

2014 COMPREHENSIVE INSTITUTIONAL PLAN



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EXECUTIVE SUMMARY

The province of Alberta has a vision: To forge an enterprising and diversified knowledge economy defined by a culture of learning, creative visionaries, and innovators. To foster and inspire public and private sector leaders who can build public institutions, organizations, businesses, and industries that connect the province to the world at large. To achieve this vision, Alberta needs the benefits that the University of Alberta brings.

Alberta seeks an educated and engaged community and workforce—the U of A delivers. Alberta needs a collaborative, innovative research system that asks major questions, generates transformative discoveries, and translates new knowledge into effective solutions to urgent problems—the U of A delivers. Alberta strives to create resilient, diverse communities, full of enriched learning opportunities that will unleash the potential of all Albertans—the U of A delivers.

Nationally and internationally recognized for high-quality teaching, learning, and research, the U of A inspires and delivers excellence, defined by a bold, creative mindset. The U of A equips students, researchers, and scholars with the knowledge and tools to be active and engaged citizens, leaders, and entrepreneurs. U of A educates and prepares change makers, people with the talent and imagination to make something new.

Graduates of the U of A have a proven track record of driving innovation in all sectors of society. A 2013 landmark study estimates that U of A alumni have collectively founded 70,258 organizations globally, creating more than 1.5 million jobs and generating annual revenues of \$348.5 billion. Of those jobs, 390,221 were founded in Alberta. One-third of the organizations started by U of A alumni are non-profit or have a cultural, environmental, or social mission. More than 77 per cent of U of A alumni have volunteered locally, and 17 per cent have

volunteered outside Canada.¹ Collectively, this embrace of the university's promise of "uplifting the whole people" amounts to a force of remarkable power and effect.

The University of Alberta inspires by example. For more than a century, this institution has sought to provide the programs, research, and community action demanded—and more importantly, needed—by the public it serves. Adaptation and leadership have defined the university's history as it has responded to changes in social, economic, and cultural forces shaping both society as a whole and the field of higher education in particular. Today, the U of A aims to continue its upward trajectory providing learning experiences and research opportunities that compete with the best public universities in the world and give students, faculty, staff, and alumni the support, tools, and motivation to lead action and change.

The future strength and development of Alberta's knowledge economy will depend on the strength of the knowledge ecosystem that sustains such talented people. This ecosystem stretches from early childhood literacy and numeracy to the education and training of highly qualified people. It is sustained by a variety of enriched education and research environments that nurture potential, spark ambition, and fuel the pursuit of excellence through the provision of highly specialized core facilities and technical

¹ Briggs, Anthony and Jennifer Jennings. *Uplifting the Whole People: The Impact of University of Alberta Alumni through Innovation and Entrepreneurship*, 2013.

infrastructure. Alberta's post-secondary institutions each have a role in this system.

As a publicly funded, comprehensive academic and research institution, the U of A provides the rich soil that seeds the imaginations of undergