abroad and international internship opportunities

INNOVATIVE PROGRAMMING

- number of new programs approved and/or implemented
- application, admission, and registration yield rates

CONNECTIONS AND COLLABORATIONS

- number of new collaborative partnerships each year
- participation rates in internship and study abroad programming

Access and Programming Strategies and 2012 Outcomes

QUALITY

Strategies

- Attract and retain outstanding students.
- Provide foundational support structures for students to create positive student experiences and engagement.
- Recognize and celebrate student accomplishments.
- Maintain a system of quality assurance processes and mechanisms to ensure the programs offered by the University of Alberta are of the highest quality.

Outcomes

- Megan Engel, a master's student in biophysics, was awarded a prestigious Rhodes Scholarship.
- The Pharmacy and Pharmaceutical Sciences undergraduate research program was expanded to encourage undergraduate students to consider graduate education. Funding has been obtained from CIHR, Alberta Innovates - Health Solutions, Boehringer Pharmaceuticals, and Canada's Research-Based Pharmaceutical Companies to support this initiative.
- Reviewed transfer credit issues across U of A campuses with the intent to improve practices and procedures and reduce barriers to students. Resulting recommendations are currently being implemented.
- The Teaching English as a Second Language program has been re-accredited by the National Association of Teachers of English as a Second Language.
- The Counselling Psychology doctoral program has been re-accredited for a five-year period by the Canadian Psychological Association.
- The Pharmacy and Pharmaceutical Sciences undergraduate program received a full six-year accreditation.
- The School of Public Health received accreditation from the U.S. Council on Education for Public Health, the first Canadian public health program to receive accreditation.
- Nursing received national accreditation by the Canadian Association of Schools of Nursing.
- Comprehensive review of Physical Education and Recreation undergraduate offerings is to be completed in 2103. Resulting program changes will take effect in the 2014-15 academic year.
- Agricultural, Life and Environmental Sciences has implemented undergraduate program review changes to ensure students have the specific competencies required to meet employer needs.
- The Bachelor of Science General program was restructured to identify and articulate the core of each major and minor. The new program structure is to be implemented in Fall 2014.
- The Master of Arts Program in Canadian Studies offered by Campus Saint-Jean underwent significant review during 2011-2012; changes are being implemented in 2012-13.
- Resource Economics and Environmental Sociology was ranked first in Canada and 21st in world by the Economic Research Division of the Federal Reserve Bank.
- The creation of Student Connect, a "Student First" focused space, provides exceptional registrarial and service needs for student success.
- The Agricultural, Life and Environmental Sciences Student Services Office was reorganized to provide a one-stop shop to advise and assist students.
- The Graduate Teaching and Learning Program, open to all graduate students and post-doctoral fellows, provides training in university instruction.
- The Attributes and Competencies Subcommittee of the GFC Committee on the Learning Environment has completed a draft list of attributes and competencies that characterize a U of A graduate.
- Campus Saint-Jean has developed and is implementing a core set of skills, attributes, and values. As well as reviewing language programs en français, in English as a

second language, and en anglais to ensure greater levels of proficiency upon graduation; and reconfiguring each section of bachelor's and master's programs.
- Augustana Campus has completed a draft of faculty-wide rubrics for the assessment of student learning in core competencies (information literacy, critical thinking, speaking, writing).
- Augustana Campus has developed program-level learning goals and four-year maps to a degree for every major.
- The Community Wellness Program continues to provide support and counselling to individual students, monitor the current state of wellness at the U of A, and develop and maintain a campus support system. Highlights include outreach to more than 5,000 students during orientation and providing one-to-one counselling for students in need.

THE LEARNING ENVIRONMENT

Strategies

- Ensure a high level of teaching quality.
- Ensure a diversity of students and faculty.
- Ensure the development and maintenance of quality formal and informal learning spaces.
- Enhance the digital environment and online presence of the institution.

Outcomes

- 2,511 faculty, staff, and students attended 136 professional development sessions at the Centre for Teaching and Learning.
- Engineering has students from more than 220 communities in Alberta. The undergraduate enrolment includes 50 Aboriginal students (up from eight just a few years ago), more than 330 students from other provinces in Canada, and 504 international students on student visas.
- Engineering undergraduate enrolment is at an all-time record level, and is in the top five per cent by size (and quality) in North America.
- Agricultural, Life and Environmental Sciences international undergraduate students grew from five per cent to 14 per cent and graduate students increased from 26 per cent to 53 per cent over the past five years.
- Arts increased international undergraduate student enrolment to 1,004 students from 71 countries (up from 796 students from 53 countries last year).
- Planning and design have been completed for the Physical Activity and Wellness (PAW) Centre.
- The Safe Spaces Strategic Plan was developed based on community input.
- Electronic submission of grades was implemented. The electronic system streamlines the grade entry process.
- Changes to the Assessment and Grading Policy were reviewed and approved.
- The new Encryption Procedure was approved. The procedure provides the institutional standard for encryption of mobile devices that store sensitive information.
- Physical Education and Recreation incorporated the use of simulation into the Advanced Athlete Therapy Methods and Techniques course. Plans to expand this initiative are underway.
- Undergraduate scholarship processes were revised to develop an electronic scholarship application and administration system that is integrated into Campus Solutions.

STUDENT EXPERIENCE AND ENGAGEMENT

Strategies

- Improve admissions and registration processes for all students.
- Support programs and initiatives to help increase retention and completion rates.
- Provide enhanced experiential learning opportunities.
- Enhance extracurricular and co-curricular learning opportunities (i.e., supporting services, activities, and campus facilities that encourage and help facilitate student success).
- Continue to create international opportunities for students.
- Provide foundational support structures for students in order to create a nurturing environment that allows for positive student experience and engagement.
- Provide foundational support structures for Aboriginal students to create an environment that allows for positive student experience and engagement.
- Create a safe and secure environment on U of A campuses that is supportive of a positive student experience.

Outcomes

- The U of A is implementing an online application system for graduate admissions, which will allow for electronic submission of documents and will reduce departmental processing times.
- The Students on Alternate Routes Task Force finalized their report after a review of programs and processes for handling students at risk academically with an aim to improve student retention and maintain the U of A's reputation as a first-rate, fair, and caring institution.
- Augustana Campus has developed an early feedback system that allows early invention and identification of students experiencing difficulty or not attending classes.
- The Community Wellness Program continues to provide supports and counselling to individual students, monitor the current state of wellness at the U of A, and develop and maintain a campus support system. Highlights include outreach to more than 5,000 students during orientation and providing one-to-one counselling for students in need.
- The U of A hosted the first anti-hazing workshop in March 2012 for staff and students involved in residences, sports teams, Greek life, and other student groups to inform them about the consequences of hazing and how to engage in alternate activities.
- The Co-curricular Record (CCR) continues to evolve from its origins as a pilot program in 2011. Students who volunteer in certain university or Students' Union services are eligible to apply for a CCR.
- The Emerging Leaders Program is designed to develop and enhance leadership and citizenship skills and knowledge among student leaders. The first cohort of participants in Spring 2012 received a non-credit certificate and recognition through their co-curricular record.
- The Students' Union engaged 4,979 students, staff, and faculty in retaking the record for the world's largest dodgeball game on February 3, 2012. The event galvanized student spirit and engagement, fostering an active pride in the U of A among students, staff, and faculty.
- Physical Education and Recreation provided funding to sponsor undergraduate student participation at the Alberta Recreation and Parks Association Conference.

- The Alberta School of Business developed a competitions co-ordinator position to provide logistical support to students attending local and national competitions, and ensure that students have adequate academic and financial resources.
- In 2012, U of A MBAs successfully hosted the MBA games, the largest and most comprehensive MBA competition in Canada. MBA students participated in eight competitions, winning one and achieving three other top three finishes.
- Engineering students participate in up to 12 major student design competitions each year (EcoCar, formula SAE racecar, great northern concrete toboggan, etc.).
- Chorale Saint-Jean toured France to much acclaim.
- Enhanced orientation and settlement services were made available for international graduate students by co-ordinating existing services and creating new programming.
- In September 2012, Native Studies, along with the Native Studies Student Association, implemented a mentorship program for first- and second-year students.
- Eight students were introduced to post-graduation opportunities during an internship tour of the financial industry in New York City.
- Agricultural, Life and Environmental Sciences offered students international engagement opportunities including field courses (Mexico, Germany), student exchanges (Japan), community service-learning (Cuba, Mexico), and international competitions (won Platinum Award, North American Intercollegiate Dairy Challenge).
- The Alberta School of Business has enhanced the internationalization of its programs, including 70 incoming exchange students, 52 outgoing exchange students and two study tours in the spring of 2012, one to China and one to Europe.
- U of A+, a program to assist international undergraduates in their academic success, was launched in August 2011. This program was expanded to two weeks in August 2012, and 68 students from 11 countries participated.
- The Campus Saint-Jean "Leaders of Today – Me to We" agreement was renewed, allowing a group of students registered in the Bachelor of Education program to teach and do humanitarian work in Kenya.
- The Play Around the World program expanded from Thailand to include sites in Cambodia, offering students a significant international community engagement experience.
- Agricultural, Life and Environmental Sciences conducted its first-ever highly successful co-curricular "Alternative Reading Week" program in India.
- Nursing is advocating for stipends to support graduate students in studying full-time. In Fall 2012, full-time students with availability of a stipend of $75,000 increased to 20 Master of Nursing students.
- Student awards of $5,000 each were created to support students who use their legal education to provide community service through a volunteer organization.
- The student financial support model for education abroad was overhauled to a more simplified, transparent, and campus-wide model. Approximately 500 scholarships were awarded in 2012, up from fewer than 200 in 2011.
- First-time opportunities for Bilingual Nursing program undergraduate student learning were offered in Ghana.

PROGRAMMING

Strategies

- Continue development of innovative programming to meet the needs of students and the community.
- Increase access to current high-demand programs.
- Ensure appropriateness and relevancy through course and program reform.
- Provide valuable laddering opportunities from high school to post-secondary study, undergraduate to graduate study, and post-secondary study to professional experience.
- Continue to offer a range of lifelong learning opportunities through continuing and professional education programs.

Outcomes

- A new undergraduate curriculum for the pharmacy program is being created that will lead to the PharmD degree for all pharmacy students.
- Comprehensive review of Physical Education and Recreation undergraduate offerings is to be completed in 2013. Resulting program changes will take effect in 2014-15.
- Agricultural, Life and Environmental Sciences has implemented undergraduate program review changes to ensure students have the specific competencies required to meet employer needs.
- The Bachelor of Science General program was restructured to identify and articulate the core of each major and minor. The new program structure is to be implemented in Fall 2014.
- The Master of Arts Program in Canadian Studies offered by Campus Saint-Jean went through significant review during 2011-2012 and the changes are being implemented this year.
- Nursing completed an extensive review of the PhD Program and implemented curriculum changes to help prepare scholars who are global leaders and innovative researchers.
- The Attributes and Competencies Subcommittee of the GFC Committee on the Learning Environment has completed a draft list of attributes and competencies that characterize a U of A graduate.
- Campus Saint-Jean has developed and is implementing a core set of skills, attributes, and values, as well as reviewing language programs en français, in English as a second language, and en anglais to ensure greater levels of proficiency upon graduation, and reconfiguring each section of bachelor's and master's programs.
- Augustana Campus has completed a draft of faculty-wide rubrics for the assessment of student learning in core competencies (information literacy, critical thinking, speaking, writing).
- Augustana Campus has developed program-level learning goals and four-year maps to a degree for every major.
- The Pharmacy and Pharmaceutical Sciences undergraduate research program was expanded to encourage undergraduate students to consider graduate education. Funding has been obtained from CIHR, Alberta Innovates - Health Solutions, Boehringer Pharmaceuticals, and Canada's Research-Based Pharmaceutical Companies to support this initiative.
- Undergraduate engineering programs have been expanded and developed in key areas of student and employment demand (energy, biomedical,

nanoengineering) while continuously increasing the quality (academic achievement, leadership abilities) of the new students.
- Nursing initiated a new post-doctoral fellowship program for scholars from low- and middle-income countries.
- Agricultural, Life and Environmental Sciences is participating in CONFOR-M, which allows students to pursue a joint Canada-European master's degree in forest science.
- Engineering implemented a major expansion of its co-operative education program. The number of work term placements increased from 1,148 in 2005 to a record level of 1,578 in 2011. Notwithstanding the continuing difficult employment market in 2011, 97 per cent of the co-op students were placed in paid work terms.
- Nursing began piloting pass/fail nursing clinical experience as a strategy to address student concerns regarding the impact of competition on learning.
- Pharmacy and Pharmaceutical Sciences received scholarship support for the newly approved dual MBA/BSc in Pharmacy program through a $200,000 endowment from Shoppers Drug Mart.
- The Department of Physical Therapy, in partnership with the Physiotherapy Alberta College and Association, received funds from the federal government to establish an upgrading program for internationally educated physical therapists. The program will launch its first course in May 2013.
- The Master of Nursing stream for Family All Ages (FAA) nurse practitioners (NPs) will be accepting new admissions again after a few years in which the program was not offered. The proposed change is in response to Ministry of Health interest in NPs for family care clinics.
- Extension's Community-Based Research and Evaluation program was created to support graduate students' efforts to develop their ability to participate in and lead community-based research and evaluation projects.
- Science joined a North American initiative, Women in Tech Share Online (WitsOn), intended to motivate women to pursue careers in science or technology.
- Education implemented year one direct entry admission enabling targeted and immediate recruitment of excellent high school graduates.

CAMPUS ALBERTA AND CANADIAN CONNECTIONS AND COLLABORATIONS

Strategies

- Increase interdisciplinary, collaborative program and initiative development in order to offer students innovative and relevant educational opportunities.
- Maximize program innovation at the Campus Alberta level in order to create exciting learning opportunities and program efficiencies.
- Maximize program innovation in collaboration with national partners in order to create exciting learning opportunities.

Outcomes

- The Health Sciences Council is conducting strategic planning focusing on innovative ways to collaboratively promote health and wellness.
- The Global Education Program co-ordinated more than 30 events in partnership with community, faculty, and student groups, promoting dialogue on critical global issues.

- 480 high school students from northern Alberta gathered at the 2012 High School Model United Nations Conference, discussing possible "resolutions" to many contemporary global issues. The conference is run entirely by undergraduate students.
- Engineering hosted a large number of elementary, middle and high school students during the Discover E camps that expose students to the excitement of engineering, technology, and science. During 2012, 111 week-long camps were offered in rural and Aboriginal communities across western and northern Canada, with 2,102 students (38 per cent female) participating. Discover E reached more than 9,000 students in many northern communities in Alberta, British Columbia, the Yukon and the Northwest Territories. A total of 4,376 Aboriginal students were reached through Discover E's activities in 2012, an increase of almost 40 per cent from 3,142 Aboriginal students in 2011.
- Medicine & Dentistry and the School of Public Health have collaborated closely with the University of Calgary, University of Lethbridge, Alberta Innovates - Health Solutions, and Alberta Health Services in the Campus Alberta Health Outcomes and Public Health Initiative.
- The Campus Alberta Health Outcomes and Public Health partners have been engaged with CIHR on the development of the Strategy for Patient Oriented Research (SPOR) SUPPORT Unit for Alberta.
- Medicine & Dentistry has been collaborating closely with Alberta Health Services on the development of strategic clinical networks (SCNs). Six SCNs were launched in 2012 and another six will be launched in 2013, each in core areas of clinical care.
- Health Promotions students from First Nations across Alberta, sponsored by First Nations Inuit Health, completed the Aboriginal Health Promotion Citation program. Currently another 26 are enrolled, all of whom are expected to graduate in June 2013.
- Medicine & Dentistry, along with the University of Calgary, are defining a biobanking strategy for the province.
- Rehabilitation Medicine offered three new workshops in partnership with external agencies (Alberta Health Services, Medichair, Spinal Cord Injury Treatment Society, Restorative Therapies, University of Calgary, McCaig Institute for Bone and Joint Health, Alberta Osteoarthritis and Alberta Innovates). The workshops covered topic areas in Sitting Solutions, Functional Electrical Stimulation, and Total Knee Arthroplasty. The workshops attracted more than 200 clinicians, U of A students, and members of the public.
- The departments of Physical Therapy and Speech Language Pathology operated student clinics to treat clients referred from the community.
- Rehabilitation Medicine, in conjunction with the Glenrose Hospital, developed the first student-led rehabilitation clinic in Alberta. Due to the success of this program, there will be expansion into pediatrics in 2013.
- Extension hosted the national conference "CLLoC 2012 - Celebrating Lifelong Learning in Our Communities." The conference celebrated the process of engagement between sponsors of lifelong learning and their surrounding communities for the purpose of creating a culture of lifelong learning.

Internationalization: Strategies and Outcomes

Strategies

- Selectively expand existing consortia and develop new ones that advance institutional objectives for innovative learning opportunities and for diversified excellence and impact across disciplines.
- Develop initiatives that create opportunities for joint projects, student mobility, undergraduate and graduate student recruitment, and international funding.
- Pursue global impact opportunities through CIDA and similar funding competitions.

Outcomes

- The University of Alberta was awarded the India-Canada Centre of Excellence, in collaboration with UBC and the U of T, through a federal competition. This outcome aligns with and advances institutional priorities and objectives of diversified excellence and impact, by integrating the university's initiatives and research capacity in water, nanoscience, and nanotechnology to address complementary global issues in water treatment in India and Alberta.
- China's Ministry of Science and Technology (MOST) approved a $500,000/year award for a virology collaboration between the U of A and China. This outcome aligns with and advances the diversified excellence and impact objectives, by creating complementary teams addressing large-scale research problems in areas of institutional priority and research capacity.
- The Helmholtz Association has allocated €400,000/year for up to three years for Phase 1 of expanded collaborations into (a) Infectious Diseases and (b) Ecosystem and Resource Informatics. This outcome aligns with and advances the diversified excellence and impact objectives, by creating complementary teams addressing large-scale research problems in areas of institutional priority and research capacity.
- Dean Allen Berger of Augustana Campus was appointed president of the U.S.-based Council of Public Liberal Arts Colleges. Augustana is the only international member of this organization.
- The U of A provided targeted resources for participation and success in EU funding programs.
- The U of A completed the CIDA Public Engagement Fund project "Reaching New Communities," resulting in 300 new community contacts. Over 30 partnerships with community organizations were developed to host lectures, workshops, and arts-based programs.
- Science increased its international partnerships through umbrella agreements with University of Minas Gerais and UniMontes in Brazil; a memorandum of understanding with the University of Hong Kong that includes a 2 + 2 exchange program with students from Hong Kong; and research agreements signed with Gifu University in Japan and the University of Camerino in Italy.

- Physical Education and Recreation established a new partnership with the University of Exeter that enabled students to attend the University of Exeter Summer Institute.
- Science continued its major collaboration in sounding rocketry and space science with Norway through the Canada Norway Sounding Rocket (CaNoRock) program. A new $500,000 proposal submitted to the Canadian Space Agency proposes to expand CaNoRock to include graduate student learning with a U of A payload on a funded multimillion-dollar Norwegian scientific sounding rocket flight.
- Science and Extension hosted Japanese high school students for a week-long science camp.
- The Wirth Institute established ties with Croatia and instituted a yearly meeting of Austrian centre directors to create a three-continent-wide network of scholars working on Central Europe.
- Arts is working with the Kenya government and its Ministry of Foreign Affairs on a project that will train young diplomats entering the foreign service in Kenya and other East African countries.
- A guest scholar from Gansu Lianhe University (China) will come to the U of A for a one-year residency at Augustana to research differences between Chinese and Canadian methodology and pedagogy in second language acquisition, and to work with local staff in the Augustana Writing Centre on best practices for English as a second language.
- The U of A is developing graduate recruitment partnerships in China with the Chinese Academy of Agricultural Sciences, the Chinese Academy of Social Sciences, China Agricultural University, and the North West Agriculture and Forestry University.
- Work on community-based occupational therapy within Indonesia led to the first occupational therapy program in the country, which has produced 900 graduates.
- The U of A is developing a program with the University of Leipzig (Germany) to exchange senior undergraduate and graduate students between research labs in the biomedical fields.
- The University of Alberta Research Internship Program was expanded to include nine countries and 20 strategic partners. Eighty-seven students were placed in research placements in 2012-13.

Research Capacity and Impact Measures

Talented People

- Assessment of the University of Alberta relative to a selected peer group in total research funding and Tri-Council funding *
- Total sponsored research dollars from Alberta companies, Alberta government, and NGOs *
- Total international research investment from foreign national agencies and funding bodies *
- Prestigious national and international awards for faculty, post-doctoral fellows, and graduate students *
- Engagement of faculty in federal and international advisory roles *
- National and international research and creative activity initiatives that the U of A leads or participates in *
- Numbers of fully or partially funded graduate students, international graduate students, and post-doctoral fellows *
- Research consortia and partnerships formed with top-tier international partners
- Success in targeted federal competitions for innovative research, innovation, and creative activities programs
- Success on institutional review visits by Tri-Council, CFI, and other agencies

Diversity in Areas of Excellence and Impact

- Diversity of external private, public, and NGO partners that fund or collaborate on research and creative activities
- Research initiatives with city and rural stakeholders
- Engagement of faculty in federal and international advisory roles on policy *

**Outcomes on these metrics are presented in the main text and figures.*

Competitive and Well-Managed Resources for Research, Innovation, and Creative Activities

- Reinstatement of specialized support staff
- Upgraded shared research resources through deployment of special funding
- Success in federal infrastructure competitions *

Impact on Alberta

- Number of private and public sector users of U of A centres, institutes, and specialized infrastructure
- Number of graduate student internships occurring in Alberta
- Number of formal undergraduate interns and co-op students undertaken in Alberta
- Number of sponsored or contract research initiatives undertaken with Government of Alberta ministries
- Number of continuing spinoff companies associated with U of A activities *
- Number of patents, inventions, and licences stemming from U of A research through TEC Edmonton *
- Direct contribution to the regional economy from TEC Edmonton activities (see TEC Edmonton Annual Report)

**Outcomes on these metrics are presented in the main text and figures.*

Research Capacity and Impact: Strategies and Outcomes

Strategies

- Invest in competitive recruitment offers to recruit exceptional faculty.
- Invest in mechanisms to ensure recognition of faculty accomplishments.
- Invest in external and internal research chair opportunities and infrastructure programs to build, retain, or enhance capacity in emerging areas of priority or impact across disciplines.
- Invest in centres, institutes, and initiatives that leverage research capacity to address global challenges and integrate these efforts with international strategies and opportunities.
- Invest in internal mechanisms that lead to increased success within national and international funding competitions, especially on large cross-disciplinary team grants.
- Invest in graduate student recruitment strategies and partnership programs to recruit exceptional graduate students from Canada and internationally.
- Identify ways to fund the full costs of an increased post-doctoral fellow cohort that will complement existing programs.
- Expand advancement activities to secure philanthropic and private-sector endowment funds for priority initiatives leading to excellence and impact.
- Invest in building research consortia with other Canadian universities and select international partners to create new and broader avenues of impact.
- Invest as a partner institution in initiatives that align with and advance discovery and creative activities.
- Invest in new academic programs and external collaborations that advance knowledge mobilization and technology transfer.
- Invest in research administration services and systems to ensure effective and responsive management of agreements and contracts with internal and external stakeholders.
- Invest resources as institutional funding contributions on multi-user and multi-team infrastructure proposals.
- Use eligible funding sources to temporarily bridge critical, direct cost of research operating shortfalls in multi-user core facilities.
- Develop structures, mechanisms, and resourcing frameworks to consolidate shareable facilities for research and creative activities, where possible.
- Invest resources in opportunities to establish national, leading-edge facilities that open up new research and innovation avenues.
- Increase numbers of foreign post-doctoral fellows and graduate students. *
- Increase formal and active mobility programs for researchers and students.

Outcomes

- The U of A was awarded an India-Canada Centre of Excellence, in collaboration with UBC and the U of T. This outcome aligns with and advances institutional priorities and objectives of diversified excellence and impact, by integrating the university's initiatives and research capacity in water, nanoscience, and nanotechnology to address complementary global issues in water treatment in India and Alberta.
- China's Ministry of Science and Technology (MOST) approved a $500,000/year award for a virology collaboration between the U of A and China. This outcome aligns with and advances the diversified excellence and impact objectives, by creating complementary teams addressing large scale research problems in areas of institutional priority and research capacity.
- The Helmholtz Association has allocated €400,000/year for up to three years for phase 1 of expanded collaborations into (a) Infectious Diseases and (b) Ecosystem and Resource Informatics. This outcome aligns with and advances the diversified excellence and impact objectives, by creating complementary teams addressing large scale research problems in areas of institutional priority and research capacity.
- Dean Allen Berger of Augustana Campus was appointed president of the U.S.-based Council of Public Liberal Arts Colleges; Augustana is the only international member of this organization.
- The U of A received two new Canada Research Chair positions for the institution, and had seven successful CRC renewals and one CRC advancement from Tier II to Tier I.

- Four faculty were elected to the Royal Society of Canada; a mathematics researcher was awarded one of seven Killam Research Fellowships awarded nationally; a nursing researcher was one of four Canadians to receive an American Academy of Nursing Fellowship; a chemistry team associated with the Alberta Glycomics Centre was awarded the NSERC Brockhouse Prize for Interdisciplinary Research in Science and Engineering.
- The U of A engaged with the Canada Institute for Advanced Research on program participation and expansion.
- The U of A joined Carleton University, Laurentian University, Queen's University, and the Université de Montréal as an governing institutional member of SNOLAB, Canada's neutrino physics laboratory.
- The U of A developed and launched Canada's only academic-based Phase 1 clinical research centre within NACTRC, thereby fostering international industry collaborations.
- Canada Foundation for Innovation 2011-2012 Leaders Opportunity Fund awards yielded $8.1 million in federal contributions towards $20.5 million in infrastructure investments.
- Canada Foundation for Innovation 2012 Leading Edge Fund/New Initiatives Fund awards yielded $14.5 in federal contributions.
- Prestigious internal research chairs were restructured to work more flexibly for recruitment and retention of exceptional individuals.
- Resources were strategically allocated to recruit into Alberta Innovates - Health Solutions CAIP research chairs.
- A partnership was created with ETI Dynamics in the United Kingdom to serve as the Canadian "country" cell, connecting Canadian research institutions and technology companies with aspects of the Ganga River cleanup project in India.
- The U of A resourced a cross-faculty, cross-discipline water initiative, with an international external advisory board.
- A program is being developed with the University of Leipzig (Germany) to exchange senior undergraduate and graduate students between research labs in the biomedical fields.
- The U of A Research Internship Program was expanded to include nine countries and 20 strategic partners. Eighty-seven students were placed in research placements in 2012/13.
- A pilot project to improve CIHR competition success rate is being expanded for all Tri-Councils.
- An incentive-based approach to proactive graduate student recruitment was resourced to increase the cohort of quality graduate students.
- A set of new entrepreneurship training programs, opportunities, and degree programs were developed.
- The Shell Enhanced Learning Fund was established to engage students in energy and environment projects.
- A pilot program was completed to assess duplication and potential sharing of specialized laboratory infrastructure.
- Bridge funding was provided to core research resources with demonstrated fiscal pressures related to specialized staff or re-capitalization need.
- The U of A increased international partnerships through umbrella agreements with University of Minas Gerais and UniMontes in Brazil, a memorandum of understanding with the University of Hong Kong that includes a 2 + 2 exchange program with students from Hong Kong, and research agreements signed with Gifu University in Japan and the University of Camerino in Italy. (Science)
- A new partnership established with the University of Exeter enabled students to attend the University of Exeter Summer Institute. (Physical Education and Recreation)
- Continued major collaboration in sounding rocketry and space science with Norway through the Canada Norway Sounding Rocket (CaNoRock) program. (Science)
- The Wirth Institute established ties with Croatia and instituted a yearly meeting of Austrian centre directors to create a three-continent-wide network of scholars working on Central Europe.

THE ACADEMY: APPENDICES

Appendix 1: Enrolment Targets Measured in FLEs

	2012-13 Target				2013-14 Target				2014-15 Target				2015-16 Target				2016-17 Target			
	UNDERGRAD	GRAD (MASTERS)	GRAD (PHD)	TOTAL	UNDERGRAD	GRAD (MASTERS)	GRAD (PHD)	TOTAL	UNDERGRAD	GRAD (MASTERS)	GRAD (PHD)	TOTAL	UNDERGRAD	GRAD (MASTERS)	GRAD (PHD)	TOTAL	UNDERGRAD	GRAD (MASTERS)	GRAD (PHD)	TOTAL
ALES	1,227.0	229.0	225.0	**1,681.0**	1,227.0	225.0	215.0	**1,667.0**	1,227.0	225.0	215.0	**1,667.0**	1,227.0	225.0	215.0	**1,667.0**	1,227.0	225.0	215.0	**1,667.0**
Arts	5,121.0	393.0	366.0	**5,880.0**	5,121.0	393.0	366.0	**5,880.0**	5,121.0	393.0	366.0	**5,880.0**	5,121.0	393.0	366.0	**5,880.0**	5,121.0	393.0	366.0	**5,880.0**
Augustana	879.0	-	-	**879.0**	899.0	-	-	**899.0**	899.0	-	-	**899.0**	899.0	-	-	**899.0**	899.0	-	-	**899.0**
Business	1,819.0	234.0	60.0	**2,113.0**	1,786.0	234.0	60.0	**2,080.0**	1,786.0	234.0	60.0	**2,080.0**	1,786.0	234.0	60.0	**2,080.0**	1,786.0	234.0	60.0	**2,080.0**
Education	3,097.0	350.0	233.0	**3,680.0**	2,797.0	409.0	267.0	**3,473.0**	2,797.0	409.0	267.0	**3,473.0**	2,797.0	409.0	267.0	**3,473.0**	2,797.0	409.0	267.0	**3,473.0**
Engineering****	3,560.0	708.0	612.0	**4,880.0**	3,560.0	708.0	612.0	**4,880.0**	3,560.0	708.0	612.0	**4,880.0**	3,560.0	708.0	612.0	**4,880.0**	3,560.0	708.0	612.0	**4,880.0**
Extension		30.0	-	**30.0**		30.0	-	**30.0**		30.0	-	**30.0**		30.0	-	**30.0**		30.0	-	**30.0**
Law	525.0	6.0	6.0	**537.0**	525.0	4.0	8.0	**537.0**	525.0	4.0	8.0	**537.0**	525.0	4.0	8.0	**537.0**	525.0	4.0	8.0	**537.0**
Medicine & Dentistry	1,070.9	259.0	279.0	**1,608.9**	1,036.0	259.0	279.0	**1,574.0**	1,036.0	259.0	279.0	**1,574.0**	1,036.0	259.0	279.0	**1,574.0**	1,036.0	259.0	279.0	**1,574.0**
PGME/DE -exempt	*1,085.1*	-	-	**1,085.1**	*1,085.1*	-	-	**1,085.1**	*1,085.1*	-	-	**1,085.1**	*1,085.1*	-	-	**1,085.1**	*1,085.1*	-	-	**1,085.1**
Native Studies**	120.0	5.0	-	**125.0**	130.0	8.0	-	**138.0**	130.0	8.0	-	**138.0**	130.0	8.0	-	**138.0**	130.0	8.0	-	**138.0**
Nursing	1,354.0	84.0	84.0	**1,522.0**	1,354.0	84.0	84.0	**1,522.0**	1,354.0	84.0	84.0	**1,522.0**	1,354.0	84.0	84.0	**1,522.0**	1,354.0	84.0	84.0	**1,522.0**
Pharmacy	506.0	15.0	31.0	**552.0**	506.0	15.0	31.0	**552.0**	506.0	15.0	31.0	**552.0**	506.0	15.0	31.0	**552.0**	506.0	15.0	31.0	**552.0**
Physical Education & Recreation***	822.0	48.0	56.0	**926.0**	800.0	55.0	56.0	**911.0**	800.0	55.0	56.0	**911.0**	800.0	55.0	56.0	**911.0**	800.0	55.0	56.0	**911.0**
Rehab Medicine	-	698.0	32.0	**730.0**		698.0	32.0	**730.0**		698.0	32.0	**730.0**		698.0	32.0	**730.0**		698.0	32.0	**730.0**
Saint-Jean	494.0	28.0	-	**522.0**	514.0	28.0	-	**542.0**	514.0	28.0	-	**542.0**	514.0	28.0	-	**542.0**	514.0	28.0	-	**542.0**
School of Public Health		147.0	30.0	**177.0**		147.0	30.0	**177.0**		147.0	30.0	**177.0**		147.0	30.0	**177.0**		147.0	30.0	**177.0**
Science	5,488.0	517.0	680.0	**6,685.0**	5,488.0	517.0	680.0	**6,685.0**	5,488.0	517.0	680.0	**6,685.0**	5,488.0	517.0	680.0	**6,685.0**	5,488.0	517.0	680.0	**6,685.0**
Open Studies	499.1			**499.1**	543.0			**543.0**	543.0			**543.0**	543.0			**543.0**	543.0			**543.0**
				-				-				-				-				-
Less: Exempt FLEs*	(1,106.7)			**(1,106.7)**	(1,106.7)			**(1,106.7)**	(1,106.7)			**(1,106.7)**	(1,106.7)			**(1,106.7)**	(1,106.7)			**(1,106.7)**
Total FLEs	**26,560.4**	**3,751.0**	**2,694.0**	**33,005.4**	**26,264.4**	**3,814.0**	**2,720.0**	**32,798.4**	**26,264.4**	**3,814.0**	**2,720.0**	**32,798.4**	**26,264.4**	**3,814.0**	**2,720.0**	**32,798.4**	**26,264.4**	**3,814.0**	**2,720.0**	**32,798.4**

Appendix 2: Aboriginal Access, Enrolment, and Programming Initiatives

INITIATIVE	PURPOSE	FACULTY
Bachelor of Science degree in Environmental and Conservation Sciences offered jointly with Yukon College	Provides northern and Aboriginal students an opportunity to access program without leaving Yukon	Agricultural, Life and Environmental Sciences, Native Studies
Discussions with Maskwacis Cultural College about improving student flow	Increase access for students from Maskwacis Cultural College to the University of Alberta	Augustana
Membership in the Alberta Aboriginal Recruitment Network	Attract and support Aboriginal students	Augustana
Staff member appointed to serve as Aboriginal recruitment specialist	Attract and support Aboriginal students	Augustana
Aboriginal Teacher Education Program in collaboration with Northern Lakes College and Northlands School Division	Provides northern and Aboriginal students an opportunity to access program	Education
Adaptation, delivery and evaluation of a school-based drug and alcohol prevention program with the Alexis Nakota Sioux First Nation	Support of the Aboriginal community	Extension
Partnered with Enoch Cree Nation's Family Health Working Group	Exploring strategies for integrating health services	Extension
Examination of a formal education program offered with Native Counseling Services of Edmonton	Positively impact the health of urban Aboriginal women	Extension
Transforming structure for providing cultural support to Aboriginal students	Better support Aboriginal students	Law
External review of Indigenous Academic Program	Improve program. Currently reviewing recommendations for implementation in 2012-2013	Law
Developing a Diversity Policy as per the requirements of accreditation process	Increase enrolment for students from rural Alberta, Aboriginal backgrounds, lower socioeconomic backgrounds	Medicine and Dentistry
Initiated a theme of "social justice" in the undergraduate curriculum	Focus on Aboriginal Health	Medicine and Dentistry
Initiating a Pipeline program for Aboriginal students with an undergraduate university degree who do not meet the minimum GPA standard for admission to the MD program	Increase Aboriginal student enrolment	Medicine and Dentistry
The Rupertsland Centre for Métis Research	Communicates with the broader Métis community to enable ongoing relationships crucial to indigenous student recruitment and retention	Native Studies
"Health Warriors Network" project: participated in filming of a video resource	Promote health careers to First Nations students	Nursing
Piloted student participation in prenatal instruction on two reserves (Samson Healthy Family and Ermineskin Brighter Futures)	Serve Aboriginal communities	Nursing
Alberta Centre for Injury Control and Research (ACICR) priority	Reduce the incidence and severity of injuries in vulnerable populations including Aboriginal Peoples, and farming communities	Public Health
Science Faculty member is working as the Pacific Institute for Mathematical Sciences (PIMS) aboriginal coordinator	Support Edmonton-area First Nations students in mathematics outreach initiatives	Science
SSHRC faculties are developing an Aboriginal research group	Faculty and students with research interests broadly pertaining to Aboriginal matters are being encouraged to share their work, establish collaborative research programs, and seek external funding	SSHRC faculties

Appendix 3: Rural Access, Enrolment, and Programming Initiatives

INITIATIVE	PURPOSE	FACULTY
Alberta Centre for Sustainable Rural Communities (ACSRC)	Fosters collaboration in research, undergraduate teaching and policy development	Agricultural, Life and Environmental Sciences, Augustana
Developed MOUs with Grande Prairie Regional College and Medicine Hat College	Target the needs of rural and to some extent Aboriginal students	Augustana
Placed 13 Rural Capacity Interns in projects in rural communities across Alberta	Assist rural communities in addressing capacity issues and to create meaningful rural-based undergraduate student experiences	Augustana
Pilot of Bachelor of Education Collaborative program in Secondary Education with Grand Prairie Regional College	Serve North Western rural Alberta	Education
Aboriginal Teacher Education Program in collaboration with Northern Lakes College and Northlands School Division	Serve 10 northern community sites¬	Education
Proposed Master of Library and Information Studies (MLIS) on-line delivery	Serve the needs of graduate students locally, in rural areas of Alberta, nationally, and internationally	Education
Master of Education in Educational Policy Studies (Educational Administration and Leadership specialization) in collaboration with Red Deer College, Central Alberta Public and Separate School Jurisdictions, and Zone 4 College of Alberta School Superintendents	This existing program was extended off-campus to meet demands of the profession for qualified school leaders, particularly in central rural Alberta.	Education
Proposing a Master of Education in Teacher-Librarianship and Curriculum Studies (on-line delivery)	Serve the needs of graduate students locally, in rural areas of Alberta, nationally, and internationally	Education
Expanded the rural/regional Family Medicine Residency Program into Fort McMurray	Increase the number of graduates who choose to practice in rural and regional communities	Medicine and Dentistry
MD Ambassadors Program	Outreach program which introduces Edmonton and northern Alberta high school students to careers in the sciences and health professions	Medicine and Dentistry
Integrated Rural and Regional Health Community Clerkship	Offers select medical students the opportunity to live and learn in a rural Alberta community for their entire third year	Medicine and Dentistry
Developing a Diversity Policy as per the requirements of the accreditation process	Increase enrolment for students from rural Alberta, students from Aboriginal background, and students from lower socioeconomic background	Medicine and Dentistry
Rural placement initiative	Bring together learners who are on rural placements	Medicine and Dentistry, Pharmacy and Pharmaceutical Sciences
Initiating a travel bursary program in 2014 for undergraduate pharmacy students accepting experiential rotations in rural sites	Expected to recruit students to practice pharmacy underserved areas	Pharmacy and Pharmaceutical Sciences
Signed an agreement with Alberta Health to perform community health needs assessments in northern communities	Assessments will provide valuable experience for students as well as enhancing relationships in the northern half of the province	Public Health
Alberta Centre for Injury Control and Research (ACICR) priorities	Reduce the incidence and severity of injuries to vulnerable populations including Aboriginal Peoples, and farming communities	Public Health
The Augustana Physical Therapy satellite program	Supports rural practice in Alberta	Rehabilitation Medicine

Appendix 4: Francophone Access, Enrolment, and Programming Initiatives

INITIATIVE	PURPOSE	FACULTY
• Business Administration Diploma • Health Care Support • Practical Nursing • Early Childhood Education • Tourism Management Diploma in collaboration with CEGEP de Matane	These college-level programs target Francophones to facilitate quick integration in the labour market or the Alberta education system	Campus St. Jean through le Centre Collégial de l'Alberta
Initiated certification in speech therapy for professionals working in Francophone and immersion schools	To increase the number of Francophone specialists	Campus Saint-Jean
Implementing a cultural competency curriculum in the Undergraduate Medical Education program	Diversity	Medicine and Dentistry with Campus Saint-Jean
Consulted with Campus Saint-Jean regarding pharmacy pre-requisite course work to assure that Francophone students can complete courses in French	To increase the number of French-English bilingual pharmacists	Pharmacy and Pharmaceutical Sciences

Appendix 5: Graduates in Selected Fields

	2011	2012
Healthcare		
1 Physicians	143	152
2 Nurses	496	566
3 Pharmacists	125	128
4 Physical and Occupational Therapists	194	114*
5 Speech Pathologists	52	60
6 Public Health Professionals	66	76
7 Dentists	36	38
8 Kinesiologists	64	76
9 Psychologists	9	12
Education and Knowledge Access		
1 Teachers	1238	1249
2 Librarians	30	43
Business, Government, and Legal		
1 Commerce/ Business	657	638
2 MBAs	149	150
3 Lawyers	163	170
4 Economists	189	183
5 Translators	29	26
Culture, Arts, and Tourism		
1 Theatre professionals	48	41
2 Musicians	53	39
3 Industrial, Graphic, and Theatre designers	45	39
4 Visual artists	45	45
5 Tourism Professionals	30	31
Resource and Agricultural Economy		
1 Engineers	836	805
2 Geologists	105	97
3 Foresters	19	12
4 Agricultural, Food and Environmental Professionals	375	368

* Variance due to program change which delayed convocation

Appendix 6: Campus Alberta, Canadian, and International Program Partnerships

Selected Programs Offered in Partnership with Campus Alberta Institutions

PROGRAM	PARTNER	FACULTY
Bachelor of Science in Radiation Therapy	University of Calgary, Alberta Health Services (Cancer Care), the Cross Cancer Institute (Edmonton) and the Tom Baker Cancer Centre (Calgary)	Medicine and Dentistry
Bachelor of Science ENCS and BSc Agriculture programs -- new block transfer agreements with Campus Alberta partners facilitating entry for 2013-14	Campus Alberta Institutions	Agricultural, Life and Environmental Sciences
2 + 2 articulation agreements	Medicine Hat College, Grande Prairie Regional College	Augustana
Health Care Support Certificate	Bow Valley College	Centre Collégial de l'Alberta
Bilingual Business Administration Diploma	NAIT	Centre Collégial de l'Alberta
Teacher Education North program	Grande Prairie Regional College	Education
Middle Years program	Red Deer College	Education
Teaching in Rural Communities South program	Medicine Hat College	Education
Aboriginal Teacher Education Program	Northern Lakes College Northlands School Division	Education
Bachelor of Education collaborative pilot program in Secondary Education	Grand Prairie Regional College	Education
Master of Education in Educational Policy Studies (Indigenous Peoples' Education specialization)	Blue Quills First Nations College	Education
Master of Education in Educational Policy Studies (Educational Administration and Leadership specialization)	Red Deer College, Central Alberta Public and Separate School Jurisdictions, and Zone 4 College of Alberta School Superintendents	Education
Proposed Certificate for foreign-educated law graduates (the "NCA Certificate Program")	University of Calgary	Law
Bachelor of Science in Nursing (BScN)-Collaborative Program	Red Deer College Keyano College (Fort McMurray) Grande Prairie Regional College	Nursing

Selected Programs Offered in Partnership with Canadian Institutions

PROGRAM	PARTNER	FACULTY
BSc in Environmental and Conservation Sciences	Yukon College	Agricultural, Life and Environmental Sciences, Native Studies
Proposed Gestion touristique (Diploma in tourism management)	CEGEP de Matane	Campus St. Jean through le Centre Collégial de l'Alberta
Pilot program for course delivery in the Northwest Territories	Dechinta Bush University	Native Studies

Selected Programs Offered in Partnership with International Institutions

PROGRAM	PARTNER	FACULTY/UNIT
Dual Bachelor of Arts degree	Ritsumeiken University, Japan	Arts
University of Alberta in Berlin offers three-part programming: language instruction, internships, and a humanities course	Germany	Arts
French language and humanities courses	Université Catholique de Lille	Arts
9 bilateral agreements and "2+2" undergraduate program agreements	Institutions in Asia, Africa, Europe and South America	Agricultural, Life and Environmental Sciences
Establishment of an international dietetics internship program	University of Ghana's Nutrition Research and Training Centre	Agricultural, Life and Environmental Sciences
Study in Telemark program	Telemark University College, Norway	Augustana
Augustana-in-Cuba program	Universidad de Oriente, Cuba	Augustana
Master of Financial Management (delivered in China)	Xi'an Jiaotong University in China	Business
Dual JD Program	University of Colorado	Law
Joint PhD program	Shantou University Medical College in China	Medicine and Dentistry
Developing a joint research fellowship/Ph.D. training program	Oxford Medical School	Medicine and Dentistry
Developing an MOU to facilitate Graduate Student exchanges and possibilities of Co-tutelle (co-direction of theses)	University of Nantes in France	Native Studies
Joint PhD agreement	Ludwig Maximillian University (Germany)	Science
Proposed Co-tutelle agreements	The Federal University of Minas Gerais (Brazil), Technische Universität München (Germany), University of Campinas (Brazil) and University of Putra Malaysia (Malaysia)	Science
University Management Program	Select universities in China	University of Alberta International

Appendix 7: Program Development

Implementation of Recently Approved Programs

PROGRAM	FIRST INTAKE DATE
Bachelor of Arts (Planning) / Bachelor of Science (Specialization in Planning)	September 2012
Masters of Arts in Native Studies	September 2012
Master of Financial Management (in China)	May/June 2013
Doctor of Philosophy in Drama – Performance Studies	September 2012
Doctor of Philosophy in the History of Art, Design and Visual Culture	September 2013 (delayed from 2012)
Master of Business Administration/Bachelor of Science in Pharmacy	September 2012
Master of Business Administration/ Master of Library and Information Studies	September 2013

Current Program Submissions

PROGRAM	FACULTY	GOVERNMENT APPROVAL
Bachelor of Agriculture - Agronomy major - Plant Biotechnology major	ALES	PENDING. Submitted November 21, 2012
Bachelor of Science in Nutritional and Food Science - Honours in Food Science route - Honours in Nutrition route - revise Nutrition and Food major	ALES	PENDING. Submitted July 23, 2012
Bachelor of Science in Environmental and Conservation Science - Sustainable Agriculture major - Northern Systems major in collaboration with Yukon College	ALES	PENDING. Submitted July 23, 2012
Bachelor of Science in Radiation Therapy	Medicine and Dentistry	PENDING. Submitted November 28, 2012
Master of Arts in Community Engagement	Extension, Graduate Studies and Research	PENDING. Submitted July 23, 2012
Master of Arts in Women's and Gender Studies	Arts, Graduate Studies and Research	PENDING. Submitted July 23, 2012
Master of Coaching	Physical Education and Recreation, Graduate Studies and Research	PENDING. Submitted March 19, 2012
Master of Science in Laboratory Medicine and Pathology	Medicine and Dentistry, Graduate Studies and Research	PENDING. Submitted July 23, 2012
Doctor of Philosophy in Laboratory Medicine and Pathology	Medicine and Dentistry, Graduate Studies and Research	PENDING. Submitted July 23, 2012
Embedded Credit Certificate in Computer Game Development	Arts	Not required
Embedded Credit Certificate in European Studies	Arts	Not required
Embedded Credit Certificate in Global Citizenship	Education	Not required
Embedded Certificate in International Learning	Arts, University of Alberta International	Not required
Embedded Credit Certificate in Leadership	Business	Not required
Embedded Credit Certificate in Writing Studies	Augustana	Not required
Suspension of the Range and Pasture Management Major in the BSc in Agriculture Program	ALES	FINAL APPROVAL. March 21, 2012

Emerging Program Initiatives

PROGRAM	FACULTY	FUNDING SOURCE
Bachelor of Arts with a Arts Management minor	Arts in collaboration with MacEwan University	Existing
Bachelor of Arts with a Business minor	Arts with School of Business	Existing
Bachelor of Arts in East Asian Studies	Arts	Existing
Bachelor of Arts /Bachelor of Science in Interactive Media	Arts, Science	Existing
Bachelor of Arts /Bachelor of Science in Gaming	Arts, Science	Existing
Master of Arts in Public Economics	Arts, Business, Agricultural, Life and Environmental Sciences	Existing
Master of Arts in Medical Humanities	Arts, Medicine and Dentistry	Existing
Master of Education in Teacher-Librarianship and Curriculum Studies (on-line delivery)	Education	Existing
Master of Engineering Course-based Executive program	Engineering	Cost-recovery
Master of Library and Information Studies (MLIS) on-line delivery	Education	Cost-recovery
PhD in Writing Studies for Western Canada	Arts	Existing
Certificate in Community-based Research and Evaluation (graduate credit)	Extension	Existing
Certificate for foreign-educated law graduates (the ¨NCA Certificate Program¨)	Law in conjunction with the University of Calgary	Cost recovery
Certificate in Disability Ethics	Rehabilitation Medicine	Cost recovery
Certificates in International Agriculture and International Nutrition and Food Security	Agricultural, Life and Environmental Sciences	Existing
Certificates in Writing Studies, Latin American Studies, and India Studies	Arts	Existing

PROGRAM	FACULTY	FUNDING SOURCE
Certificates in International Studies and Theater Studies	Campus Saint-Jean	Existing
Diploma in Tourism (Gestion touristique)	Centre Collégial de l'Alberta	Existing
Diploma in Practical Nursing	Centre Collégial de l'Alberta	Resources required
Citation in Community Engagement (non-credit)	Extension	Existing
Citation in Entrepreneurship (non-credit)	Extension	Existing
Fashion Business Management program	Agricultural, Life and Environmental Sciences, Business	Existing
Honours College (a four-year program dedicated to innovation, creativity and bridging gaps created by compartmentalized education)	Arts	TBD
Land Reclamation International Graduate School	Agricultural, Life and Environmental Sciences, Science	TBD
Mountain Study Abroad program	Physical Education and Recreation, Agricultural, Life and Environmental Sciences, Arts, and Science	TBD
New Training program which will address some of the gaps in current training of students bound for the pharmaceutical industry	Pharmacy and Pharmaceutical Sciences, Medicine and Dentistry, Science	TBD
Therapeutic Recreation program	Physical Education and Recreation, Rehabilitation Medicine, and the Alberta Therapeutic Recreation Association	TBD
Watershed Management program	Agricultural, Life and Environmental Sciences, Science	Existing
Undergraduate Research Stream	Biological Sciences, Faculty of Science	Existing
Internationally Educated Physical Therapists upgrading program	Rehabilitation Medicine in partnership with the Physiotherapy Alberta College and Association (PACA)	Grant funded by PACA
Canadian National Leadership Program (non-credit certificate in military leadership)	Arts, Business, and others	Existing

Appendix 8: Research Capacity Investments and Details

The University of Alberta builds capacity in research and creative activities through several means, including investments in research chairs, infrastructure, and the creation of special centres, institutes, and initiatives. Some mechanisms are targeted by federal and provincial funding programs, and cannot be used to sustain and develop capacity in other areas of institutional strategic importance and impact.

Canada Research Chairs (as of December 2012)

AREA	CURRENT	UNDER REVIEW	UNDER RECRUITMENT
Humanities and Fine Arts	4	1	0
Science and Technology	33	2	2
Social Structures and Systems	7	2	2
Energy	4	0	0
Environment	6	1	1
Health and Wellness	32	6	2
Foods and Bioresources	3	1	1

Other Research Chair Programs – Targeted Federal and Provincial Priorities

CHAIR PROGRAM:	CERC*	NSERC INDUSTRIAL*	CAIP**	AI-HS** CAIP	UOFA * TORY	UOFA * KILLAM
Humanities and Fine Arts	0	0	0	0	4	0
Science and Technology	1	9	2	2	0	2
Social Structures and Systems	0	0	1	0	0	0
Energy	1	10	2	0	0	0
Environment	0	3	1	0	0	0
Health and Wellness	1	0	0	3	0	0
Foods and Bioresources	0	0	1	0	0	0

*Total held, December 2012; excludes proposals under review

* *Allocated or held, December 2012

CERC= Canada Excellence Research Chair, CAIP = Campus Alberta Innovates Program, AI-HS = Alberta Innovates – Health Solutions, UofA Tory and UofA Killam = internal university research chairs

Infrastructure Investments: Canada Foundation for Innovation Awards

2011-2012 AWARDS: $20.5M	
Federal	$8.1M
Provincial	$7.0M
University	$1.7M
In-kind and other cash	$3.7M *

2012-2013 AWARDS: $58.9M	
Federal	$20.6M
Provincial	TBD **
University	$0.8M
In-kind and other cash	$14.3M *

* university and/or external sources
** See Research Capacity Funding Gaps

Innovation and Commercialization Investments

TEC Edmonton	$1.8M / yr
National Institute for Nanotechnology *	$20.6M / yr

* UofA contribution figure is based on salaries, indirect cost of research funding transfers; sublease of 2 floors; additional capital accounts; utility and operating grants; grants that support graduate students and PDFs on NINT projects. Support for NanoFab is included; support for other nano facilities on campus that direct support NINT activities is not included.

Enhancing Capacity through Centres, Institutes, and Initiatives

The following areas of research capacity have been developed through university investment in centres, institutes, and initiatives. Descriptions provide further detail to clarify contribution to and alignment with the research priorities of the Government of Alberta and its ministries.

HUMANITIES AND FINE ARTS

Canada's Francophone Heritage: Francophonie, minority-language rights and legislation, as well as intercultural research, distinguishes the U of A nationally and supports provincial and federal mandates to recognize and preserve the Canada's francophone heritage.
Canadian Studies Centre; Institut pour le patrimoine de la francophonie de l'Ouest Canadien

Cross Cultural Studies:
Central and eastern European: emphasis on Ukranian and Austrian history and society
Wirth Institute for Austrian and Central European Studies; Canadian Institute for Ukrainian Studies; Peter and Doris Kule Centre for Ukrainian and Canadian Folklore; the Kule Institute for Advanced Studies.

China: emphasis on contemporary China, Chinese energy policy, politics, economy, social issues, culture and Canada-China relations.
The China Institute at the University of Alberta

Japan: Japanese language and culture from cross disciplinary perspectives
The Prince Takamoda Japan Centre. Japan Canada Academic Consortium. Member institution: Japan-Canada Academic Consortium.

Indigenous Peoples: language and linguistic history; cultural, social and legal frameworks.
Canadian Indigenous Languages and Literacy Development Institute; Rupertsland Centre for Métis Research; Aboriginal Teacher Education Program

Information Sciences & Humanities: deployment of advanced computing technologies for historical, economic, health, social, and cultural research.
Canadian Institute for Computing in the Arts

Ideas and Institutions: past and current systems of ethics, truth, social and cultural development, and political theory; interdisciplinary anthropology archeology; current cultural thought and social innovation
Baikal Archaeology Project; The Cortona Italy School; Festival of Ideas.

Written and Performed Word: study and production high-calibre production of literature and theatre.
Canadian Writing Research Collaboratory; the Canadian Literature Centre; Canadian Centre for Theatre Creation; The Timms Centre for the Arts

Music Performance and Theory: Innovative music research, performance, and leadership for international-caliber concerts and choral experiences; cross disciplinary work in acoustic engineering, sound, and performance for advances in sound quality and improving vocal health of music teachers.
Canadian Centre for Ethnomusicology;

Visual Expression: all aspects of art from its history to methods of production, with particular investment in printmaking, industrial design, and visual information communication.
Enterprise Square Campus Gallery

SOCIAL STRUCTURES & SYSTEMS

Resilient Communities: frameworks, policies, and mechanisms that enable community innovation and vibrancy in urban and rural settings
Community University Partnership, City-Region Studies Centre, Alberta Centre for Sustainable Rural Communities

Science and Society: legal, policy, and economic consequences associated with scientific and technological advances, especially in health
Health Law Institute; John Dossitor Centre for Ethics; Institute of Health Economics (Partner Institution)

Corporate and Public Citizenship: the role of businesses, corporations, and public groups in defining the social good of communities and their enhanced quality of life, locally and internationally.
Canadian Centre for Corporate Social Responsibility; Centre for Public Involvement.

Entrepreneurship and Innovation: political, social, and economic aspects of innovation ecosystems, technology and knowledge transfer, and commercialization, especially at the science—business interface.
Technology Commercialization Centre; Centre for Entrepreneurship and Family Enterprise; Alberta Business Family Institute

Globalization: citizenship education, human rights education, and education for social justice and social development; cultural musical expression
Centre for Global Citizenship Education & Research; Canadian Centre for Ethnomusicology

Law, Justice, and Legal Frameworks: law, administration justice, social justice, and the interpretation and evolution of legal; interdisciplinary studies of constitutional issues.
Alberta Law Reform Institute; Centre for Constitutional Studies; Health Law Institute.

Educational Frameworks: scientific, mathematical, and technological literacy for citizens; curriculum and pedagogy; teacher education
Centre for Mathematics, Science and Technological Education; Centre for Research for Teacher Education and Development; Curriculum and Pedagogy International Network

Political and Economic Systems: economic, social, political and international influences on the economy and society, from both regional and national perspectives; the design, execution, and analysis of public opinion sampling and surveys
Institute for Public Economics; Population Research Laboratory

Canada's North American Context: policies and policy processes of the United States, US cultures, histories, politics, and economies; Canada's U.S.-specific challenges and opportunities
Alberta Institute for American Studies

SCIENCE AND TECHNOLOGY

Information Communication Technologies: computational intelligence, especially machine learning and data mining; wireless and broad-band communications, applied electromagnetics, information security and sensor networks; data analytics for geophysics, energy exploration, space sciences and drug design; advanced ground and satellite observation systems
Alberta Centre for Machine Intelligence; IBM-Alberta Centre for Advanced Studies; Centre for Earth Observation Sciences

Biochemisty, Chemistry, and 'omics': protein structure and function; lipids and membrane structure; glycomics; analytical chemistry and computational advances; metagenomics and metabolomics for infectious diseases, chronic diseases, and antiviral therapies; translational clinical biomarker discovery for personalized medicine; biochemistry and molecular biology of plant, animal, and human development and disease
Alberta Glycomics Centre; Metabolomics Innovation Centre; Li Ka Shing Institute of Virology

Nanoscience and Nanotechnology: integrated research in condensed matter physics, surface science engineering, inorganic and organic chemistry, and chemical engineering to advance metabolic sensor systems; hybrid nanoscale electronics; new materials and processes for energy generation and storage; nanotoxicology.
National Institute for Nanotechnology; Alberta Centre for Surface Engineering and Sciences; Integrated Nanosystems Research Facility; Nanofab, Ultrafast-Nanotools Facility

Mathematics and Analytical Methods: geological and geophysical imaging analytics; organic and inorganic analytic chemistry; biostatistics, psychometrics, sampling and surveys; qualitative methodologies; mathematical biology
Pacific Institute of Mathematical Sciences (Member); International Institute for Qualitative Methodology; Centre for Research in Applied Measurement and Evaluation; Alberta Glycomics Centre

Materials and interfacial science and engineering: condensed matter physics & high temperature superconductivity, physical chemistry, and nanoscience research for new catalysts, materials, and biomaterials; synthesis of new molecules for improved plastics, alloys, electronic components, and fuel cells.
Alberta Centre for Surface Sciences and Engineering; National Institute for Nanotechnology

Human Development: mechanisms of neurological and cognitive development and behavior, especially aging and neurological disease.
Centre for Neuroscience; Centre for Prions and Protein Folding Diseases

Foundations and Behavior of Matter: theoretical and experimental high energy physics; astrophysics; solar physics and near-earth space phenomenon
Sudbury Neutrino Observatory Lab- SNOLAB (Member Institution); Institute for Space Sciences, Exploration and Technology

Earth Sciences: mineralogy, petrology, geochemistry, and geochronology; gas and hydrocarbon chemistry, petroleum hydrogeology
Canadian Centre for Isotopic Microanalysis; Helmholtz-Alberta Initiative

Engineered Structures and Processes: geotechnical and geo-environmental engineering for large earth structures, cold regions and permafrost engineering; pipelines and transport systems; risk management for environmental engineering and natural hazards.
Markin/CNRL Natural Resources Engineering Facility; Canadian Rail Research Laboratory

ENERGY

Economics and policy: Applied economic analysis on risk and regulation in energy and electricity markets, within Canada and internationally; social and cultural impacts of resource extraction and land use policies; environmental deregulation and marker-based approaches to meet land

use and environmental quality objectives.
Centre for Applied Business Research in Energy and the Environment; Oil Sands Research and Information Network; Alberta Land Institute.

Conventional and Unconventional Fossil Fuels: all aspects of bitumen upgrading, new non-aqueous and advanced extraction technologies; carbon sequestration; reduced environmental impact of fossil fuel production and exploration
Centre for Oil Sands Innovation; Helmholtz-Alberta Initiative; Oils Sands Tailing Research Facility; Centre for Intelligent Mining Systems

Resource Geosciences: petroleum exploration, exploitation management and monitoring; theoretical and applied seismology, geodynamics, and geomagnetism; 4-D rock physics and geophysical logging and data processing
Helmholtz-Alberta Initiative

Tailings and Water Management: integrated research in chemical engineering, ecology, metagenomics, and molecular biology for environmentally sustainable treatment of tailings, and water from resource extraction.
Oil stands Tailings Research Facility; Centre for Oil Sands Innovation; Helmholtz-Alberta Initiative

Clean Coal and Mining: Coal cleaning and upgrading, pollution control strategies, greenhouse gas emission reduction, value-added products, and underground goal gasification; advanced ICT for mining; surface mining equipment design and operations
Canadian Centre for Clean Coal/Carbon and Mineral Processing Technologies; Helmholz-Alberta Initiative; Centre for Intelligent Mining

Alternative Energies— geothermal energy; biofuels; solar cells and photovaltaics; power quality and advanced power distribution systems; nanoscale advances in advanced materials for solar cells; photovoltaics;
National Institute for Nanotechnology; Biorefining Conversions Network

ENVIRONMENT

Biosystems and Ecosystems: plants, forest, and soil interactions; plant physiology, structure, genetics, growth and adaptation processes; biological and genetic processes of plants and animals in response to environmental stresses; boreal, alpine, and arctic ecology and wildlife; wildlife biology and management; paleontology and evolutionary systemics
Alberta Biodiversity Monitoring Institute (Partner Institution); Centre for Earth Observation Sciences

Aquatic ecosystems: wetlands, hydrogeology, rivers systems, glaciers, polar ice); plant/animal interactions and effects; assessing, modeling, and mitigating climate and human-induced influences on water and air quality

Socio-Economics of Environmental Resource Development. Political, social, economic and cultural requirements and consequences; land use policy and practices; policies and frameworks for sustainable rural communities; social responses to ecological change
Centre for Applied Business Research on Energy and the Environment; Alberta Land Institute; Canadian Circumpolar Institute; Alberta Centre for Sustainable Rural Communities

Animal and Human Health. Public health challenges related to water quality and waterborne diseases, animal-to-human pathogen spread, and soil and air contaminants; disease spread through wildlife; neurodegenerative disorders and chronic wasting diseases in wildlife and livestock.
Centre for Prions and Protein Folding Diseases; Centre for Earth Observation Sciences

Climate Change. Assessing and forecasting the impact of climate change on ecology, ecosystems, with emphasis on Alberta's boreal forests, water supply, and agricultural sectors; land and ecosystem changes in northern Canada and the Arctic; biodiversity throughout the western hemisphere
The Canadian Circumpolar Institute; Centre for Earth Observation Sciences

Land Reclamation and Soil Remediation: ecosystem protocols and hydrological sciences for land reclamation; genetics and molecular biology for biodegradation of petroleum hydrocarbons in contaminated groundwater.
Helmholtz Alberta Initiative

FOOD AND BIO-RESOURCES

Biofuels, bioenergy & biomass conversion: understanding and design of enzyme, catalysts, and other processes for biomass conversion and the development of higher value products from feedstock; nano-enabled biomaterials
National Institute for Nanotechnology; Biorefining Conversions Network

Swine, Livestock, and Poultry Sciences: optimizing production and quality of traditional and new species, and on novel traits through genomics, breeding, protection systems; food safety, food quality, production efficiency and sustainability, and environmental health;
Dairy Research and Technology Centre; Poultry Research Centre; Swine Research and Technology Centre; Livestock Gentec; Agri-Food Discovery Place

Sustainable Forestry: science, technology, and best practices to reduce soil erosion, water and fertilizer use and supply; plant genetics; environmentally-sustainable forestry practices and enhanced wood production
Centre for Enhanced Forest Management

Agricultural resource economics: market based instruments for the regulation of resource allocation; interaction of energy based stresses, climate induced stresses, and human population increases on water for agricultural sectors; regulation issues related to food and consumers; agribusiness financing and business analysis.

Crop and Plant Sciences: genomics, biotechnology, breeding, crop protection systems, and agricultural practices, and management to enhance production, and to identify mechanisms and traits for stress- and disease-resistant species.

Healthy Foods: Development of agricultural biotechnologies for healthy food production, utilization of crop components and functional food production; development of probiotics, nutraceuticals and specialized seed oils
Agri-Food Discovery Place; Phytola Centre

HEALTH AND WELLNESS

Advanced Interventions and Treatments: translational, clinical, and cross-disciplinary focus on chronic diseases, cancer, obesity, and improved organ and tissue transplantation; regenerative medicine; biomarker based technologies for personalized treatment and diagnostics; advanced materials for implant devices and rehabilitation treatments; population health, health services, and health systems.
Alberta Transplant Institute; Institute for Reconstructive Sciences in Medicine; Alberta Diabetes Institute; Muttart Diabetes Research and Training Centre. Alberta Cardiovascular and Stroke Research Centre; Mazankowski Alberta Heart Institute

Cross Cultural Health: Indigenous people's health and health training; complementary and alternative medicine; global health.
Aboriginal Health Initiative; Complementary and Alternative Research and Education Program - Integrated health and Healing

Health Equity: social determinants of health equity; ethical, legal and policy consequences of rapid advances in health innovations disparities in health.
John Dossetor Health Ethics Centre; Health Law Institute

Healthy Life Spans: cross disciplinary research and training on individual, social, organizational, and community determinants of health living and health aging; nutrition; exercise, health promotion, and safe workplaces and behaviours; maternal and child health.
Alberta Centre on Aging; Alberta Institute for Human Nutrition; Alberta Centre for Active Living; Women's and Children's Health Research Institute

Health Services and Outcomes: research on improved health service design and delivery; assessment of health service policy and technologies; primary care and rural health care
Interdisciplinary Health Research Academy; Institute of Health Economics; Alberta Research Centre for Health Evidence; Women's and Children's Health Research Institute

Inter-professional Training: Cross cultural, primary care and rural health care; evidence-based best practices in health sciences team education, health professional collaborative practice; and the use of technology to support and enhance teaching and learning.
Edmonton Clinic Health Academy; Interdisciplinary Health Research Academy; Health Sciences Education and Research Commons

Medical Imaging Sciences: in vivo imaging of human diseases for improved diagnosis and treatments, especially chronic and neurological diseases, cancer, and drug development
National High Field Nuclear Magnetic Resonance Centre (NANUC); Edmonton PET Centre; Centre for Biological Imaging and Adaptive Radiotherapy; Peter S. Allen Magnetic Resonance Research Centre.

Virology, Immunology, & Infectious Diseases: virus discovery, metagenomic and microbial genomic analysis, viral disease prevention and treatment; infectious causes of inflammatory disease; translation of research technology into clinical and commercial practice; pathogen and biomarker discovery; bioinformatics; molecular and comparative immunology
Li Ka Shing Institute of Virology; Alberta Transplant Applied Genomics Centre; Advanced Microscopy Unit; Centre of Excellence for Gastronintestinal inflammation and Immunity Research; Alberta Glycomics Centre; Alberta Transplant Applied Genomics Centre; Advanced Microscopy Unit

Appendix 9: Research Capacity Funding Gaps

Research Capacity Envelope Program: Anticipated Submissions

The University of Alberta will apply to the Ministry of EAE's Research Capacity Envelope Program for $36.M to match $36.M in federal investments in research infrastructure. Due to the nature of budget finalization and equipment acquisition, this application will be for a forward commitment of funds to be released over 2 – 3 fiscal years.

Other Infrastructure Re-Capitalization

During 2012, the University of Alberta engaged in a formal process that identified three additional research capacity areas for recapitalization. These are

- infectious diseases : $8.7M
- risk assessment for environmental disease: $2.3M
- advanced molecular imaging for medical research: $11.8M

The university has established significant research capacity and impact in these areas through investments in faculty recruitment and through contributions towards previously funded core facilities, in partnership with the provincial and federal governments. These core facilities support strategic provincial priority areas; the molecular imaging facility provides services to 15 industrial and government research clients.

Direct Cost of Operating Core Research Services

The University of Alberta develops, acquires, and sustains core infrastructure and services for Alberta's research and innovation enterprise. Examples of this infrastructure includes animal care facilities, which enable innovation and discovery related to human and livestock health; research stations that support sustainable agriculture and environment; and highly specialized equipment for advanced imaging. This infrastructure provides a competitive innovation arena for Alberta's current industries and sectors, and demonstrates to those industries not yet invested in the province that their work can be executed here, in partnership with Alberta's flagship institution. Near-commercialization development and testing for medical, health, and drug development could not be done with the provision of the facilities provided at the U of A.

The direct operating expenses of these facilities greatly exceed revenue streams provided by service fees and researcher grants, and they are ineligible to be covered by any indirect cost of research funding. Operating costs for these facilities are currently outside Alberta's Research Capacity Program's mandate. Fiscal pressures on the U of A's Campus Alberta Grant reduce the internal funding available to sustain the infrastructure foundation that Alberta looks to the U of A to acquire, operate, and sustain.

The U of A requests that its Campus Alberta grant reflect the differential expenses of providing the province's core advanced research and innovation facilities and services.

Direct and Indirect Costs of Research Gap – Post-doctoral Fellow Support

Attracting and training a large complement of exceptional PDFs is one of the mandates of Alberta's CARI sector and an institutional priority for the University of Alberta. Direct and indirect costs associated with PDFs are not included in university's Campus Alberta Grant, because these individuals are not counted as either staff FLEs or student FLEs.

The U of A requests that its Campus Alberta grant reflect the differential direct and indirect costs of training post-doctoral fellows.

Appendix 10: eLearning

Programs with alternative delivery

PROGRAM	FACULTY	DELIVERY
Bachelor of Science degree in Environmental and Conservation Sciences offered jointly with Yukon College	ALES, Native Studies	Online delivery and video conferencing
Master of Arts in Canadian Studies	Campus Saint-Jean	Classroom or online delivery
Master of Education in Teacher-Librarianship and Curriculum Studies	Education	Online delivery
Master of Arts in Communications and Technology	Extension	Blended delivery
Applied Land Use Planning Certificate (non-credit and professional development)	Extension	Blended delivery
Information Access and Protection of Privacy Certificate (non-credit)	Extension	Online delivery
Occupational Health and Safety Certificate (non-credit)	Extension	Online delivery
Master of Public Health in Health Promotion Studies	Public Health	Online delivery
Certificate in Pain Management	Rehabilitation Medicine	Online delivery
Certificate in Stroke Rehabilitation	Rehabilitation Medicine	Online delivery

eLearning Initiatives

INITIATIVE	FACULTY
Development of an iTunesU site for media, podcasts, video segments, public performances of Arts-related teaching and research projects	Arts
Multimedia group provides support for the conversion of old media formats to digital formats, and supports the creation of podcasts, video production and lecture capture	
"Apple Learning Tour" session on iBooks Author and iTunesU	
New version of the Language Lab, which includes a video component useful for learning sign language	Campus Saint-Jean
Speech-Coach, a linguistic diagnostic tool involving complex algorithms	
Text-to-speech tool that now allows for "on-the-fly" rendering	
SMART User Certifications. During the past 18 months approximately 950 students have attended training sessions so that they can better integrate digital technologies in their classroom.	Education
The "Inclusive Education: Adapting Instruction for Students with Special Needs" course has been reformatted for blended delivery	
Continue to developing eLearning materials to support some large, first-year and second-year undergraduate courses	Engineering
Online Medical English Course which allows offshore delivery of course contents overseas	Extension, Medicine and Dentistry
Interdisciplinary 410 Health Team Education course incorporates online elements to accommodate distance delivery	Health Sciences Council
Completed an extensive Faculty-wide eLearning review and have adopted a new framework involving changes to existing processes and supporting technologies	Medicine and Dentistry
Development and commercialization of Brainspan, an interactive gaming application for medical education	
NS 200: Aboriginal Canada - Looking Forward, Looking Back course will be offered via videoconferencing in Fall 2013	Native Studies, Augustana
Increased inventory of laboratory skills videos online	Nursing
Initiated online preceptorship programming for preceptors of undergraduate students (certificate awarded upon completion of 13-week program)	
Lectures can now be viewed in Flash format as well as on mobile devices	
Piloted online mid-term and final exams	
Courses offered to practicing pharmacists utilize distance learning technologies	Pharmacy and Pharmaceutical Sciences
Pharmacy student practice skills (courses, practice laboratories, and experiential education) supported by eLearning technologies	
A special topics course, Introduction to the Space Environment and Space Weather, is being offered by videoconferencing in collaboration with the University of Calgary.	Science
Voice-over PowerPoint presentations so that students are able to review course content at any time	Rehabilitation Medicine
Developed an e -clinic using standardized patients so that students are able to work with clients over the course of an academic year.	
Highly focused webinar sessions are delivered by experts in a web-based synchronous learning environment.	
Satellite campuses have been established in Calgary and Camrose using real-time web/video cast technology	

BUILDING **SUSTAINABLE SOLUTIONS**

SUSTAINABILITY IS MORE THAN A BUZZ WORD. IT IS KEY TO ALBERTA'S CONTINUED ECONOMIC SUCCESS IN CANADA AND AROUND THE WORLD. GLOBAL MARKETS ARE DEMANDING SUSTAINABLE ENERGY SOLUTIONS. ALBERTANS ARE ASKING TO LIVE IN SUSTAINABLE COMMUNITIES. THE UNIVERSITY OF ALBERTA AIMS TO BE PART OF THE SOLUTION.

Through groundbreaking research, innovative collaborations, and insightful operational management, the U of A has become a leader in sustainability practices. In 1975, the U of A launched the Energy Management Program, now called *Envision*. This program ensures minimal energy is expended in day-to-day facility operations. Envision has saved $274 million and about 2.3 million tonnes in CO2 emissions. Over the next seven years, Envision is projected to save another $26.6 million and prevent the emission of 210,000 tonnes of greenhouse gases.

More than 225 U of A researchers are involved in environmental and energy research. Ten of the 18 faculties offer academic programming in energy and the environment. Many courses are designed to give real-world experience in sustainable practices, such as civil and environmental engineering students who perform an annual audit of campus waste. This innovative class provides hands-on learning for students, helps the institution reduce waste, and develops future sustainability leaders.

The university established the Office of Sustainability in 2009 in order to connect, unite, and promote on-going sustainability initiatives and research. The office serves as an information hub and celebrates the U of A's commitment to ingraining sustainability in all aspects of university life. Through social media and outreach programs, the office makes more than 10,000 connections each month.

The U of A is committed to building a sustainable future for Albertans. By greening our campuses, investing in research, and educating our students, the U of A is a sustainability laboratory where best practices are tested, studied, modelled, and shared with partners across the province.

OUTCOMES AND BENEFITS:

- 100% of future building construction receiving provincial funding will be designed and certified to a minimum LEED© Silver standard.
- More than 1,250,000 M2 of U of A buildings are maintained with a sustainable cleaning program, Cleaning for a Healthy U.
- 100% of North Campus landscaping waste is composted and mulched.
- The U of A received a silver rating from the Sustainability Tracking, Assessment & Rating System (STARS™), ranking second among the 22 Canadian institutions currently rated.
- A portion of the proceeds from beverage container recycling supports the Green Grants program, with 28 projects awarded a total of $25,000 in funding since 2010.
- In 2013 list of Canada's Top 100 Employers, the U of A was recognized as one of Canada's Greenest Employers for a fifth consecutive year.
- U of A chemical engineering student Crystal Theodore has led an award-winning team of her peers to develop a method of transforming waste paper into chemicals, such as shikimic acid, for use in anti-flu drugs like Tamiflu.

CAPITAL PLAN

Over the past ten years, the University of Alberta has undergone tremendous growth. Total student enrolment has increased 20 per cent, fulfilling access goals of both the province and the university. Graduate student enrolment has nearly doubled. During the same period, we have seen a concomitant increase in our research productivity and international profile and reputation.

In the competitive world of post-secondary education, the U of A must strive to provide consistent, high-quality learning experiences and infrastructure that attracts, retains, and engages outstanding faculty, staff, and students. As the university changes, so must its space needs and requirements. The university has leveraged significant and continued capital funding by proactively planning for the construction of new learning and discovery spaces and the advancement of much needed reduction in deferred maintenance. The university's ability to quickly respond to funding opportunities and partnerships as they arise is only made possible by actively engaging in design activities that anticipate future needs.

Continued investment for renewal and repurposing, deferred maintenance, and new facilities remains key to the university's ability to meet its own, and the province's, objectives. With the recent completion of several large-scale capital projects, the university now has the opportunity to sustainably maintain and, where appropriate, repurpose aging assets and infrastructure as new funding is made available. As areas/buildings are vacated by programs relocating to newly constructed buildings, smart, forward-thinking planning requires that we look beyond simple renewal and explore repurposing opportunities. By coupling renewal and backfill projects, the U of A provides a best-value model for creating projects that look toward our future operational and academic needs at a reduced capital cost. However, strategic investment in new infrastructure and buildings still remains vital in maintaining the delivery of first-in-class academic programs. To that end, wherever possible, the university will seek opportunities to leverage existing funding, utilize the equity in our current physical assets, and explore various partnerships and project delivery models.

As in previous years, the following Capital Plan endeavours to take a balanced approach in identifying planning, engineering, and/or construction needs. As we look forward, the following five strategic focus areas guide our capital planning efforts:

- Ensure that we continue to maintain the condition and functionality of the university's physical assets, which play a critical role in our ability to attract, support, and retain the best students, faculty, and staff.

- Couple backfill requirements with renewal projects to provide a best-value model for capital projects that meets the pedagogical needs of tomorrow's learners and the requirements of researchers in a more cost effective manner while positively enhancing utilization of our space.

- Fund pre-design services for strategic institutional capital priorities, creating an inventory of projects that can respond to future funding opportunities and be readily implemented through a variety of project delivery models.

- Provide purpose-built, supportive student housing for up to 25 per cent of full time enrolment to keep pace with U15 peers, enhance completion rates, and ensure accessibility for rural and underrepresented Albertan students as well as international students.

- Strategically plan and construct critical new facilities, respecting the varied needs of the university's five campuses as they each serve unique and separate constituencies within Alberta.

Aligning with Alberta's Priorities

The University of Alberta's Capital Plan forms the basis of the institution's request for capital funding from the Government of Alberta—the U of A's primary funding partner. It outlines both short-term priority projects, which address current space, program, and renewal needs in light of expected differential growth, and long-term forecast needs anticipated over the next ten years. Through the Capital Plan, the university continues to align with government priorities and goals as identified through the Ministry of Enterprise and Advanced Education and the Ministry of Infrastructure. At the same time, the plan is also a critical tool in seeking and securing opportunities to leverage capital planning priorities with public, private, and institutional partners. Flexibility and consultation between university and provincial officials is essential as Alberta Infrastructure further develops and implements such directives as achieving sustainability through LEED®, Green Globes™ and BOMA BESt™ certification, prudent management of capital grant expenditure in capital project implementation, and identification of deferred maintenance.

As we move forward through the institution's second century, the U of A's vitality and vibrancy can only be maintained through well-supported, well-planned, and strategic repurposing and renewal of its facilities. Currently, the university's facility inventory (supported and unsupported) totals 1.65 million square meters, and while we realize that there are limited dollars for new capital, we continue to plan and partner to accommodate strategic and critical expansion needs across the university's five campuses. Examples of current partnered initiatives being considered include the Twin Arena project (South Campus), Student Residences/Housing (various sites), Phase 1 District Energy Plant for South Campus, a Leadership College (North Campus), and various downtown initiatives.

Given current marketplace and best-value procurement models, envelope funding for planning and preliminary engineering of critical projects puts the U of A and government in the position to quickly enter the construction market as funds become available. This planning process begins with updating and refining elements of the Long Range Development Plan (LRDP)—specifically related to land use—to ensure that the university can continue to plan and develop its campuses to meet the short- and long-term needs of the institution. Envelope funding also allows the university to strategically advance high priority projects of the university, which, in turn, provides more refined project scopes and budgets necessary to identifying the most appropriate implementation strategy, including public-private partnerships (P3) options. The U of A was able to capitalize on and meet the aggressive timeframes of the federal Knowledge Infrastructure Program (KIP) because of this kind of shared long term vision for the future.

With past capital funding, the U of A has recently completed and opened several new and renewed formal learning and research spaces. However, enrolment

increases and student demand continue to strain existing academic support space like fitness facilities, formal and informal collaboration/social space, libraries, collections and storage, housing, and daycares. Facilities and spaces like these help to attract and retain students, faculty, and staff because together they form an environment that is conducive to successful academic experience. When properly developed, student housing can be a key driver leading to successful learner outcomes and strong alumni relations with the institution. The university will continue to work with government to explore various development models for student housing that both minimize initial capital investment and result in housing options that are attractive and supportive for students.

In response to the measures and goals outlined in the university's academic plans, and in light of differential growth of our graduate programs, differential space requirements for graduate versus undergraduate space, program enhancements, changing pedagogy and program delivery methods, and the need for additional academic support space, a number of strategic new and expansion projects across the five campuses of the university are in process and will be needed in future. While all U of A campuses work together as a whole, each serves distinct and separate constituencies within Alberta and have unique capital priorities, putting the university in a unique position within the Campus Alberta model.

The long term capital priorities outlined at the end of this chapter advance the goals of the institution and provide a rationale for addressing areas of greatest need. Outside of identifying needs and capital requests to government, the Capital Plan provides a mechanism for the university to target and leverage partnered funding. The U of A remains committed to seeking partnership opportunities that leverage provincial funding and maintain the momentum of the university's initiatives in support of its vision and government's priorities for post-secondary education.

Highlights of 2012-13

INITIATIVES

- **10-Year Strategic Preservation Plan for Maintenance and Functional Renewal:** The U of A and the provincial government continue to refine data, reporting, and collection tools (RECAPP) for methods to assess priorities and understand the scope of conditional and functional problems, and to identify potential funds for remediation. Prioritization of the application of available funding is required to strategically address those facilities in poor condition and requiring functional improvement to meet the needs of increased and changing programming.

- **Campus Planning:** Four years of consultation with respect to our changes in our Long Range Development Plan, as it pertains to the South Campus, concluded in March 2013. The university will now be taking the revised plan through our governance process to seek final board approval before providing the documentation to the Minister of Enterprise and Advanced Education under the terms and conditions outlined in the Post-Secondary Learning Act.

- **Energy Management Program:** Given the success of the current program, the university has initiated a second generation of the Energy Management Program. As in previous years, we propose that this program be financed through borrowing and paid back through resulting energy savings.

- **Gathering Place:** The University, in partnership with many of our Aboriginal partners, has completed an initial functional program and site study for a gathering place on our North Campus. Its primary focus will be to support the cultural functions of Aboriginal students, the University of Alberta, and the greater community at large. It is also intended to function as an interdisciplinary centre of learning to facilitate a high quality dialogue between Aboriginal students and staff across all academic disciplines of the university.

- **Leveraging/Collaboration:** The University of Alberta continues to explore leveraging and collaboration opportunities with respect to our assets, people, and skills as a means of advancing the institution and providing a degree of stability.

- **Student Housing:** The university's goal to house up to 25 per cent of its full-time enrolment in purpose built, supportive housing remains and the university continues to develop plans and business cases for further development. Additionally, activities are taking place simultaneously (LRDP amendment, Sector Planning of Michener Park, housing partnerships and modernization studies) to aid us in a development program that will provide the context for future development.

GOVERNMENT OF ALBERTA FUNDING

- **Dentistry Pharmacy Repurposing:** Dentistry Pharmacy is a landmark building on our North Campus and the university is committed to developing a plan that will see this building remain as a critical center within the campus environment. Government has provided the much needed funding required to determine how this landmark can be recast to serve the university. A number of studies have been undertaken and a final design development report for the shell and core of the facility is expected to be completed for the summer of 2013. The outcome of this activity will provide a comprehensive report that will outline potential use, project delivery options, and budgets for further funding consideration.

- **Infrastructure Maintenance Program:** Current funding levels of the Infrastructure Maintenance Program (IMP) grant, together with recent one-time special project funding, have allowed the university to maintain its trend in reducing its deferred maintenance liability. Maintaining the current funding levels of our IMP grant is critical for both preventing increases in our deferred maintenance liability and reducing the risk of catastrophic failure of some of our buildings systems. In addition, increases to either base funding or additional one-time grants are required to limit the growing risk to this liability (Refer to Figure 18 in the "Current State of Assets" section of the report).

- **Preservation Projects:** Projects funded and undertaken in recent years have resulted in reductions in the Facility Condition Index (FCI) of some facilities. Refer to Figure 16 in the "Current State of Assets" section for a listing of current preservation projects and their associated reduction in FCI.

- **Renewal and Backfill Projects:** Prudent project management of capital projects has resulted in positive project variances as these projects have been completed. Working closely with government, a number of repurposing and renewal projects directly related to these projects have been identified.

PARTNERSHIPS WITH COMMUNITIES, POST-SECONDARY INSTITUTIONS, AND PRIVATE ORGANIZATIONS

- **Camrose Performing Arts Centre:** This project was made possible through strong capital and program partnerships with the city and county of Camrose. Located on Augustana Campus, construction of this facility started in the fall of 2012 with an anticipated completion date of January 2014. This facility will serve a large number of local and surrounding area groups. Through future expansion plans, this project also accommodates opportunities to develop and construct space to further support Augustana's Fine Arts program.

- **Canada Foundation for Innovation (CFI) Contributions:** Over the last ten years, the university has received approximately $204 million from CFI for major infrastructure purchases, including equipment, renovation, and new construction. This funding has directly leveraged approximately $279 million from other sources, including the province of Alberta, corporate partners, and other funding agencies.

- **Enterprise Square Galleries:** In December of 2012, the City of Edmonton approved funding for joint programming and operation of the Enterprise Square gallery space which focuses on arts and culture. This space will be used to showcase the city and university's respective museum collections and the work of local artists.

- **TEC Edmonton:** TEC Edmonton has provided tremendous growth and program opportunities for all partners. They have indicated their desire and need to expand within Enterprise Square and are currently seeking funding for this work.

- **Islamic Garden:** In June 2009, His Highness the Aga Khan announced plans to create a traditional Islamic garden within the university's Devonian Botanic Garden (DBG) in recognition of the growing partnership between the university and the Aga Khan University. Due to recent planning exercises and a recent visit of His Highness, the Islamic Garden will be moved to a different location within the DBG than originally planned. The design team is working towards finalizing the concept plan and budget. The Ecological Learning Centre is a critical piece of garden infrastructure that is intended to integrate this and other gardens within the Devonian Botanical Garden site, providing learning and research space, community outreach programs, and support the visitors and tourism.

- **Pan-AM Junior Games:** In partnership with Alberta Athletics and the city of Edmonton, the Pan-AM Junior Games will be hosted in Edmonton at Foote Field in the summer of 2015. The university's involvement in these games is just one example of how we build partnerships and share world-class facilities to build a stronger reputation for our city and province.

PROJECT COMPLETION

- **Edmonton Clinic Pedways:** Connecting the Kaye Edmonton Clinic, Edmonton Clinic Health Academy, and the Walter C. Mackenzie Centre via an overhead pedway system was the last, but critical, component to the original program of the Edmonton Clinic facilities. This pedway network provides a connection to the city of Edmonton LRT platform, which will allows students, staff, and general public to easily travel between the three facilities, with the added benefit of reducing ground-level 114th Street crossings.

- **Medical Isotope and Cyclotron Facility:** The Medical Isotope and Cyclotron Facility is a partnership between the University of Alberta, Alberta Health Services, Enterprise and Advanced Education, Alberta Infrastructure, Alberta Health, Natural Resources Canada, and Advanced Cyclotron Systems that produces a stand-alone, medium-energy cyclotron facility with an integrated radiopharmacy. This facility will be used as a research and academic facility that houses both University of Alberta and Alberta Health Services teams working on medical isotope research and the production of medical isotopes. The medical isotopes produced in the facility will be used locally to diagnose and treat patients with cancer, cardiac, neurological, and other diseases.

- **Glen Sather Clinic and Dentistry Clinic:** With the recent completion of the Kaye Edmonton Clinic, the University of Alberta's Glen Sather Clinic and Dentistry Clinic were relocated and opened. This new space enabled these two programs to expand clinical services and collaborations and ease patient access to their facilities.

- **Li Ka Shing and Katz Buildings:** Work completed this year covered a variety of department fit outs along with several special build initiatives, the areas of development included; Dentistry / Ophthalmology, Hydroclave / Helium Recovery, Biobank, BSL2, and Pharmacy Phase 1 / WCHRI. Each of the fit outs moved the University closer to the overall completion of the program development within the two buildings. Advancing through 2013/2014 the areas of remaining development included the CGMP area, Pharmacy Phase 2 and smaller pockets of support area development.

MAJOR FUNDED CAPITAL PROJECTS UNDERWAY

- **Agricultural, Life & Environmental Sciences (ALES) Research Stations:** Facilities at several ALES locations are being upgraded to meet expanding research and infrastructure requirements including sites at South Campus, St. Albert, Kinsella, and Mattheis Ranch. Work includes new buildings, renewal of various existing farm assets, basic underground services, and expansion of our rolling stock equipment inventory.

- **Innovation Centre for Engineering:** Even with the renewal and repurposing of the existing Chemical and Materials Engineering building, there is a continued and pressing need to develop additional program space for the Faculty of Engineering. The university continues to advance on the construction of the base shell and core of this facility, with construction completion scheduled for September 2013. This facility will provide a contiguous home for the administrative office of the faculty, as well as necessary research and collaborative space for the faculty's graduate students. The fit-out of this project is highlighted in Table 3 – Highest New and Expansion Priorities.

- **Physical Activity and Wellness (PAW) Centre:** Construction of this facility began in late 2012 in response to growing demand for additional recreation and fitness space as well as research and programming in the Faculty of Physical Education and Recreation. This project is funded in partnership with the Students' Union, Graduate Students' Association, Alberta Lotteries, private donors, and institutional dollars. Funding requests for this centre have been removed from the Capital Plan.

- **Pharmacy Fit-Out:** Phase II of the Pharmacy fit-out within the Medical Sciences building has commenced. This space is connected to both the Katz Group Centre for Pharmacy and Health Research and Edmonton Clinic Health Academy and provides needed space for the dean's office, student services, and teaching and research space. Scheduled completion is September 2014.

- **Student Housing:** Construction of approximately 250 beds within East Campus Village has commenced and will be ready for occupancy in September 2013. These new residences will provide housing for undergraduate, international, and graduate students, and will support the university's goal of providing on-campus housing of up to 25 per cent of its full-time student population.

- **South Academic Building Repurposing:** A portion of the South Academic Building has been repurposed and renewed to accommodate the growing need for wet lab space for the Faculty of Agricultural, Life and Environmental Sciences. This space has attracted world leading researchers in the areas of soils reclamation and water research.

Key Focus Areas and Capital Planning Considerations

The Capital Plan assumes that government guidelines and directions, including sustainability initiatives, must be met in undertaking planned projects. The university continues to work with government to develop a sustainability model for the institution that would be approved by all parties to facilitate sustainable design and operational practices.

The university's highest project priorities (See tables 1, 2, and 3) have been identified as requiring additional funding support from the Alberta government. Due to continual review of budgets and scopes of previous and emerging projects, the priorities and estimated costs within the Capital Plan may not match the university's list of capital projects or values as outlined in the 2013-14 BLIMS submission. Project cost estimates are reviewed and updated annually and adjusted as required. The projected cash flow requirements for completion of priority projects are outlined in the Major Capital Requirements: Ten-Year Forecast, located in Table 4. Estimates have been adjusted to align with current market conditions and the university's and government's experience of the current construction costs and projected market escalation.

FOCUS AREA 1: CONTINUE REDUCTION IN DEFERRED MAINTENANCE LIABILITY

Infrastructure Maintenance Program (IMP) funding remains critical, especially as a source of funding that continues to be leveraged in partnerships with other internal and external funders, multiplying the value of the money many times over.

Recognized deferred maintenance specifically identifies condition-related deficiencies recommended for remediation within five years under a series of events that are established by the provincial government. At the time of this report we are still awaiting release of information from Alberta Infrastructure on the 2012 updated audit values. Last year, the estimated total liability of recognized deferred maintenance on supported and unsupported university facilities totalled $820 million: $684 million for supported facilities and $123 million for unsupported (ancillary) facilities.

Elements like code upgrades, hazardous material removal, functional program upgrades, barrier free access upgrades, indoor air quality upgrades, and various energy and operational efficiency upgrades are not recognized by government as deferred maintenance. It is estimated that this liability is in the range of $400 million.

The provincial reporting process for deferred maintenance uses Facility Condition Index (FCI) values, which are calculated by totalling the value of deferred maintenance and dividing it by the estimated replacement value of the facilities. While the institutions' reduction in its deferred maintenance liability has flattened as a result of limited new, one-time funding grants, the FCI for specific targeted buildings has improved significantly as reported in the annual "Good News" reports issued to the government.

ASSUMPTIONS

The University of Alberta has assumed that, as a minimum, the current IMP funding levels will be maintained. The main focus will be on the continued preservation, repurposing, and renewal of its facilities. It is hoped that the economic slowdown will continue to present opportunities for more competitive bidding and excellent value for approved projects.

Any building planned for renovations will have associated decant space available during construction, and any facility planned for major renovation or renewal will remain in use for an extended period of time after the renewal program is complete. Also, the university and government assume that a portion of annual IMP funding available must be either initially uncommitted or have the potential to be reallocated to allow for contingency and emerging issues that arise during each year's operations.

Finally, the institution must support whatever a building's primary function is, now and in the future. This strategy is aimed at ensuring effective and efficient building use, and maintaining the university's existing inventory while transforming learning environments to meet the needs of tomorrow's learners, educators, and researchers.

OBJECTIVES

- Continue to maintain the condition and functionality of the university's physical assets, which play a critical role in our ability to attract, support, and retain the best students, faculty, and staff.

- Reduce the risk of buildings' system failures which could result in building closures.

- Identify and proactively address deferred maintenance in a collaborative way with government, and identify assets at, or near, the end of their functional life.

- Aid in the assignment of preservation funding. The university will continue to address renewal programs such as roofing, building envelopes, piping, sidewalks, life safety, and security. The university will support these programs by allocating a portion of IMP dollars across the institution, as accepted by the province and within the guidelines set by the IMP.

- Obtain sufficient resources to meet priority and contingent needs for maintaining and upgrading existing facilities.

- Maintain the reliability of our utility plant through focused investment in the functional renewal that deals with both deferred maintenance and increased efficiency with new technology.

INITIATIVES

- **Three-Year Infrastructure Maintenance Program Expenditure Plans:** This initiative was adopted by the university in 2004 and formalized with a request by government for an initial submission in 2008. The rolling three-year plan has been part of the university's annual reporting to government and is carried as a financial update in our quarterly reports to provide timely progress reports on the use of grants.

- **Update to the 10-Year Strategic Preservation Plan for Maintenance and Functional Renewal:** This initiative began in 2005 and was updated in 2010–2011. The next update is scheduled for 2014-2015 and will provide the university and government with updated strategies and project prioritization to maintain and renew the institution's owned facilities, as a result of new IMP funding commitments, IMP guidelines, and changes in building renewal priorities.

- **Life-Cycle Costing:** The U of A will be working with government to prepare a planning document related to infrastructure, deferred maintenance, renewal, and repurposing needs that would provide a long-term life-cycle cost approach addressing all aspects of a facility. This plan would allow for a long-term funding approach to address the backlog of deferred maintenance and facilities renewal and/or repurposing requirements. This plan, which must be data driven, will break new ground regarding the process for funding requests.

- **Preservation - Good News Stories:** Initiated in 2010, the university has now prepared a trio of "Good News Story" brochures on achievements in reduction of deferred maintenance and renewal of facilities. The university intends to continue reporting on an annual basis.

- **Heating Plant Expansion and Renewal:** The university will seek government funding to ensure the continued supply of reliable services to our campus and the surrounding government buildings served by our central plant. The possibility of leveraging this investment with additional institutional borrowing to install a new co-generation plant that could produce both steam and power simultaneously will also be examined. This project would reduce the campus' overall carbon footprint, reduce our demand to the Alberta grid system, and increase our capacity to produce reliable power.

- **Building Certifications:** Committed to working within available budgets and maintaining sustainable construction practices, the University has started a trial process to ensure that major renovation and renewal projects are certified under "Green Globes". Projects that are targeted for sustainable construction certification are listed in the quarterly report.

KEY ISSUES

- **Sustainability:** By renewing targeted buildings that are functional and structurally sound, the university can lower the carbon footprint and energy requirements in older assets. The potential social, environmental, and economic benefits can be dramatic.

- **Operational Continuity:** An inability to maintain the operations, functionality, and utilization of capital assets places the institution at risk of negatively affecting current and future research, teaching, and learning.

- **Alternate Funding:** The university continues to work with government to explore projects that could provide an opportunity for a brownfield redevelopment within a P3 project model and explore how our land assets could be leveraged in providing needed endowment reserves.

FOCUS AREA 2: COMBINATION PHYSICAL/FUNCTIONAL RENEWAL PROJECTS VIA BACKFILL OPPORTUNITIES

ASSUMPTIONS

Recent investment in new facilities has created an opportunity to creatively address both the physical and functional renewal of our buildings, resulting from the U of A's institutional mandate to grow research capacity as a comprehensive academic and research institution. However, older facilities are not designed to accommodate the increased functional and operational demands associated with the research-intensive programming in the university's vision and mandate. Therefore, the coupling of functional and physical renewal projects through backfill projects provides a best-value model of capital projects that minimizes the need for new buildings and meets the pedagogical needs for tomorrow's learners and researchers at a significantly reduced capital cost.

OBJECTIVES

- Maximize the opportunities to identify and proactively address deferred maintenance in recently vacated space, through joint renewal and repurposing projects.

- Support the academic and research goals of the institution and maximize use and life of existing infrastructure, by ensuring that space is functional for current and future learning and research.

INITIATIVES

- **Backfill Program:** The completion of the Edmonton Clinic Health Academy and Centennial Centre for Interdisciplinary Science has resulted in freeing a number of aging and outdated learning and research spaces within existing facilities on our campuses. This plan will provide a review of academic needs and how they could be best accommodated within these spaces. Conceptual scopes and budgets will be established to facilitate ongoing dialogue with government on how best to address these joint renewal and academic needs.

- **Functional Deficiencies Data:** The University of Alberta, in partnership with government and other post-secondary institutions, is in discussions to develop a system that will supply data, currently unavailable, for functional deficiencies in buildings. This will be a long-term initiative.

- **Project Identification:** Working with various faculties' general space programs, the university will identify backfill opportunities that exist within buildings where there are high deferred maintenance needs.

- **Student Housing:** The university has recently completed studies with respect to the modernization of HUB and Lister Centre student housing communities, and has initiated sector planning for the redevelopment of family housing at Michener Park. We are also working with the community to finalize land use and preservation plans for East Campus Village.

KEY ISSUES

- **Reduce Capital Requirements:** Renewal and repurposing of target buildings that are functional and structurally sound result in lower overall capital costs when compared to the cost of a comparable new green field building.

- **Space Utilization:** The university is reviewing space utilization to determine how underutilized space could provide logical and comprehensive swing space during renewal or repurposing projects.

- **Renewal and/or Repurposing:** Adequate funding for repurposing space in key older buildings is still a challenge. Deferred maintenance is an ongoing issue, but when renewal projects are coupled with modernization projects, the entire functionality of the building is upgraded to meet the needs of today's learners, teachers, and researchers.

- **Backfill:** While not normally thought of as being a part of preservation, nearly every project has some backfill and adjacency impacts. Upgrades required in adjacent facilities have an impact on the cost of major projects, such as when these spaces can accommodate required swing space to lower project costs associated with multiple phasing of larger renewal projects.

FOCUS AREA 3: ENVELOPE FUNDING FOR PRE-DESIGN SERVICES

ASSUMPTIONS

Prior to entering design phases for a capital project, certain services, beyond the capacity of the institution's staff, must be procured in order to clarify needs (e.g. general and functional space programming), outline scope and size, identify solution alternatives, select the preferred solution, and determine a relatively firm cost. When dealing with existing facilities, it is imperative to understand the facility's constraints within which the project team must work. In addition, services of external professionals are often required to assist with significant initiatives, such as studies and master plans to clearly define objectives, future use, and adjacency issues. Past project experience has reinforced the value of preliminary engineering efforts, resulting in projects being delivered on time and on budget.

The traditional funding model sees projects initiated once full funding is secured; projects generally take three to five years to deliver, depending on scale and complexity. However, the university has also had significant success using partnerships to deliver its capital priorities, resulting in reduced capital requirements compared to the more traditional approach. To effectively develop and explore partnership opportunities, significant up-front work is required to properly scope, budget, and vet potential projects. The university is seeking pre-design funding to create an inventory of projects ready to move forward as new capital funding and/or partnership opportunities become available.

Pre-design services must provide a clear tie between campus development and the immediate and long-term strategic vision of the institution. The university understands that approval of pre-design does not constitute approval for, or promise of, future capital funding for a specific project. However, being ready as funding becomes available, the university can potentially save millions of dollars in inflationary costs that might be incurred if construction is delayed.

There are a number of examples where upfront pre-design has aided the university to actively engage and leverage partnership funding opportunities. For example, taking a staged approach with the Li Ka Shing Centre for Health Research Innovation and the Katz Group Centre for Pharmacy and Health Research buildings allowed for a proactive and quick response to the demands of the federal KIP program.

OBJECTIVES

- In the short term, seek funding for pre-design services related to strategic and critical projects or initiatives both to provide greater scope and budget certainty and to enable responses to new funding in a timely manner. As greater levels of funding become available, seek a long-term funding envelope program that would include government contributions through capital grants as well as partnered contributions from internal sources where possible.

- Provide strong and clear campus planning documents that are rooted in leading urban design and sustainability principles. The plans will seek to provide the necessary direction, ensuring the academic program needs of the university are met, with careful consideration to the expressed interests of the surrounding neighbourhoods.

INITIATIVES

- *Secure Funding for Pre-Design Services:* In October of 2009, a letter was submitted to government outlining the importance of pre-design funding in the current economy. The letter outlined two potential approaches to pre-design funds. The first was a list of projects and estimated design costs per project, with funds proposed to be disbursed over three fiscal years. The second approach was to work with government to establish an annual funding allowance. At that time, the suggested annual planning request was $3–4 million.

- *Project Readiness and Responsiveness:* Within this framework, projects yet to be approved would be partially advanced prior to project approval. Taking this action provides significant benefits since better defined project scopes and budgets provide a higher level of program and cost certainty. It also facilitates a quantitative and qualitative approach in matching the project with the most appropriate delivery model, whether that is a traditional design bid build or a more entrepreneurial P3 approach. Lastly, it positions the institution and government to respond quickly to the ever-changing construction marketplace and new potential funding programs.

KEY ISSUES

- **Backfill Planning and Repurposing:** With the completion of a number of new buildings, there is an opportunity to leverage renewal with redevelopment. Given the goals and aspirations outlined in the CIP and the existing deferred maintenance associated with these buildings, there are a number of factors that require consideration in assessing the residual capacity resulting from new construction. Upfront planning will enable the university to create a renewal and repurposing plan to ensure today's assets can deliver tomorrow's programs (as identified in the respective General Space programs for the various faculties and administrative units) in the most sustainable way.

- **Increased Research Intensity:** As a research-intensive institution, there is a growing need to convert administrative and undergraduate space to accommodate growth in graduate, doctoral, and post-doctoral programs. These research programs require significantly more physical space and infrastructure than the university's aging inventory can accommodate. Advanced planning is essential to investigate how to best renew and repurpose these areas to maximize utilization.

- **Increasing Area of Aging Infrastructure:** While new construction has accommodated the planned growth of the institution, the university must continue to respond to the university's learning goals. There are a number of targeted buildings for which planning work must be completed: Dentistry/Pharmacy, Medical Sciences Building, the Clinical Sciences Building, and the South Academic Building (formally Civil Electrical Engineering Building). Advanced pre-design funding for condition concept studies and reports would provide the opportunity to responsibly accommodate future growth, while aligning with the expectations of government.

- **Campus Planning and Community Expectations:** The university continually engages its neighbours and stakeholders in the planning and design of its campuses as they develop. Communities increasingly demand that the university's planning documents be detailed enough so they are fully aware of the impacts of development. Critical to a project, such as development of sector plans for the South Campus, is the creation of a framework that provides clarity and understanding, as well as an interpretive plan that guides a multitude of designers and planners for the next 30-plus years.

- **Long Range Development Plan:** The LRDP needs to be updated to reflect new lands acquired, such as Enterprise Square, St. Albert lands, Devonian Botanic Garden, Kinsella Ranch and Mattheis Ranch. As well, there are a variety of sector plans that need to be updated, resulting changes that will, in turn, need to be reflected in the LRDP.

FOCUS AREA 4: STUDENT AND WORKFORCE HOUSING

ASSUMPTIONS

The university continues to respond to pressures for additional student residences, faculty and staff housing, as well as accommodation for visiting researchers. Research indicates that the quality of housing facilities and the academic programs correlate with academic performance and the attraction, retention, and success of students, faculty, and staff. The university aims to provide purpose-built housing for up to 25 per cent of full-time students, which is in line with our peer institutions.

To fulfil the objectives of the university's white paper on student housing, the academic plan, and the priorities of the Government of Alberta, the university plans to increase on-campus, purpose-built, supportive and accessible housing, and also plans to answer an increasing need to integrate support programs and academic learning space into student housing that meets the needs of targeted groups such as graduate, rural, Aboriginal, and international students. Faculty, staff, and mature students with families are also increasingly seeking housing options at the university, and must be included in current planning.

OBJECTIVES

- Use the findings and recommendations contained in the U of A's white paper "Student Housing – for Now and for the Future" (August 2009) to provide the context of further discussion and planning concerning housing on campus.
- Continue working with Enterprise and Advanced Education, other ministries, and stakeholders to develop creative housing solutions that meet the goals of the university, students, and their families.
- Emphasize the importance of funding for residential program space that supports the academic mission and student success.

INITIATIVES

- **Residence Services Accommodation and Program Study:** The Residence Services Accommodation and Program Study: Dare to Deliver presents a road map with respect to how residences might develop in the future as well as what types of programs and activities should occur in support of the development of the whole person. The university will be using this document as a guide in planning and developing additional space to provide opportunities and access to rural, Aboriginal, underrepresented, and international students, as well as students with families.
- **Condition and Functionality:** The university does not receive targeted deferred maintenance funding for student residences. Student residences have high infrastructure needs and these are compounded by the university's inability to recover the current backlog costs of maintenance or modernization via rental revenues. In 2010–2011, the university began reviewing strategies that would help build a reserve fund to be accessed

for maintenance and renewal of student residences (Residence Services Capital Reserve Strategy, June 2010), and our newest student housing complexes have building reserve integrated into the rental rates. Changing student demographics and requirements as well as improved understanding of program delivery are driving the need for modernization in several of our older student residence communities. The university will continue to work with government to identify one-time and continuing deferred maintenance funding for student housing in order to prevent closure of much needed residence spaces.

- **Capacity:** The university continues to explore strategies to add student residence capacity on its campuses, as well as to provide workforce housing options on the West 240 lands on South Campus.

- **Partners:** The university will continue to meet with private sector developers to explore viable options to achieve our residence and housing targets.

- **Property Taxes:** The university will continue to discuss means of eliminating municipal property tax assessment on student housing, thereby directing more funds to critical deferred maintenance.

- **Lights-On Funding for Academic Program Areas within Residence:** In some student housing communities (especially in first and second year residences) as much as 20 per cent to 35 per cent of the gross area is being utilized to provide space that accommodates co-curricular programming, study halls, and other student support services. If these spaces did not exist in residences, there would be pressure to provide these spaces elsewhere on campus. The university will continue to work with government to find ways to acknowledge these aspects of student development and discuss ways to bring lights-on funding to academic program areas in residence spaces, which are currently being supported through rents.

FOCUS AREA 5: NEW SPACE

ASSUMPTIONS

Over the last few years the university, through the support of government, has added approximately 150,000 square metres of new and expanded space, most of which has already been accounted for in approved program expansions. As the university continues to take a measured response to growth, there is still a need for strategic construction of critical new facilities. It is also important to recognize that the needs of the U of A's five campuses vary, each serving unique and separate constituencies within Alberta.

The institution has identified a number of new expansion projects critical to the mission, vision, reputation, and global competitiveness of the institution, a majority of which were identified prior to the economic downturn. Some of the highest priority projects include the following: a building expansion to accommodate science programs at Campus Saint-Jean and Augustana campuses; a new School of Business building to accommodate growth within the faculty; a new School of Music within the Faculty of Arts; fit up of the Innovation Centre for Engineering; relocation and program accommodation at South Campus for the faculties of Agricultural, Life & Environmental Sciences and Physical Education and Recreation.

There are also a number of critical academic support facilities that have been identified for expansion, including the Cameron Library and Information Pavilions (Book and Records Depository [BARD] and a Curatorial Facility) and the Gathering Place. These academic support facilities are discussed in greater detail in the next section.

OBJECTIVES

- Outline the capital needs of the institution in order to deliver the vision and programs included within this Comprehensive Institutional Plan. Space must not only provide simple access, but also ensure that the entire educational and life experience is supported for student success.

- Confirm the state of the current inventory of academic support facilities; identify adequacy, appropriateness and availability; and engage government in discussions to outline the importance of these facilities and remediate identified shortfalls in these integrated program areas.

INITIATIVES

- **Priority Setting:** Continue to work with government to align priorities for new capital and partnerships.
- **Strategically Advance Planning:** Continue to work on advanced planning of high-priority projects so they are in a state of readiness once new capital funding becomes available.
- **Partnerships:** Continue to explore partnerships through donations and alternate financing and project delivery models to leverage any available funding and/or reduce initial capital investment.

KEY ISSUES

- **Provincial and Global Economies:** Currently the key issue affecting new space and corresponding capital is continued economic uncertainty and volatility. The university needs to continue to work with government to develop strategies that maximizes and leverages limited government resources.
- **Lack of Adequate Academic Support Space:** Over the past ten years, there has been a concentrated focus on funding projects that lead directly to much-needed increase in access. This has now put a strain on our academic support spaces, which have not grown proportionally with recent increases in enrolment.

ADDITIONAL PLANNING CONSIDERATIONS

CAMPUS ALBERTA

The university continues to work with its post-secondary partners to explore opportunities for sharing resources, both physical and operational, for the mutual benefit of Campus Alberta. The university has a significant intellectual resource base and capacity to assist and support Campus Alberta institutions as requested. When reviewing capital and operational needs of the sector, synergies and economies of scale could be realized through joint use of our physical assets (i.e. Book and Records Depository, Curatorial Research Facilities, and Student Housing). There is also an opportunity to leverage the operational and administrative skills within the Campus Alberta model to the advantage of the various Institutions and the Ministry.

FINANCIAL STRATEGIES TO SUPPORT CAPITAL

- **Borrowing:** It is critically important that the university work with government and its financial entities to develop alternative financial models that address current fiscal constraints within government. Borrowing is part of planning and building an internationally recognized research-intensive institution that will attract the best and the brightest faculty and students in the years to come.

- **Alternate Financing Arrangements:** Along with pursuing innovative partnerships for property development, the university also looks for alternative financing arrangements (i.e. bond issues and P3s) where feasible and advantageous. Increasingly, the funding of projects in this plan will reflect the partnerships noted above and will include funds from multiple sources. Donations, as well as partner contributions, will be sought and used to complete needed facilities. Leasing options will also be considered to lessen the demand for capital funding. The university will continue to seek ways to involve the private sector in the repair, development, and operation of new and existing housing inventory.

- **Partnership Development:** Opportunities to develop partnerships could allow the university to leverage funding and develop its physical resources in a cost-effective manner. While this priority initiative presents a major opportunity for the university to develop its physical resources in an innovative and cost effective manner, it also presents significant challenges to both the institution and province. First, the institution, along with government as its primary funding partner, must work within current public policy. Second, the university must carefully weigh the advantages apparent in a partnership arrangement against the potential loss of control over the future of its resources.

INFORMATION TECHNOLOGY

Although grants cover purchases for information technology, there is a need for agreement on government support of maintenance and replacement for core information technology services. A key element to this support is that it must flow from a new funding source and not be redirected from the existing facilities' deferred maintenance grant. Information technology is foundational in a modern building. It can be used to control security, power usage, air conditioning, elevators, telephones, and many other core services. This infrastructure eventually wears out and/or needs upgrading to continue meeting operational, teaching, and research needs.

OTHER INFLUENCES AND CHALLENGES

- Facility operating costs for high intensity research facilities may still be greater than the funding provided through the base operating grants. The university must carefully monitor actual costs in these facilities to determine if a significant shortfall continues and report to government accordingly.

- While the university appreciates and acknowledges the government's efforts to provide lights-on funding for the Centennial Centre for Interdisciplinary Science and Edmonton Clinic Health Academy, failure to provide adequate operational support and bridging would result in a significant operational shortfall to the institution that would directly impact overall operational service for existing facilities. As buildings are repurposed to accommodate additional research-intensive programming, there may also be a need to review operating costs and associated funding requests for differential lights-on funding to accommodate the program change within the building.

- The deferred maintenance liability cannot be significantly reduced unless an increase in grant funding and/or one-time funding is received for preservation and renewal projects. Although not recognized as deferred maintenance, there is also a need to expend significant amounts on functionality issues for which data is not readily available.

- The lack of available and affordable childcare options on campus is becoming a deterrent, not only to the recruitment of staff and faculty, but also to the attraction and retention of graduate students and students from traditionally underrepresented groups, such as Aboriginal people.

- New construction is required to achieve the LEED® Silver certification level. The university continues to engage government to look for the most economical means of validating building designs and operations in the interest of achieving the university's sustainability goals and is actively pursuing alternative, cost effective strategies to provide equal or greater certification levels at a lower cost. Consideration for alternate certification systems allowing for more prudent application of grant funds must be considered.

Current State of Assets

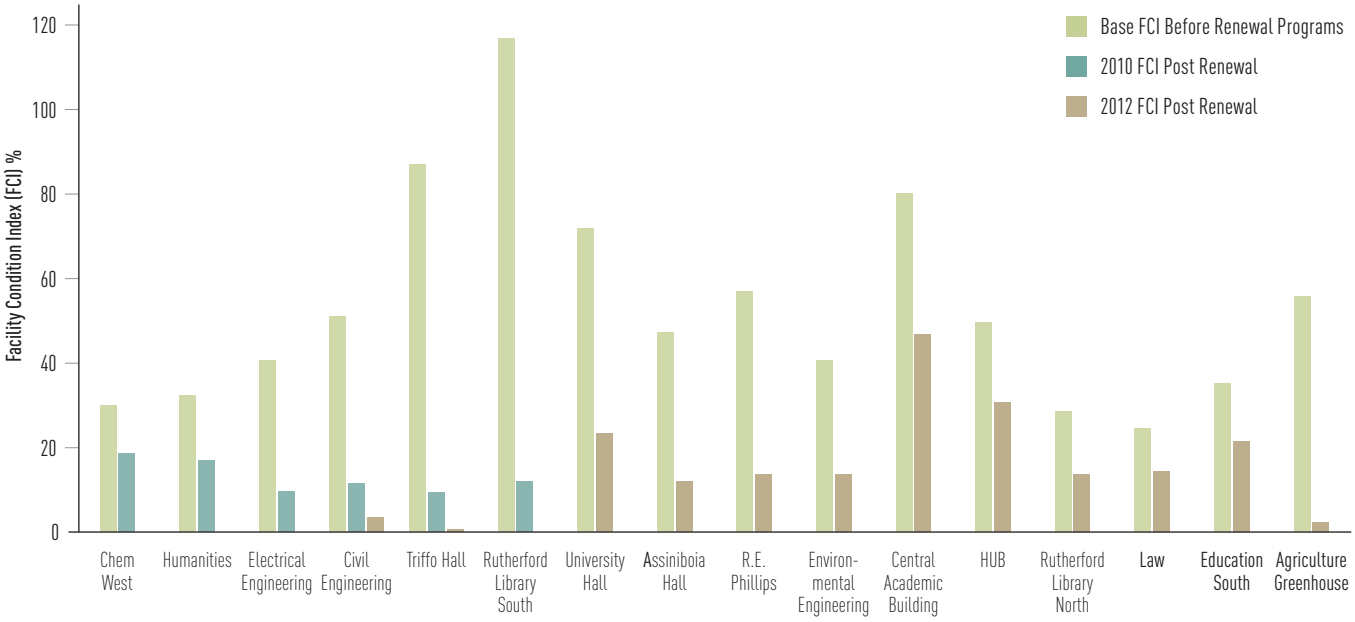
The university manages a portfolio of facilities totalling 1.65 million gross square metres over more than 500 buildings, of which 50 per cent are over 40 years of age. As part of reporting to government we also report on our buildings' Facility Condition Index (FCI). Approximately 17 of our buildings have an FCI over 30 with Dentistry Pharmacy being the highest at 66.

DEFERRED MAINTENANCE PROGRAM

The university is grateful for the continuation of increased IMP base funding support, which was received in 2012-13, and for variance reallocations, which have helped to address some serious condition and functional deficiencies. The U of A, with assistance from the Government of Alberta, continues to make progress in reducing the overall deferred maintenance value, which has resulted in significant improvements to the Facility Condition Index for a number of our buildings (see Figure 16).

The university will continue to provide a separate report on the progress made and the benefits of its deferred maintenance program. While current levels of regular IMP grants and replacement of older facilities have resulted in slight decreases to the measured deferred maintenance liability, current funding is inadequate to eliminate the backlog of infrastructure renewal required without supplementary one-time grants for large, high-priority projects. Additional deferred maintenance funding envelopes and/or one-time grants for deferred maintenance are needed for the university to make

FIGURE 16 FACILITIES WITH SIGNIFICANT MEASURED FACILITY CONDITION IMPROVEMENTS



significant inroads in reducing the deferred maintenance liability. Within current fiscal constraints, should there be a pull back on one-time funding assistance for preservation projects, the trend of a slight decrease to deferred maintenance is expected to reverse.

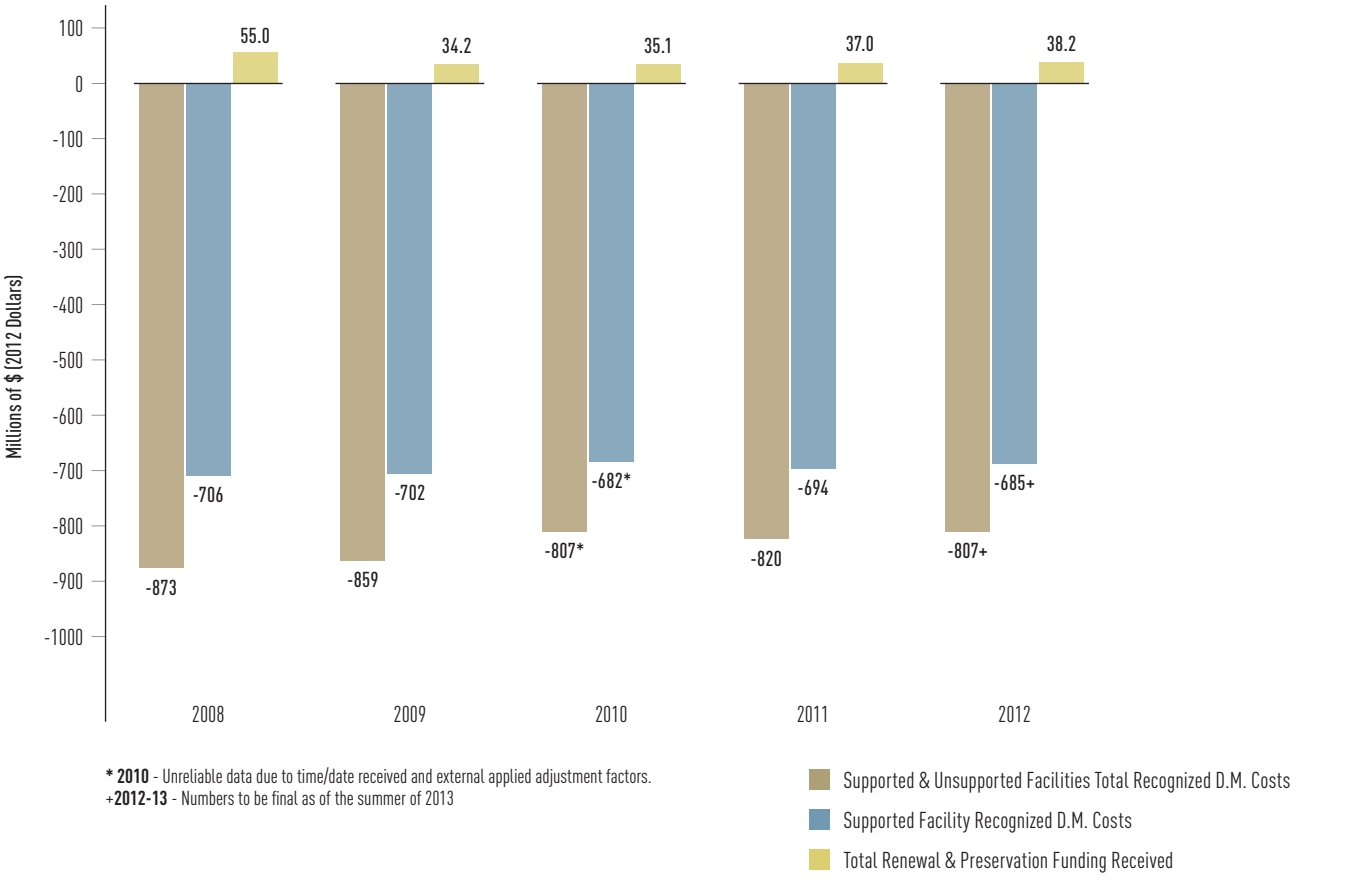
Figure 17 (Facility Deferred Maintenance vs. IMP and One-Time Funding) illustrates current comparisons between deferred maintenance backlog, current funding commitments, and the trend over the last five years.

Figure 18 (Recognized Deferred Maintenance for Supported and Unsupported Facilities, as of December 2012), shows the deferred maintenance backlog for supported and unsupported facilities by type of event. The largest area of deferred maintenance in our unsupported facilities is within our older student residences. While our newer facilities have a rental rate that supports a capital reserve as part of the operating budget, our older product does not. Strategic funding for the renewal of some of these older facilities is necessary to prevent unintended closures of this infrastructure.

Functional renewal costs associated with deferred maintenance are not recognized by government as deferred maintenance. It is expected that a systematic audit of functionality deficiencies will uncover substantially higher dollar figures. To date, the university has only completed an audit on asbestos and the associated removal costs.

Note: Failure replacements are audited events that are recognized as required to be done. Life cycle events are events that are projected typically in year five.

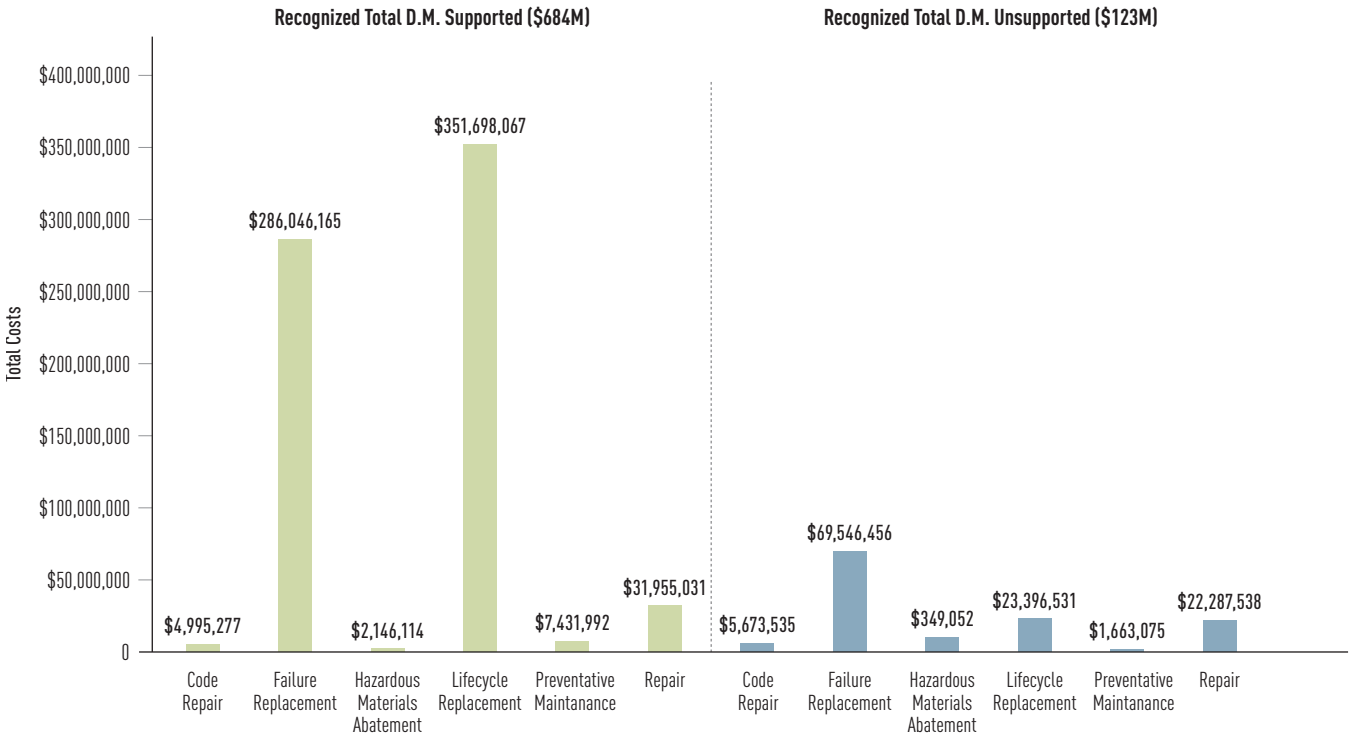
FIGURE 17 5 YEAR REPORTED FACILITY DEFERRED MAINTENANCE TREND VS. IMP AND ONE-TIME FUNDING



Risk Management and Life Safety Issues

Despite continued funding pressures and deferred maintenance backlog, some projects must proceed in order to respond to emergency situations. These projects may have to be funded from internal or alternate sources until specific grant funding is available from government. Also, contingency funds from existing funding can be inadequate to cover major system failures in large, aging facilities. Due to a number of major failures over the past three to four years, the university has advised government officials that adjustments may be required to the three year rolling IMP plan to deal with emergent issues. The university continues to proactively monitor and coordinate with government on the growing operational pressures within our aging infrastructure so that we can maintain access and minimize the risk of shutting down teaching, learning, and research space.

FIGURE 18 RECOGNIZED DEFERRED MAINTENANCE, SUPPORTED AND UNSUPPORTED FACILITIES AS OF DECEMBER 2012, FIVE YEARS COSTS BY EVENT TYPE



Capital Funding Requests

Pre-Design Projects Requiring Funding

Pre-design services work is critical to the long range planning of the institution because it demonstrates how best to maximize utilization of land holdings, buildings available for repurposing, or projects critical to the delivery of the institution's academic program. The projects listed below represent priority planning projects that are planned over the next three to four years. **Due to the critical nature of these projects, some of the planning projects have proceeded with partial funding in advance of needed and formalized government funding (denoted by *).**

Unfunded Priorities

The following are the university's highest priorities in the categories of preservation and new and expansion, for which the institution is requesting consideration of government approval and funding. Due to continual review of budgets and scopes of previous and emerging projects, the priorities and costs within the Capital Plan may not necessarily match the university's list of capital projects outlined in the 2013-14 BLIMS submission. However, the university assumes that projects identified as priorities in this update will, for the most part, be carried forward in its BLIMS submission.

Project costs are adjusted annually with current values rounded to 2013 construction dollars. Escalation values are provided by Alberta Infrastructure at the time of final entry. The projected cash flow requirements for completion of these projects to support both the university's vision and the University of Alberta's CIP are included in Table 2.

TABLE 1 PRE-DESIGN / DESIGN PROJECTS REQUIRING FUNDING (LISTED IN ALPHABETICAL ORDER)

PROJECT	DESCRIPTION	REQUEST ($)
Agricultural, Life & Environmental Sciences (ALES)	Planning for the growth and emerging priorities of the faculty in research and teaching and the feasibility of consolidating faculty departments in a single facility on the South Campus, including the assessment of other lands.	2,500,000
Augustana Science Building and Classroom upgrade	Planning and design schematics to facilitate the renewal and expansion of the current labs servicing the Augustana science program and provide classrooms that meets today's pedagogical needs.	500,000
Biomedical Engineering Building (Pre-Design)	Pre-design to build infrastructure and acquire equipment necessary to facilitate development of Canadian Institute of Bio-Medical Engineering on the U of A North Campus.	1,250,000
Campus Saint-Jean – Science Expansion *	Expansion and infrastructure improvements of the existing facility to meet the needs related to the expansion and improvement of science programs, partnerships with other faculties, and dedicated research space.	1,500,000
Campus Wide Renewal Project Planning	With limited decant space the institution needs to develop a holistic plan that allows the institution to plan how various renovations and renewals can occur with minimal disruption to teaching, learning, and research.	2,500,000
Cameron Library and Information Pavilion - Phase 3 (Curatorial)	With one of the largest collections in the country, the strength of our collections is critical not only to theresearchers at the University of Alberta, but to those across Campus Alberta. Given that the current facility is not suitable for this program and is putting the collection at risk, replacement of this facility is becoming more pressing. Pre-design services would confirm the size of the facility, establish the operational requirements to maintain the integrity of our collections and possible tie into a larger Campus Alberta model.	1,000,000
Gathering Place *	Design for a centre focused on students, faculty, and staff to serve as a community gathering place that embraces and provides an inclusive and supportive learning environment to increase participation by First Nations peoples within the post-secondary sector.	500,000
Institutional Backfill/Repurposing Planning	With the recent turnover of new facilities there is a need to provide a coordinated review of critical institutional areas affected by changing use and occupancies. Primary building inventories would include Clinical Sciences, Medical Sciences Building (ECHA influenced) and Biological Sciences (CCIS influenced). Coordinating efforts would provide a consolidated approach for a "best fit" solution.	900,000
Long Range Development Plan (LRDP) Updates	The University needs to update its LRDP plans for North Campus, Michener, Enterprise Square, and Devonian. Considerable stakeholder engagement and consulting costs are associated with this work given the increased demands by our surrounding communities for detail and time to review. These plans are critical to the university's ability to maintain its ability to develop its lands to deliver on its Mission and Vision.	1,000,000
Physical Education and Recreation (PER) new faculty building and research consolidation	Planning for the growth and emerging priorities of the faculty in research and teaching and the feasibility of consolidating faculty departments in a single facility on the South Campus, including the assessment of other lands.	2,500,000
School of Business	Development of a building for the School of Business in a partnered opportunity with private sector. A building for the School of Business also accommodates backfill requirements of social sciences and supports their growth needs.	1,850,000
School of Music	Development of a building that could house the School of Music program in partnership with a private sector developer. Concept pre-design, business case development to facilitate fund development, building schematics and delivery strategies.	1,500,000
South Campus Master Plan *	Sector planning needs to be completed for the land use and for a phased and sustainable utilities/infrastructure strategy that will accommodate projected long-term growth on this site and the possible relocation of some of the existing operations to off-site research stations.	2,500,000
	TOTAL	**20,000,000**

TABLE 2 HIGHEST PRESERVATION PRIORITIES (LISTED IN ALPHABETICAL ORDER)

PROJECT	DESCRIPTION	REQUEST ($)
Agriculture Forestry Lab Renewals *	Upgrade base building infrastructure to allow for full functional renewal of laboratory spaces. This will permit increased program use in the facility.	3,150,000
Biological Sciences Renewal Program – Phase 1	Phase 1 of renewal program for Biological Sciences. Significant upgrades to mechanical and electrical base building infrastructure to support current and future needs.	59,600,000
Cameron Library Information Pavilions Phase 1 *	Phase 1 redevelopment and upgrade of Cameron Library to create an integrated learning environment with comprehensive user support, group study rooms, and a variety of settings for group discussion and quiet study zones.	10,500,000
Campus Saint-Jean Electrical Distribution *	Upgrade the existing site electrical distribution and main service to effectively manage the aging infrastructure issues and to facilitate future expansion objectives.	3,200,000
Campus Wide Fire Alarm Modernization *	Replace/retrofit/renew fire alarm infrastructure in university buildings.	11,300,000
Campus Wide Fire Suppression Upgrade *	Replace/retrofit/renew fire suppression infrastructure in university buildings.	11,200,000
Chemical and Materials Engineering Building – Renewal (Phase 2)	Renewal and repurposing of the building to provide needed wet lab space for Engineering and address building envelope and operational issues. Phase 2 is the continuation of the project and would fully renew the existing building. Due to the critical need for this space, the Faculty of Engineering is providing bridge financing of $5,000,000 toward Phase 2 of the renewal in advance of government funding.	63,400,000
Chemistry West – Phase 3 of Renewal – Building Envelope Perimeter Heating and Interior Upgrades	Upgrades for remaining floors on the north portion of the facility to the same standard as floors 4 and 5. Remaining floors to be upgraded on north 50% - basement, L1, L2, and L3. Replacement of perimeter heating system with individual controlled room zones.	18,000,000
Chemistry West – Floor Renewal *	As the base building upgrade and renewal work is now completed, the delivery model for the remaining fit outs can be accommodated as smaller phases of work.	4,000,000
Chemistry West & Chemistry East – Electrical Vault / Emergency Power Upgrade *	Electrical services for the facility are at capacity; no emergency power is available for building life safety systems. New electrical room and generator required.	8,600,000
Clinical Sciences Building: Phase 1 Design and Renewal	Building renewal and backfill with the completion of Edmonton Clinic Health Academy is complete. Focus is for renewal and repurposing. The project would be approached in three phases of renewal of the tower. Phase one is for design and building prep for phased renewal.	11,287,500
Clinical Sciences Building: Phase 2 Renewal and Repurposing	Building renewal and backfill with the completion of Edmonton Clinic Health Academy is complete. Focus is for renewal and repurposing. Phase 2 would accommodate 1/3 of the project and allow for decanting of remaining tower.	31,500,000
Convocation Hall Renewal	Renewal of hall stage, front lobby and interiors; all timed to coincide with building's Centenary.	2,500,000
Dentistry/Pharmacy Building - Renewal	Functional renewal of the building once the Edmonton Clinic Health Academy is complete and faculties have relocated. The existing building, constructed in 1921, has a high deferred maintenance liability and must be completely retrofitted before new tenants can be moved in. Selection of consultants for pre-design has taken place. The project will require advance work in the West Lecture Theatre to accommodate decant needs. Costs include modifications required to accommodate LRT entrance relocation and link to South Academic Building.	270,000,000

PROJECT	DESCRIPTION	REQUEST ($)
Earth Science Building – Central System Upgrade *	ESB has had a significant increase in wet lab space. This has driven the need for base building mechanical and electrical upgrades. Initial studies indicate the upper floor can be isolated from the existing base systems and would allow the existing systems to manage the remainder of the building.	19,059,000
Heating Plant – Boiler #7	Purchase and installation of new boiler required to ensure plant reliability. About 50 percent of the plant's boiler capacity is close to 40 years old.	40,000,000
Medical Sciences Building: Phase 1 Renewal *	Select building renewal and repurposing/backfill to occur once the Edmonton Clinic Health Academy is complete.	28,200,000
Medical Sciences Building: Phase 2 Building Upgrade	Full facility renewal program and backfill.	90,500,000
Replacement of Remote Control Monitoring System (RCMS) *	Current remote control monitoring system provides control and monitoring of the major mechanical systems and space conditions in all major buildings, both on and off main campus. Replacement of obsolete system which is critical to day-to-day operation of university buildings.	16,000,000
Roofing Program *	Campus-wide program for upgrading of roofing systems for a three-year period to deal with roofing systems that are in the 12 to 15 year range and will be nearing the end of life expectancy.	8,000,000
Roofing Program *	Campus-wide program for upgrading of roofing systems for a three-year period to deal with roofing systems that are in the 12 to 15 year range and will be nearing the end of life expectancy.	8,000,000
Universiade Pavilion: Building Envelope Upgrade *	Renewal of building envelope to replace failing panels.	16,000,000
University Hall – Building System Upgrades *	Complete replacement of mechanical systems serving University Hall. Will require architectural renewal to accommodate changes. Work has been progressing on a select deferred maintenance project basis to support overall building renewal.	10,000,000
Van Vliet East & West – Upgrade of Mechanical Systems *	Complete renewal of building mechanical systems currently in very poor condition. Given student support of the Physical Activity and Wellness Centre project, there is an opportunity to partner for partial renewal of Van Vliet. Partial renewal deferred maintenance funds for this phase of work would be $4 million.	12,000,000
Various Facilities – Electrical Vault Upgrades *	Campus-wide upgrades of electrical vaults currently in poor condition and close to failure.	18,000,000
	TOTAL	**765,996,500**

TABLE 3 HIGHEST NEW AND EXPANSION PRIORITIES (LISTED IN ALPHABETICAL ORDER)

PROJECT	DESCRIPTION	NEW SPACE (M^2)	REQUEST ($)
Agricultural, Life & Environmental Sciences Bldg – South Campus	Planning for the growth and emerging priorities of the faculty in research and teaching, and the feasibility of consolidating faculty departments in a single facility within South Campus. Assessment of the impact of other lands being utilized by the faculty on its operations and programs.	58,650 - 61,000	366,000,000
Augustana Science Expansion and Renewal and Classroom Building Upgrade	Expansion and renovation of the existing building and infrastructure to meet the needs of the student enrolment and science program requirements. This is coupled with the need to repurpose the old library space to classrooms with the completion of the Library/Forum project.	24,000	30,000,000
Cameron Library & Information Pavilions (CLIP) – Phase 2: Book and Records Depository (BARD)	Renovation and expansion of a recently purchased Federal Archive building to support our need for a Book and Records Depository (BARD) facility. The purchase of this building facilitated the removal of our previous ask of $85 million for a new facility.		20,000,000
CLIP – Phase 3: Curatorial Facility	New space for Museum and Collections Services (MACS) to provide centralized space for collections with proper temperature and humidity controls.	32,437	195,000,000
Campus Saint-Jean Science Building	Expansion and renovation of existing facility to meet the needs related to differential program enrolment throughout the entire campus, the creation of new programs and partnerships with other faculties, and dedicated research space, which will allow opportunities for reuse within the backfill area. The university is targeting an additional $10M in federal support. Total project estimate is $46.4M	5,319	36,400,000
Innovation Centre for Engineering – Fit-out	Shell and core construction of an adjacent North Tower expansion ($60,000,000) has proceeded with funding through the Faculty of Engineering. The fit-out is required to provide teaching and research space to accommodate the program growth within the faculty. This project will also consolidate and co-locate department offices and administrative units.	29,406	42,700,000
Ecological Learning Centre – Devonian Botanic Garden	New facility to allow Devonian Botanic Garden (DBG) to open year-round and support community outreach. Addition of parking lot and sound walls, as well as a new formal gate. The university is targeting $10M of fundraising. Total project estimate is $41M.	3,861	31,000,000
Gathering Place	Centre focused on Aboriginal students, faculty and staff to serve as a community gathering place that embraces and provides an inclusive and supportive learning environment. Project will be aligned with current Education Tower location and be aligned with the building's current infrastructure and program areas. The university has secured a donation of $1M to initiate the project. Project is estimated at $18M	2,100	18,000,000

PROJECT	DESCRIPTION	NEW SPACE (M^2)	REQUEST ($)
Housing – East Campus Village	Development of 500 to 750 additional bed spaces to enhance the university's ability to accommodate projected growth. The request represents a cost of $117,000 per bed with an equity component of 30 per cent.	32,900	35,000,000
Housing – Michener Park	Renewal and replacement of all building systems for row houses, walk-ups, high rise, and supporting infrastructure. Assumes a 30 per cent equity component.	N/A	18,000,000
Pedway – Underground 115 Street & 87 Avenue	Construction of an underground pedway to allow easy and safe access between the Physical Activity and Wellness Centre and the Edmonton Clinic Health Academy. This will finalize the connection of the Health Sciences precinct to the campus north of 87th Avenue.	N/A	9,800,000
Metabolic Research Facility	Replacement and relocation of the outdated and aged metabolic facility on South campus. The current facility is at the end of its life and relocation is part of the long term vision of the South Campus.	TBD	TBD
Science Backfill	Various backfill renewal and repurposing of space as a result of the completion of CCIS (BioSci, Earth Sciences, Chemistry, South Academic Building)		20,500,000
School of Business Building/Social Sciences Departments	Development of a building for the School of Business in a partnered opportunity with private sector. A building for the School of Business would facilitate accommodation of the backfill requirements of the social sciences and support their growth needs. The social sciences are currently experiencing significant shortfall of space.	27,000	172,400,000
School of Music	Development of a building that could house the School of Music Program in partnership with a private sector developer. The budget represents the potential equity required within the partnership arrangement.	12,400	100,000,000
South Campus – Infrastructure for Shared Use Facilities	New infrastructure to support the development of the NE sector of South Campus – deep sewer, water supply, road lighting, and improvements specifically to support the siting of community complexes on campus. Work has proceeded in support of projects and timelines to accommodate federal grant timing.	N/A	7,000,000
South Campus – Utility Infrastructure	Initial Infrastructure to provide first phase of utility and services in support of campus growth and to accommodate infrastructure located on adjacent Government of Alberta land (could also be provided through a P3 model).	N/A	127,150,000
		TOTAL	**1,228,950,000**

TABLE 4 CAPITAL PLAN 10-YEAR FORECAST ($'000)

PROJECT LISTING BY TYPE	PREVIOUS	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	TOTAL
PRESERVATION & REPURPOSING	**3**	**86**	**192**	**237**	**218**	**225**	**190**	**180**	**146**	**76**	**56**	**1,609**
Biological Sciences Renewal Program		3	18	18	18	3						59.6
Chem Materials Phase 2 Renewal		3	20	24	15	1						63.4
Chem West- Phase 3 Renewal- Building Envelope		2	4	5	5	2						18.0
Clinical Sciences Building: Phase 1 design/renewal		3	3	4	1							11.3
Clinical Sciences Building: Phase 2 Renewal			8	8	8	8						31.5
Convocation Hall Renewal		1	2									2.5
Dentistry/Pharmacy Repurpose	3	2	35	55	50	40	40	35	10			270.0
Institutional Backfill		4	8	8	6							26.0
Medical Sciences Building - Phase 2 Building Upgrade		2	9	30	30	20						90.5
Repurposing and Renewal Services Bundle *		10	20	20	20	20	24	25	20	20		179.0
10 Year Deferred Maintenance Plan		57	65	65	65	81	76	70	66	31	31	607.0
Capital Reserve (1.5% capital replacement value)						50	50	50	50	25	25	250.0
NEW		**18**	**153**	**306**	**275**	**230**	**204**	**119**	**90**	**90**	**37**	**1,522.4**
Agricultural, Life and Environmental Sciences South Campus			20	80	80	90	70	26				366.0
Augustana Classroom Building & Renewal		1.0	5	18	6							30.0
Camrose Performing Arts Phase 2				8	9	2						19.0
CLIP Phase 2 (BARD)			6	6	8							20
CLIP Phase 3 (Curatorial)			30	60	60	45						195
ECO Centre - Devonian Botanic Garden		6	18	7								31.0
ECV Housing (500-700 beds)			15	15	5							35.0
Edmonton Clinic Health Academy Expansion						8	70	80	90	90	37	375.0
Gathering Place		1	6	10								17.0

Michener Park Family Housing			4	10	4							18.0
Pedway - Underground 115St & 87 Ave PAW to ECN				7	3							10.0
School of Business Building/Social Sciences		3	10	40	45	40	34					172.4
School of Music			20	25	25	20	10					100.0
South Campus Utilities Infrastructure		4	15	20	30	25	20	13				127.2
South Campus Infrastructure (Shared-Use Facilities)		3	4									6.8
EXPANSION		**11**	**63**	**42**	**3**	**-**	**-**	**-**	**-**	**-**	**-**	**119.1**
Campus Saint-Jean Science Building		4	20	12								36.4
Innovation Centre for Engineering Fit Out (CME)		4	18	18	2.7							42.7
Heating Plant - Boiler #7		3	25	12								40.0
PRE-DESIGN / DESIGN PROJECTS		**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**20.0**
Planning and Pre-Design Services Bundle	-	2	2	2	2	2	2	2	2	2	2	20.0
Total Project Costs	**3**	**117**	**410**	**587**	**498**	**457**	**396**	**301**	**238**	**168**	**95**	**3,270.3**

Funding Dollars are in millions and represent cash flow requirements, not total project cost

* Refer to Table 2 Highest Preservation Projects

LEADERSHIP IN **DIGITAL LEARNING**

IN THE PAST YEAR, NEW OPPORTUNITIES AND PRODUCTS FOR ONLINE LEARNING HAVE ENTERED THE HIGHER EDUCATION LANDSCAPE. UNIVERSITIES ARE NOW EXPLORING HOW THESE TECHNOLOGIES CAN CREATE NEW AVENUES FOR TRADITIONAL, PROFESSIONAL, AND LIFELONG LEARNERS TO ENGAGE WITH THE POST-SECONDARY EDUCATION SECTOR. THROUGH MASSIVE OPEN ONLINE COURSES, OR MOOCS, MILLIONS OF PEOPLE WORLDWIDE ARE CONNECTING WITH WORLD-CLASS RESEARCHERS AND EDUCATORS ONLINE.

These efforts have resulted in novel applications of new and established technology, hinting that the teaching and learning life cycle may be on the verge of a major reinvention on a scale not previously conceived.

The University of Alberta is a Canadian leader in this quickly developing and expanding digital learning arena. With leading research and teaching already in place across multiple disciplines, the university is positioned to help refine and, more importantly, define digital pedagogies, methods of assessment, delivery, and quality control. For example, capitalizing on the U of A's world renowned expertise in paleontology, Dino 101, the U of A's first MOOC offering, is currently under construction and will be piloted to both registered U of A students and the general public over the coming year.

To assist with ease of access, the U of A has made the Google Apps for Education platform available for all faculty, staff, students, and alumni, and has partnered with Alberta-based Cybera to offer the Moodle Learning Management System. The Faculty of Education has been offering and improving "blended" courses, incorporating a mix of face-to-face and online classroom learning, since the 1990s.

Other U of A programs, such as the Alberta Innovates Centre for Machine Learning—one of the top of its kind in the world—provide a foundation of leading-edge computing science that has heightened our ability to locate new business opportunities, scientific innovations, and learning strategies. Because of this existing expertise at the U of A, Udacity, an innovative online education provider, signed an MOU with us focused on analysis and assessment of the digital learning pedagogies they are pioneering in the production of MOOCs.

As we move forward, the U of A aspires to offer a high-quality digital learning environment for our students on campus and to create a strong digital learning presence accessible by learners from across Alberta, Canada, and the world.

SUCCESSES AND OPPORTUNITIES:

- The Faculty of Rehabilitation Medicine uses synchronous, online, and blended technologies to deliver its physical and occupational therapy program across three campuses simultaneously.
- The Faculty of Nursing is expanding the use of digital learning technologies, including the incorporation of eClass and eClass Live in a wide range of courses and programs.
- The Faculty of Medicine & Dentistry has invested heavily in the deployment of Homer, a sophisticated online learning environment used extensively by all of our medical students.
- The Alberta Innovates Centre for Machine Learning has been collaborating with the Faculty of Education to investigate how real-time analysis of online student responses can help students progress through their coursework and improve their understanding.
- More than 20 education researchers are studying the educational efficacy of digital technologies and applications being developed and used to meet the diverse needs of students of various abilities and ages and in various geographic locations and learning situations.

INSTITUTIONAL BUDGET, 2013-14

As are most post-secondary institutions across North America, the University of Alberta is faced with significant financial challenges. Although the university has received critically important financial support from the provincial government through increases to the Campus Alberta Grant, these increases, combined with restrictions on tuition revenue, and the new economic reality of low interest rates, have resulted in general revenues increasing at a slower rate than general operating expenditures.

The current Campus Alberta grant funding model does not fully account for the costs that a research intensive university of U of A's capacity incurs, most notably the investments required to undertake world leading research and provide leadership in graduate education, while sustaining access to an outstanding undergraduate student experience.

The University of Alberta recognizes that Alberta is facing significant financial challenges of its own due to decreasing resource revenues. Faced with these challenges, the province must choose the path that leads to economic diversification, beneficial social outcomes, and ultimately, to prosperity, in its fullest sense, for Alberta. Countries around the world, also faced with similar financial constraints, are choosing to invest in education and research. They recognize the critical role of graduate students in creating a vibrant economic ecosystem and the unique costs associated with supporting internationally competitive research activities. They are choosing to invest in their flagship research universities differently than other institutions in their public systems. Taking a differential approach, they are supporting and leveraging the vital role that world class research institutions play in advancing a region's economy and enhancing its competiveness. Alberta can do the same. The opportunity now exists to realign the current financial model so that the University of Alberta can continue to build on existing areas of excellence, further enhance the province's profile, attract higher levels of funding from external partners and most importantly, allow the provincial government to reap the benefits of a growing and diversified economy and Alberta's enhanced international competitiveness.

If the province chooses not to advance down this path, and does not significantly change the current funding model, the University of Alberta will have to make significant decisions to manage an inevitable shrinking of the academy. The university needs to look at a long-term view of where it needs to be in the context of Campus Alberta. It will not continue with across the board re-allocations which have now begun to impact the viability of the entire organization, nor can the university continue to do what it has been doing since 1908, and still have the capacity to meet government needs. Instead, the university will take major steps to strategically re-align its operations to reflect new financial realities, and invest in its strategic strengths going forward.

University Budget

In 2011, the Public Sector Accounting Board (PSAB) issued a financial reporting framework for government not-for-profit organizations. This framework applies to all institutions under the direction of the government of Alberta, which includes post-secondary institutions. The university has been transitioning to the PSAB standards over the last two years, incorporating the required accounting adjustments and modifying its budget tables to better align with the PSAB standards. This transition will continue over the next several years as the university receives further clarification from the provincial government on the application of the standards. There are two substantive changes in the University's budget for 2013-14. The first is the presentation of the university's budget in a consolidated Generally Accepted Accounting Principles (GAAP) format only versus the presentation of a cash-based operating budget and a consolidated GAAP budget as in previous years. The presentation of a consolidated GAAP budget is also consistent with the Post-Secondary Learning Act which requires the Board to approve a consolidated GAAP budget. For day to day operating purposes, the university will continue to use the necessary management and accounting reports for oversight of the university's operating activities. The second substantive change is the treatment of the University's endowment income and expense which has a direct impact on the University's excess/deficiency. This impact will be discussed in detail below.

Consolidated Budget

Prepared under Canadian Generally Accepted Accounting Principles (GAAP), the University of Alberta's 2013-14 consolidated budget reflects the entire enterprise of unrestricted and restricted funds. This includes general operations, ancillary operations, research activities and capital projects. General and ancillary operations are considered un-restricted within the consolidated budget versus research and capital projects which are considered restricted. The difference between unrestricted and restricted funds, is the degree of university control over the use of the funds. All unrestricted funds fall fully within the authority of the Board while restricted funds form part of the consolidated budget but can only be used for the purposes for which funding has been received, primarily research activity and capital construction.

For 2013-14, the budget reflects a shortfall of revenue over expense of $18 million, or 1.0 percent of the university's budgeted consolidated revenue. This includes a 1.5 percent budget re-allocation, which will be applied across the institution for 2013-14. There are three major factors driving this shortfall. The first is the impact of the amortization expense of capital in the unrestricted operating fund. As the university continues to capitalize its new buildings, the associated expense will continue to increase. Although transfers are made to offset the capital expense, the net impact remains where capital expense is higher than the capital transfers driving some of the consolidated deficiency. The second factor is the treatment of endowment income under the new public sector accounting standards. Previously, the University budgeted endowment income based on unrealized gains or losses. Under the new standards, the University can only budget actual revenue not including unrealized gains. For 2013-14 this has resulted in a reduction in budgeted revenue of approximately $10 million. At the same time, the University uses an agreed to formula for the calculation of the endowment payout which is based on forecast market returns, protection of the capital and administrative costs. The net affect under the new standards is that the budgeted revenue is less than the calculated endowment payout adding to the deficiency. Without this accounting adjustment the deficiency would be $8 million dollars. The other primary factor, and one of greater concern is a structural deficit in the operating fund, driven by general expenditures that are increasing more rapidly than the university's unrestricted revenue.

If the university were to fully balance its 2013-14 consolidated budget, the university would require a budget cut across the institution of approximately 4 per cent in addition to the 1.5 per cent budget re-allocation already factored into the operating fund. The university is acutely aware that this budget deficiency is not sustainable and has initiated the necessary steps to bring the operating fund into balance which will then carry over into the consolidated budget. However, to avoid the profound impact on the teaching and research environment of immediately reducing operating expenditures, the university will take a balanced approach that is financially responsible while reflecting the ongoing commitment to invest in areas of academic excellence and of strategic priority to the university and the province. The university is finalizing a detailed plan that will identify realistic revenue enhancements and a series of structural changes that will enable the university to bring is budget into balance. The role of government in enabling the university to achieve its plan will be critical.

Revenue and expense details are presented in Table 5. Please note that the projected deficiency excludes an estimated $8 million provision for the university's share of the Universities Academic Pension Plan (UAPP)'s unfunded pension liability expense. The provision represents the 2013-14 allocation of the net actuarial losses on the accrued benefit obligation, which are being amortized over the expected average remaining service life of the employee group.

TABLE 5 CONSOLIDATED BUDGET, 2013-14 ($'000)

	2012-13		Budget	Projections		
	Budget	**Forecast**	**2013-14**	**2014-15**	**2015-16**	**2016-17**
Revenue:						
Provincial Government	768,750	775,790	805,671	827,004	841,154	856,872
Federal and Other Government	178,327	182,712	183,215	186,474	191,940	197,914
Tuition and Related Fees	277,728	287,258	305,474	316,672	325,222	332,351
Grants and Donations	89,840	115,647	105,773	107,992	111,953	115,926
Investment Income	32,003	31,717	39,333	43,110	46,888	52,414
Sales of Services and Products	219,488	199,418	181,123	184,486	187,950	190,353
Amortization of Deferred Capital Contributions	117,796	114,669	119,542	123,427	126,452	128,341
Total Revenue	**1,683,932**	**1,707,210**	**1,740,131**	**1,789,166**	**1,831,560**	**1,874,171**
Expense:						
Salaries	838,528	858,720	884,485	908,560	936,364	965,355
Employee Benefits	169,096	168,311	180,602	194,412	207,205	219,770
Materials, Supplies and Services	320,885	330,225	303,202	311,460	323,655	334,544
Maintenance	70,881	74,074	72,102	72,955	70,961	72,246
Utilities	51,214	42,977	45,679	48,775	51,536	52,103
Scholarships and Bursaries	92,772	88,545	96,569	102,474	109,021	116,089
Amortization of Capital Assets	174,085	168,397	175,525	180,317	184,322	186,894
Total Expense	**1,717,461**	**1,731,250**	**1,758,164**	**1,818,954**	**1,883,063**	**1,947,001**
Excess of Revenue Over Expense	**(33,529)**	**(24,040)**	**(18,033)**	**(29,788)**	**(51,503)**	**(72,830)**
Investment in Capital Assets	(7,412)	(34,699)	(19,728)	(1,249)	10,691	(4,886)
Transfer from Endowment	17,600	17,600	10,000	10,000	10,000	10,000
Increase (decrease) for the Year	(23,342)	(41,139)	(27,761)	(21,036)	(30,812)	(67,716)
Unrestricted Net Assets, Beginning of Year	(50,691)	(15,612)	(64,751)	(92,512)	(113,549)	(144,361)
Universities Academic Pension Plan	(1,352)	(8,000)	-	-	-	-
Unrestricted Net Assets, End of Year	**(75,384)**	**(64,751)**	**(92,512)**	**(113,549)**	**(144,361)**	**(212,076)**

(1) 2012-2013 budgeted investment income restated to PSAB standards for comparability.

*Due to the timing of budget development relative to implementation of the new framework, the budget may be revised, or restated, to ensure alignment with the framework.

CONSOLIDATED REVENUE

Budgeted revenue for 2013-14 is $1,740 million. As illustrated in Figure 19, 46 percent or $806 million comes from the province of Alberta, mostly through the Campus Alberta grant, sponsored research funding and capital funding. Of the $806 million, $614 million represents the Campus Alberta Grant, the primary source of unrestricted funding for the university's day to day operating activity. For 2013-14, the university has assumed a 2 percent increase to the base Campus Alberta Grant, founded on a commitment by the provincial government to provide predictable funding to post-secondary institutions with three years of 2 percent annual grant increases starting with the 2012-13 budget year. A 1 percent grant increase represents funding of approximately $6 million. Therefore, without the planned 2 percent grant increase for 2013-14, the university's consolidated budget deficiency will increase by $12 million to an estimated deficiency of $30 million.

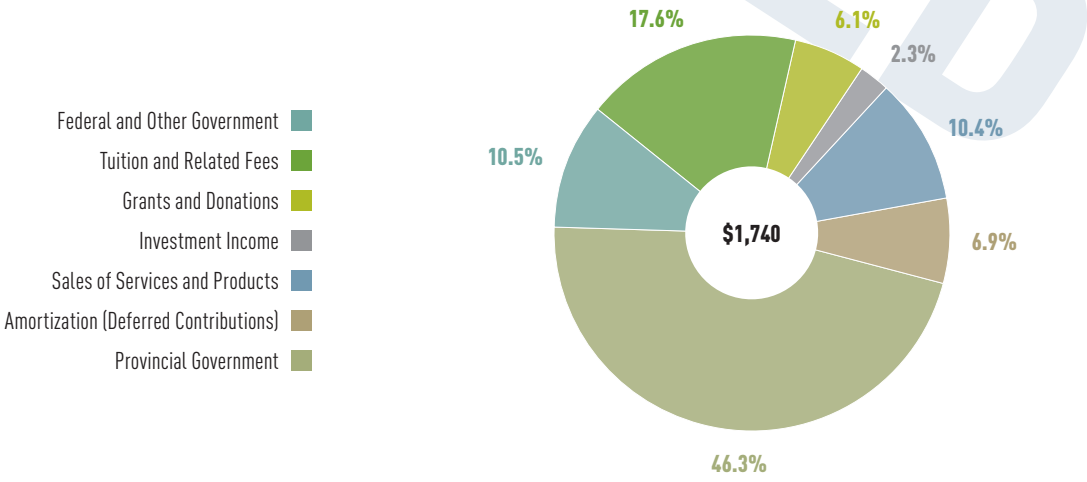
The federal and other government revenue of $183 million largely reflects the funding received by the university in support of its research mandate. The revenue source is impacted by the federal government's level of investment in Tri-Council funding, the high level of competition for research funding and the University's overall grant application success rates. The quality of the University's faculty and the support provided to faculty in preparing grant applications are key factors in securing additional research funding.

Tuition and related fees are budgeted at $305 million and at 17 per cent is the second largest source of consolidated revenue. This includes all instructional fees, market modifiers, and non-instructional fees. The fee revenue is largely unrestricted, resides in the operating fund and is used for the day to day general operations of the university. Included in tuition and fees is the Board approved increase to general tuition fees, program fee differentials, and market modifiers of 2.15 per cent and an adjustment of 1.92 per cent to all other mandatory-non-instructional fees including the CoSSS fee. The CoSSS fee is budgeted to generate $11.5 million of revenue in 2013-14.

The third largest source of revenue comes from sales of services and products representing 10 percent of total consolidated revenue, or $181 million. This revenue is primarily derived from ancillary operations such as residence services, the bookstore, parking, and food services. For 2013-14, these revenues were adjusted based on a Board approved weighted increase to residence fees of 2.36% as outlined in Table 7 on page 164 and adjustments to parking rates. Sales of services and products revenues are also derived from operating activities across all faculties and units. Examples include sales associated with physical education and recreation activities (passes, camps, etc.), medical clinical assessments, and rental of equipment.

For the 2013-14 fiscal year, investment income (including both interest and endowment income) is budgeted at $39 million. Two years ago, the university was projecting interest income to be approximately $30 million in 2013-14 based upon economic and interest rate forecasts at the time. In response to continued global economic uncertainty, the Euro region moving back into recession, slowing economic growth in Asia, and continuing uncertainty in the economic recovery in the United States, revised projections have interest rates continuing at historically low levels and not recovering as previously forecast. Consequently, interest income is budgeted at only $13 million for 2013-14 increasing marginally over the next three years. Interest income although small as a percentage of total revenue has been an important source of unrestricted revenue for the operating fund. Given that interest rates are forecast to remain at historically low levels for the immediate to mid-term, the university must seek new sources of revenue. For 2013-14 endowment income has been reduced by $10 million from previous forecasts pursuant to the public sector accounting standards whereby only actual endowment returns are budgeted versus budgeting based on unrealized gains.

FIGURE 19 CONSOLIDATED REVENUE BUDGET, 2013-14 ($'000)

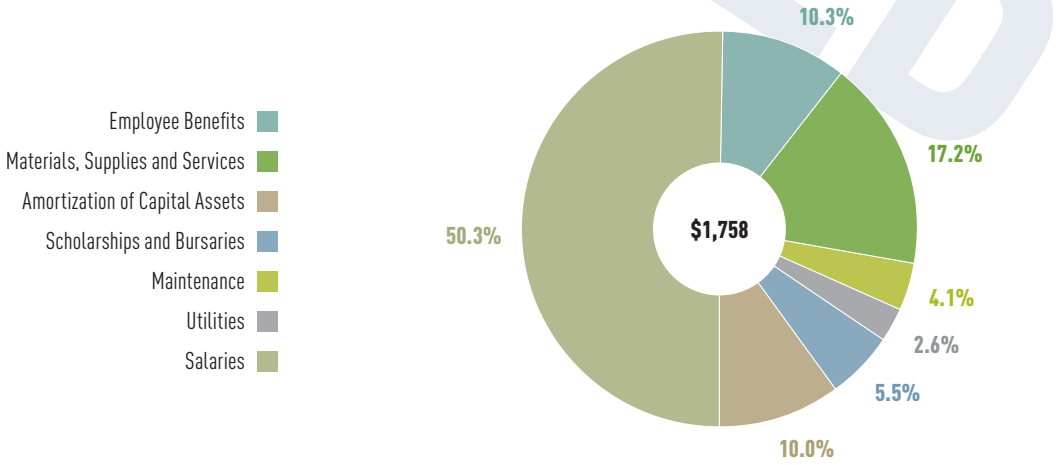


CONSOLIDATED EXPENSE

For 2013-14, consolidated expense is budgeted at $1,758 million. As Figure 20 illustrates, investments in salaries and benefits to maintain teaching, research and other critical activities account for 60 per cent of total expense. The budgeted increase in salaries and benefits is driven by an across the board (ATB) increase of 1.65 per cent negotiated with the two staff associations, the application of merit which accounts for approximately a 2.1 per cent increase and increases in both statutory and non-statutory benefit expense. Both the university and the two staff associations demonstrated tremendous leadership in negotiating the current salary agreements. The agreements reflect a balance between the University offering competitive salaries in an internationally competitive market place while reflecting the financial pressures faced by the University.

Of significant concern to the university is the rate of increase to the university's benefit program costs including its pension plan contribution rates. For example, dental benefit plan costs are budgeted to increase 12.6 per cent for 2013-14 from forecast 2012-13 year-end. It is important to note that with the exception of pension plan contributions, non-statutory benefit plan contributions are all 100 per cent paid by the employer. The largest percentage increase budgeted for benefits in 2013-14 is support staff pension plan contributions. Following an actuarial review of the Public Service Pension Plan and in response to market conditions, contribution rates by the employer will increase by 15 per cent. Employer academic pension plan contributions are budgeted to increase by 5 per cent in 2013-14. This is preceded by an estimated increase in academic pension plan contributions of 10.4 per cent in 2012-13.

FIGURE 20 CONSOLIDATED EXPENSE BUDGET, 2013-14 ($'000)



The next largest expense is for materials, supplies and services. Budgeted at $303 million, these expenses provide essential support across the campuses from information systems/technology, research lab expenditures, library resources, maintenance, to day-to-day operations such as insurance premiums, communications, and classroom support.

A further significant expense in the consolidated budget is $175 million for the amortization of capital assets. Under Canadian GAAP, amortization recognizes the useful life of an asset, through an annual expense which is calculated based on the estimated useful life of the asset. These assets include such things as buildings, scientific and computing equipment, software, and learning resources.

For 2013-14, scholarships and bursaries expense is budgeted at $96.5 million. The investment in scholarships and bursaries for our students is vital if we are to attract the best and the brightest students from across Alberta and around the world and assist those students who may require financial assistance in attending a world leading university.

All remaining expense items have been budgeted based on a detailed fiscal estimate process that includes inputs from key units across the University, a review of past expenditures, changes in University operations and the incorporation of contractual obligations where applicable.

Budget Assumptions and Sensitivities

The university prepares its budgets using a comprehensive integrated planning and budget process, involving key stakeholders from across the institution. Key budget assumptions and sensitivities are cornerstones of the university's multi-year budgeting process. The goal is to achieve improved accuracy in forecasting elements of the budget and provide common assumptions for budget planners across the university.

The university has two primary sources of unrestricted operating fund revenue; the Campus Alberta Grant and tuition plus interest income and miscellaneous revenues. These two primary sources make up approximately 90 per cent of the university's operating revenue. Both of these revenue streams are largely controlled by government and are currently increasing at approximately two per cent per year.

In terms of operating expenditures, salaries and benefits make up approximately 80 per cent. These expenditures are increasing on average at four per cent per year. The balance of the university's operating expenditures, driven by contractual obligations and inflationary pressures, are increasing between two and four per cent per year.

With the assumption of an increase in the Campus Alberta Grant of two per cent and a tuition increase of 2.15 per cent with primary expenditures increasing at approximately four per cent, the gap between operating revenue and expenditures is creating a structural deficit in the operating budget of approximately $12 million in 2013-14 (not including amortization expense). This gap, which will compound each year, is unsustainable. In previous years, the university leveraged a combination of budget re-allocations and investment income and other revenue sources to offset the difference between its operating revenues and expenditures. Across the board budget re-allocations is neither sustainable nor strategic. Furthermore, short to mid-term interest income forecasts show no significant increase in interest rates and therefore little change in interest income revenue. For 2013-14, the university has budgeted short-term interest rates at 1.4 per cent, with rates increasing to 2.2 per cent by 2016-17. Tuition increases must adhere to the forecast of the Alberta CPI as stipulated in the tuition fee regulation. Tuition increases over the next three years are therefore forecast at 2.2 per cent in 2014-15, reducing to 2 per cent in 2016-17.

Going forward, the government, to achieve its goals, must assess how it will support Alberta's flagship university and leverage its mandate as an internationally recognized research intensive institution. The differential costs of a research intensive university must be funded while providing the tools and flexibility to the university to generate new sources of revenue and re-align its programs in response to evolving needs.

Key highlights of the University's revenue assumptions include:

- a two per cent increase to the base Campus Alberta Grant
- modest decline in federal research funding from 2012-13
- 2.15 per cent increase to credit tuition fees and 1.92 per cent increase to mandatory non-instructional fees
- continued phased approach to full implementation of market modifier tuition
- continuation of the non-permanent Common Student Space, Sustainability and Services (CoSSS) fee
- marginal growth in investment income and modest growth in endowment income due to market conditions
- continuation of the IMP grant at current levels of $22 million per year

On the expenditure side, the university's staff agreements extend to 2014-2015 with a negotiated across-the-board increase of 1.65 per cent in each of 2013-2014 and 2014-2015. Both statutory and non-statutory benefits are increasing with non-statutory benefits increasing between 3.5 and 15 per cent. All other expenditures are increasing at the range of 2 to 4 per cent.

Key highlights of the University's expenditure assumptions include:

- growth in salaries and benefits driven by salary settlements (1.65 per cent ATB and 2.1 per cent merit)
- benefit cost increases ranging from 3.5 to 15 per cent
- a 1.5 per cent re-allocation in the operating budget
- relatively stable utility expenditures
- modest growth in scholarships
- all other expenditures stable or marginally reduced

- The budget challenges that lie before the university are substantive, but so are the opportunities. With a balanced approach, support from the provincial government, a clearly defined plan and realistic expectations, the university will generate the necessary new revenues, will implement the required structural changes, and will bring the university's consolidated budget into balance going forward.

BUDGET SENSITIVITIES

Revenue Approximate Value
- one per cent on Campus Alberta grant: $5.9 million
- 0.25 per cent on short-term interest rate: $1.5 million
- one per cent increase on credit tuition: $2.2 million

Expense Approximate Value
- one per cent increase in salary settlements: $4.5 million
- one percent on benefits approximately $1.3 million
- $1/GJ increase on natural gas: $2.6 million (ancillary budget)
- one per cent operating budget reduction: $6.1 million

Institutional Budget Risks

The primary budget risk facing the university is the growing gap between the university's operating revenues and expenditures, creating a structural deficit in the operating fund. This must be addressed through a combination of new revenues and structural changes that align the university's operating expenditures with its revenues.

Specific factors impacting the university's budget risks include:

- **Campus Alberta Grant annual increase.** Annual increases of 2 per cent does not match the corresponding annual increase in salary, benefits and general inflationary pressures, consequently annual budget re-allocations will be required. A minimum 4 per cent annual increase to the grant is needed. Continued budget re-allocations are eroding the University's capacity to fulfill its mandate and vision. The highest risk to the 2013-14 budget is the government's commitment to a 2 per cent grant increase. If the increase is not provided, the University will require a minimum 2 per cent budget cut.
- **Legislative constraints on tuition.** U of A graduate tuition remains well below market rates. Legislative constraints on annual tuition increases prevent the university from responding to market conditions, aligning tuition levels with its key competitors, and recognizing the higher costs of program delivery in specific faculties.
- **Interest rates.** Interest rates in the immediate to mid-term are forecast to remain at historically low levels due to economic conditions.
- **Alternative revenue.** The capacity of the university to generate alternative sources of revenue to offset insufficient grant increases and historically low investment income returns.
- **Pension plan contribution rates:** The continuing increase in pension plan contributions represents a significant risk to the university. Without structural reforms to the pension plans, the level of pension plan contributions as a percentage of total benefit costs will be unsustainable.

Capital and Ancillary Budget

CAPITAL

The university's capital budget reflects $127.8 million in capital projects and a further $27.3 million in capital program spending for a total capital budget of $155.1 million. This includes projects underway or proceeding and annual capital programs in support of health and safety, energy management, building systems, renovations and site replacement and/or upgrading.

Capital projects ultimately support the university's academic plan and are in alignment with the goals and objectives within the Comprehensive Institutional Plan. They also align with provincial priorities in addressing space and program needs, and focus on renewal and preservation of facilities. Further, these projects have been approved through the university's capital expenditure authorization request policy and, as required, approved by the Board of Governors.

Table 6 lists the capital projects for 2013-14. The three major capital projects at various stages of construction for the fiscal year include the new residences in east campus village, ongoing construction of the Innovation Centre for Engineering and initiation of the Physical Activity and Wellness Centre. These three projects account for of $70.2 million of the $127.8 million in capital projects. The capital budget also includes just over $27 million in capital program spending. This includes $22 million in funding from the provincial infrastructure maintenance program (IMP) which is assumed to continue in the upcoming year.

In addition to approved projects, there are a number of priority capital projects around pre-design and renewal that require funding. Detailed information on the university's capital plan can be found in pages 113 to 147.

TABLE 6 CAPITAL PROJECTS FOR 2013-14 ($'000)

		Forecast to Complete			
	Prior Years Actuals	2012-13 Preliminary	2013-14	Future Years	Total Estimated Final Cost
Capital Projects (underway or proceeding):					
Agricultural Research Infrastructure - St Albert / Kinsella / Mattheis	4,709	6,080	1,400	-	12,189
Balmoral Centre - ERC / Cyclotron	8,892	20,108	-	-	29,000
Dentistry Pharmacy Redevelopment	104	1,896	3,700	-	5,700
Devonian Botanic Garden - Infrastructure Upgrades	-	-	5,000	8,000	13,000
East Campus Village - 89th Ave Grad Residences	20	5,980	21,026	-	27,026
Edmonton Clinic Health Academy	365,472	7,255	10,000	6,284	389,011
Edmonton Clinic Health Academy (South - Dental Operatories)	2,491	103	-	-	2,594
Federal Building (BARD replacement)	-	6,500	7,500	-	14,000
HM Tory - Phase 2 Building Systems Upgrade	5,355	885	1,100	1,100	8,441
HRIF Project (Li Ka Shing / Katz Group) Base Bldgs	234,500	472	-	-	234,972
HRIF Project (Li Ka Shing / Katz Group) Fit Outs	104,134	4,138	-	-	108,271
HRIF Project (CTRIC cGMP Fit Out - Li Ka Shing Level 7)	2,408	8,890	2,500	2,000	15,797
Innovation Centre for Engineering (ICE)	33,543	32,354	23,863	-	89,760
Pharmacy Fit Up	29,470	6,220	10,000	3,777	49,467
Physical Activity & Wellness Centre (PAWC)	1,660	6,740	25,400	23,200	57,000
Scientific Support Facilities	44,948	652	5,000	2,826	53,426
South Campus Infrastructure - Phase I	4,536	817	-	-	5,353
South Campus - Intersection 63 Ave / 122 Street	12	150	1,738	-	1,900
Other Capital Projects	668,836	15,999	9,585	2,203	696,622
Total	**1,511,089**	**125,240**	**127,812**	**49,389**	**1,813,530**
Annual Capital Programs:					
Infrastructure Maintenance Program			22,000		
Energy Management			5,370		
Total			**27,370**		
TOTAL			**155,182**		

* The Capital Budget was finalized on October 30, 2012 and contains values which may not align with or may not include projects identified in the CIP.

ANCILLARY SERVICES

The University operates six ancillary operations including the Bookstore, Enterprise Square, Housing, Parking, the University Health Centre and Utilities. These ancillary operations provide services to the campus community in support of the University's mission and vision. In the case of Utilities, in addition to providing services to North Campus they provide services to a number of other organizations.

Bookstore

The Bookstore is faced with a number of challenges that will need to be addressed in the coming years including the replacement of its point of sale system, physical upgrades to its main store location, efficiencies in its current multi-store locations and increasing competition from on-line and other sources. With new leadership in place the Bookstore will be developing strategies and detailed plans in response to these challenges.

Enterprise Square

Enterprise Square is the University's campus located in downtown Edmonton. It is occupied by combination of University units and commercial operations. It is currently fully occupied with the exception of approximately 4,932.0 sq. ft. on the main floor and 16,000.0 sq. ft. on the third floor. Real Estate and Property Management Services is responsible for the leasing of space within Enterprise Square. The maintenance of high occupancy levels is important to generate the necessary revenues to offset the buildings operating costs and mortgage commitment. The Ancillary is experiencing positive cash flows that is enabling it to maintain the necessary operating and capital reserves.

Housing and Conference Services (including Augustana)

The student residences and commercial properties (HUB Mall, Newton Place) are all at or close to maximum capacity. The Conference Centre continues to be a popular venue for meetings and conferences. Summer occupancy (Lister Centre) numbers have stabilized in 2012-13 however challenges remain given the current economic climate and competition with hotels in Edmonton.
A number of initiatives were undertaken in 2012-13 including:

- Commenced construction of new student residences (89th Avenue Student Residence) that will add 244 bed spaces (double and quad rooms), expected to be occupied beginning September 2013.
- Completed a comprehensive analysis and unit review of the Residence Services.
- Completed major window replacement in MacKenzie residence tower as part of the continuing deferred maintenance program.
- Implemented initial changes to transition the Lister residence community to a first-year and transition student-only community in September 2013.
- With Aramark additional expansion of food services facilities on North Campus.

Major risks to Housing and Conference Services include:

- Residence rent rates are in many cases at or near market, reducing flexibility with respect to additional revenue generation.
- Deferred maintenance risk at Michener Park residence.
- Continued deferred maintenance challenges in the older ECV residences, the general level of deferred maintenance in other residences, and the need for modernization and functional renewal.
- Inflation of some operating costs (labor, maintenance, construction) will exceed CPI (this year 1.92per cent), as per institutional Budget Planning Document forecasts.
- Continued recession-like climate: impact on conference activity.

On November 27, 2012 the Board approved a weighted increase of 2.36 per cent to its residence rates. All rate increases will be effective May 1, 2013. Residence rent increases are required to offset increases in salary and benefit costs for the residence operation, general inflationary pressures, and to address deferred maintenance issues, several of which have direct health and safety implications, or projects which offer the opportunity to reduce energy consumption. The following table provides examples of market adjustments for 2013-14 by residence.

Rental Rates by Residence, 2013-14

Residence/Unit	Effective May 1, 2012
Augustana (double room 8 month room & board)	$780
East Campus Village Apartments (2 Bedroom)	$636
East Campus Village Houses	$424 to $1041
Résidence Saint-Jean (8 month)	$600
HUB (2 Bedroom)	$583
Lister (Double, 8 months)	$358
Michener (2 Bedroom Row House)	$823 to $893
Newton (1 Bedroom)	$993 to $1,070
Schaffer (Single)	$672

The University of Alberta currently has 4,694 residence bed spaces for approximately 12.5 per cent of the total student population including Augustana Faculty (11.3 per cent excluding Augustana).

Parking Services

On November 27, 2012 the Board received for information parking rate increases of 1.92 per cent or CPI for monthly and annual rates. Visitor rates will remain unchanged for 2013-14. All rate increases will be effective April 1, 2013. After initial declines in demand due to the successes of the Travel Demand Management (TDM) program, year over year parking demand has stabilized with the exception of non-university personnel (contractors). Parking Services capital reserves will continue to grow in anticipation of South Campus development and other capital and maintenance priorities.

Major risks to Parking Services include:

- Overall parking demand will decrease over time due to alternate transportation options.
- Parking rates are in many cases at or near market, reducing flexibility with respect to additional revenue generation.

University Health Centre

The University Health Centre (UHC) provides an extensive range of health services to the University student community. A major focus of the UHC in the last few years has been to expand its student mental health services. The goal of the UHC is to significantly enhance these services, developing a more distributed, proactive and preventative model than the current model that is in place. Led by the University of Alberta, the provincial government announced $3 million in funding over three years in January, 2013 to pilot a new health delivery model with a primary focus on student mental health services.

Utilities

The utilities ancillary provides services not only to University operations on the North Campus but to Alberta Health Services, the Cross Cancer Institute, the Jubilee Auditorium and Canadian Blood Services. There are three major factors that impact the utility budget: weather, natural gas prices and pool (electric) prices. Utilities continually review and revise rate models in light of its experience and expectations for loads, prices and market activities and where appropriate enter into long-term pricing contracts.

Total revenue budgets along with operating and capital reserves for each ancillary is identified in Table 7.

TABLE 7 ANCILLARY BUDGET, 2013-14 ($'000)

	2012-13		Budget	Projections		
	Budget	**Forecast**	**2013-14**	**2014-15**	**2015-16**	**2016-17**
Augustana: Residence, Conferencing, and Food						
Revenue - Internal	49	49	50	52	53	54
Revenue - External	2,890	2,891	2,956	3,030	3,110	3,173
Total Revenue	**2,939**	**2,940**	**3,006**	**3,082**	**3,163**	**3,227**
Reserve Balances:						
Operating Closing Balance	1,000	1,000	1,000	1,000	1,000	1,000
Capital/Maintenance Closing Balance	2,767	3,048	3,063	3,144	3,225	3,310
Bookstore						
Revenue - Internal	3,700	3,262	3,162	3,320	3,486	3,661
Revenue - External	24,481	22,406	22,855	23,312	23,778	24,253
Total Revenue	**28,181**	**25,669**	**26,017**	**26,632**	**27,264**	**27,914**
Reserve Balances:						
Operating Closing Balance	(196)	(148)	-	-	-	-
Capital/Maintenance Closing Balance	(1,880)	(8,174)	(8,471)	(8,554)	(8,581)	(8,544)
Ancillary Services*						
Revenue - Internal	3,893	7,388	7,662	8,013	8,185	8,355
Revenue - External	51,570	51,558	53,796	56,081	57,517	58,799
Total Revenue	**55,463**	**58,946**	**61,458**	**64,094**	**65,702**	**67,154**
Reserve Balances:						
Operating Closing Balance	(2,030)	64	127	637	1,233	1,869
Capital/Maintenance Closing Balance	15,174	18,740	20,676	24,962	28,649	17,798

	2011-12		Budget	Projections		
	Budget	**Forecast**	**2012-13**	**2013-14**	**2014-15**	**2015-16**
University Health Services						
Revenue	**5,677**	**5,936**	**6,148**	**6,236**	**6,363**	**6,580**
Reserve Balances:						
Operating Closing Balance	353	708	456	152	(42)	-
Capital/Maintenance Closing Balance	200	200	200	200	200	79
Utilities						
Revenue - Internal	72,949	64,904	74,572	76,838	80,833	81,836
Revenue - External	21,507	19,434	22,216	22,753	24,037	24,116
Total Revenue	**94,456**	**84,338**	**96,788**	**99,592**	**104,870**	**105,952**
Reserve Balances:						
Operating Closing Balance	9,566	3,351	3,351	3,351	3,351	3,351
Capital/Maintenance Closing Balance	19,147	23,504	23,504	23,504	23,504	23,504
TOTAL REVENUE	**186,716**	**177,828**	**193,417**	**199,635**	**207,362**	**210,827**
Reserve Balances:						
Operating Closing Balance	8,693	4,974	4,934	5,140	5,542	6,220
Capital/Maintenance Closing Balance	35,408	37,317	38,972	43,255	46,997	36,147

*Ancillary Services includes: Enterprise Square, Commercial Property, Parking Services and Housing & Food Services

RESOURCE AND RISK IMPLICATIONS

Even as it navigates the current financial storm, the province of Alberta must make strategic, long-term, visionary decisions on how best to support and leverage its flagship university to achieve provincial aspirations. The University of Alberta shares the province's bold vision for a future that is powered by innovation and ingenuity; indeed, the university will be critical to the province's success, and the university looks forward to working with government to advance provincial priorities.

Driven by *Dare to Discover,* the university has identified a series of resource gaps that are linked to its responsibility in providing comprehensive and diverse educational choices that prepare Albertans for citizenship in the world and address Alberta's need for undergraduate and graduate alumni who will contribute to the economic, social, and cultural prosperity of tomorrow. These gaps have been identified in a context wherein the university continues to implement strategies to maximize the use of its existing resources. Addressing these resource gaps will facilitate connection to international communities, enable the U of A to undertake world-leading research, and create innovative research agreements that will link researchers, graduate and undergraduate students, international foundations, industry, and government. These resource needs assume the government's commitment to provide two per cent increases to the Campus Alberta grant in both 2013-14 and 2014-15. Resource gaps include investment in the University of Alberta as the province's flagship university, enhancing internationalization, supporting digital learning and information technology, investing in capital infrastructure, and restoring payments from the Access to the Future Fund.

Sustaining Alberta's Flagship University

The University of Alberta must not lose the momentum gained during previous years of growth in government funding, which enabled strategic investments in students, staff, professors, programs, and infrastructure. The great performance and outcomes achieved by the university has played, and will continue to play, a critical role in the province achieving its goals. In addition to sustaining the current government commitment of a two per cent grant increase, the U of A requires an additional two per cent increase in support of its role as Alberta's leading research-intensive university. Like all CARI institutions, the University of Alberta has specific costs associated with its research mandate focused on graduate students, faculty who support those graduate students, and core research facilities required to deliver the research. Furthermore, in response to the growing demand by highly qualified high school and college transfer students for BSc degrees in the areas of science, technology, engineering, and mathematics (the STEM disciplines), the university has identified a resource gap of $20 million to alleviate strained and now insufficient instructor and technical/lab staff support.

The university must continue to grow the numbers of high-calibre graduate students and post-doctoral fellows. Graduate students, the engines of innovation, are vital to the province's economic diversification and competitiveness, and require more resources than undergraduate students. They require different types of space, competitive funding, and most importantly, more individualized time with internationally recognized faculty who can mentor and support them in their learning and research endeavours. The fact is that graduate students cost more than undergraduate students.

In addition to the need for more graduate students and faculty to supervise these students, the university operates highly specialized core research facilities essential in supporting internationally competitive research. Examples of these facilities include animal lab facilities, level two and level three bio-containment labs, specialty fabrication labs for machining, plastics, glass blowing and electrical, biochemical analytics labs, biotron and aquatic facilities, and greenhouses. These facilities not only support research at the University of Alberta, but enable collaborative sponsored research with public and private sector partners. These special facilities require expensive leading-edge equipment and supplies and must be operated by highly skilled and trained specialists. As one example, the university spends almost $9 million per year of its operating budget on animal health facilities in support of sector-driven research, technology innovation, and clinical trials in the areas of the health sciences, agriculture, and biosciences. The innovation system looks to its research-intensive universities for such research capacity, often established initially with the aid of competitive federal infrastructure programs. However, the ongoing direct cost of operating and sustaining such broad research capacity is not adequately funded.

The unique needs of research-intensive universities including the growth in graduate student numbers, the required number of professors, and support for core research facilities adds additional costs to the university. These costs could be offset by the differentiated funding to the University of Alberta in the form of a further two per cent increase to the Campus Alberta grant.

- **The University of Alberta seeks government's commitment to the two per cent increase to the Campus Alberta grant and an additional two per cent commitment for a total of a four per cent increase to the Campus Alberta grant to address the direct and indirect costs of sustaining and growing its research capacity through additional investments in faculty, graduate students, post-doctoral fellows, and core research facilities**
- **The University has identified a resource gap of $20 million in response to the growing demand for access to STEM programs by highly qualified students.**

INVESTING IN INTERNATIONALIZATION

The U of A's internationalization strategy is multi-faceted and permeates the entire academic enterprise. It includes international student recruitment at the undergraduate and graduate levels; opportunities for Alberta students to study abroad; increased mobility of international students coming into the province through joint degree programs; and establishment of research consortia. These initiatives leverage the institution's and province's teaching, research, and innovation resources with those of other jurisdictions, and establish the University of Alberta as a desired partner in China, Germany, India, and Brazil. The university aspires to create a recognizable international reputation, which can deliver to Alberta the kind of tangible and intangible benefits that signature public institutions such as UC Berkeley and UT Austin deliver to their respective jurisdictions.

The establishment of international consortia brings enormous return on investment. The track record of the university in this regard shows indisputable results. The government need only look at the results of the Helmholtz-Alberta Initiative and the agreements signed between the U of A and several of China's top-tier universities. The benefits to the province of such international agreements are substantial. With a strategic focus on five countries—Germany, China, India, Brazil, and regions of the United States—the university will continue to increase these highly beneficial relationships.

Such partnerships require matching dollars in order to leverage the investment from other jurisdictions. It is vital that when the university enters into discussions with potential partners, it has the confidence that matching dollars will be available.

- **The University of Alberta recommends greater flexibility in the structure of Alberta Innovates and within the government that actively supports the funding of international consortia while establishing dedicated funding for matching purposes.**

INVESTING IN DIGITAL STRATEGIES AND INFORMATION TECHNOLOGY

To stay relevant in a rapidly changing world, a research-intensive university must sustain and continually renew and rethink its learning, teaching, and research information technology infrastructure. This is vital if the university is to attract and retain the best and brightest students, professors, and staff; engage external industry and international partners; and grow the research enterprise. At the same time, the university must sustain its existing information technology infrastructure while continuously improving the effectiveness and efficiency in the delivery of that technology.

Funding of the university's information technology infrastructure can be grouped into four core areas. In response to a rapidly changing world, investment in innovative digital learning initiatives that expand institutional reach and enhance teaching effectiveness is essential. In addition, continual investment is required in network sustainability and deferred maintenance, security, a graduation student registration system, and smart classroom evergreening.

Digital learning initiatives: In 2012, the University of Alberta began to engage more aggressively in developing and expanding the use of advanced learning technologies and their related pedagogies in undergraduate and graduate education. The university's digital strategy objective is to both develop and offer the highest-quality digital learning technologies and pedagogies to enhance the on-campus, in-class experience and online learning environments. The University of Alberta is well positioned to research and develop blended and online learning. In addition to expert researchers in pedagogy and strength in computer technology research, the university has a long history of working with such approaches.

Through strategic partnerships with other leading universities and innovative companies, the University of Alberta has the potential to make major contributions to the evolving state of teaching and learning at the post-secondary level. With the necessary investment of $2 million, the university will advance three digital learning pilot projects: 1) Udacity MOOC(s) in the Faculty of Science; 2) the hybrid learning environment in the Faculty of Education; and 3) related research projects in the Alberta Innovates Centre for Machine Learning. The University of Alberta has the opportunity to be a participant in the adoption and research of digital learning technologies, and to better position itself for the changes that are coming. These changes, if managed well, have the potential to benefit students and support the university's mission to create and sustain a vibrant and supportive learning environment while benefiting all of Campus Alberta and Albertans.

Network sustainability and deferred maintenance: The university's network services can be divided into four service areas including campus area network, university wireless, centrally managed local area networks, and unit-managed local area networks. Over the last five years, the university has invested operating dollars to establish evergreening funds for its centrally supported services or developed specific funding structures that allows for evergreening of the systems. The largest challenge the university faces is the degree of decentralization of its LAN structures. This operational model, as confirmed by the auditor general, presents the university with a high level of risk regarding data and systems security. Over the years, decentralized LAN units have not adequately evergreened their cabling, switching, routing, and firewall systems. The magnitude of this issue is now being identified as the university endeavours to streamline its operations

and introduce efficiencies through the centralization of core IT services. The university's information technology team has identified a five-year consolidation plan, which is estimated to cost $38 million in one-time funding and $2.4 million in base funding. This consolidation strategy, implemented over five years, will greatly reduce IT data security and systems risks, enhance efficiencies, reduce overall operating costs, and ensure evergreening of the systems going forward.

Security: After people, information is the most critical and valuable asset in the university's teaching, research, and community priorities. Therefore, it is crucial to safeguard the university's information and information technology resources. Safeguards deployed by the university include people, technology, process, and best-practice-based controls. As advances in information and communications technology continue to transform the digital learning environment, the deployment of appropriate information safeguards must keep pace. The university's response is to invest in security training of IT staff. Because this training is so expensive, the university with two partner institutions led a Canada-wide initiative to co-ordinate online security awareness training. The result has been a reduction in training costs by 80 per cent per seat. The university is also investing in Windows-based security training for 50 of its IT staff. Finally the university is investing in the auditing of the university's most mission-critical IT systems to assess system security. These security initiatives, although expensive, are being funded within the university's existing IT budget.

Graduate student registration system: A fundamental barrier to the goal of the university to grow its graduate student numbers is the university's graduate student registration legacy system. Due to the complex nature of graduate student recruitment and the extensive role that individual departments play in the recruitment and documentation confirmation process, a suitable enterprise-wide system has not been implemented. This has now changed, and the opportunity exists for the university to vastly improve and streamline its graduate student recruitment and enrolment processes. This system is essential if the university is to recruit the best and the brightest graduate students from around the world. The university has identified a resource need of $3 million to implement a new graduate student registration system.

Evergreening smart classrooms: In the past two years, to meet student demand and improve the quality of the learning experience, the university fast-tracked the upgrading of smart classrooms and increased the number of lab workstations. The number of smart classrooms increased from 135 to 331 in two years and the number of workstations increased from 1,533 to 1,864 in four years. Although the university has invested $3.3 million in evergreening funds for its labs and smart classrooms, the rate at which classrooms and labs were upgraded over the last few years means that current funds will not match the evergreening requirements come 2016. Additional evergreening funding of $2 million will be required to address this need. A source of additional evergreening funds has not been identified.

❖ **In developing the university's digital learning and information technology strategies, a resource gap of $41 million in one-time funding (phased in over five years) and $6.4 million in base funding has been identified.**

INVESTING IN CAPITAL INFRASTRUCTURE

In the competitive world of post-secondary education, it is important for the university to provide high-quality learning experiences and infrastructure that attracts, retains, and engages outstanding faculty and students.

The university has been able to leverage significant and continued capital funding and planning to build new learning and discovery spaces, and advance much-needed deferred maintenance. Going forward, the university has identified three priority areas for infrastructure investment, including deferred maintenance funding, planning and development dollars, and capital funding for critical projects on each of the university's distinct campuses.

Given the age of the university's buildings, adequate funding to protect against infrastructure operational failures is vital if the university is to avoid risks such as building closures. The university has identified not only the need to sustain current Infrastructure Maintenance Funding of $22 million per annum, but also the need for additional envelope funding of $20 million to $30 million per annum to address the university's deferred maintenance liabilities. Although capital funding will be limited in the short term, going forward the university requires the ability to quickly respond to new funding opportunities and partnerships. To effectively develop and explore partnership opportunities, significant planning and pre-design work is required to prepare the university to properly scope, budget, vet, and respond to these opportunities. The university has identified the need for a funding envelope for continued planning and pre-design of priority projects and initiatives of $3 million to $4 million per annum. To address critical constraints in the university's ability to deliver on the collective visions of the university and government, and to ensure that critical capital projects for each of the university's distinct campuses is addressed, the university has identified the following one-time capital funding requirements.

- Campus St. Jean: New Science Buildings ($30 million)
- North Campus: ICE fit-up ($40 million)
- Dentistry/Pharmacy Repurposing ($275 million; could be phased over a number of years)
- Augustana Campus: New Science Building and Classroom Upgrade ($30 million)
- Other: BARD replacement and expansion ($20 million)

As in the past, the university will continue to investigate strategies for leveraging existing assets through partnerships, and alternative and private funding.

❖ **The university is seeking funding for critical deferred maintenance, planning and pre-design, and capital projects as indicated.**

INVESTING IN THE ACCESS TO THE FUTURE FUND

Endowments are permanent funds in which the principal is preserved and invested, earning returns that support their intended purpose in perpetuity. Strong endowments are critical and necessary funding for universities around the world. They provide a relatively stable and predictable source of ongoing funding that allows academic institutions to sustain their efforts over time and tackle large-scale, complex problems that may take generations to solve. Endowment funding also helps attract and retain exceptional faculty and students, sending a signal of significant commitment and support for their work and allowing them to commit to in-depth study.

The university has made a strategic decision to diversify its funding base by growing its endowment to at least $1.5 billion by 2020. An endowment at this level would put the university on the path to being competitive with its peer universities. At $800 million, the university's endowment is currently smaller than those of the Univesity of British Columbia, the University of Toronto and the University of McGill, as well as those of benchmark U.S. institutions, for both absolute and per-student values.

With the desire to grow its endowment, the university directed donations made as a result of the Access to the Future fund to its endowment. Founded in March 2005, the Access to the Future Fund successfully stimulated $425 million in philanthropic support. The program was suspended for two years in April 2011, with only $25 million in donations having been matched by the province.

The suspension of the program frustrated and disappointed a significant number of donors, making it much more difficult to engage with them for further donations until their matching gifts are received. It is vitally important to the University of Alberta that the remaining balance of the Access to the Future funds be paid out.

❖ **The university is seeking the reinstatement of the Access to the Future fund, to increase the institution's success in securing philanthropic funding that supports broad-based excellence.**

Risk Implications

Like all internationally competitive research-intensive universities, the University of Alberta must deal with a variety of risks that have the potential to hinder its growth and the realization of its vision, mission, and strategic objectives. Many of these risks have been identified throughout this document.

1. The substantive and continuing economic uncertainty, low interest rates, concerns over rising costs of education, government deficits, and a budget model wherein expenditures are increasing more rapidly than revenue present the university with a series of fundamental budget risks.

2. Enrolment growth must be managed from the perspective of meeting the labour demands of the province and supporting the research mandate of the university. This will require the university striking the right balance of undergraduate to graduate students to position the university as an internationally competitive research-intensive institution.

3. Without the appropriate number of leaders, teachers, researchers, and support staff contributing to their full potential, the university will not be able to provide the quality of the learning experience or participate in the world-leading research expected of an internationally competitive research university.

4. For the university to remain relevant to its students and meet the needs and expectations of its faculty to engage in the highest-calibre research, it requires continuous investment in leading-edge IT infrastructure, highly skilled personnel, and support.

5. The continuation of appropriate levels of Infrastructure Maintenance Program funding to avoid a return to increasing levels of deferred maintenance is vital. In addition, limited or no funding of capital for new, expansion, or renewal projects will affect the capacity of the university to meet the strategic goals of the institution and have a negative impact on the economic goals of the province.

6. An institution that aspires to be among the top research-intensive universities in the world can only achieve that goal through the establishment of strategic collaborations and partnerships with an extensive range of stakeholders. The university requires access to and flexibility in funding that would enable it to leverage tens of millions of research dollars from provincial, national, and international sources.

7. In moving towards the vision of being one of the world's great public universities, the University of Alberta's national and international profile will increase. The university must address the current economic and financial challenges it faces in such a way that it does not negatively affect its increasing national and international reputation as an exceptional place to learn and work.

8. While the university must assume risks in support of its mandate as an internationally recognized research-intensive institution, it must also promote appropriate risk management plans and strategies that develop responsive attitudes and behaviours at all levels of the organization in order to maintain a healthy and safe environment for all.

Through its integrated enterprise risk management framework, the university will monitor, manage, and mitigate these and other emerging risks in an effort to avoid substantial impact on the university's ability to fulfil its strategic objectives.

UNIVERSITY OF ALBERTA

"uplifting the whole people"

— HENRY MARSHALL TORY, FOUNDING PRESIDENT, 1908

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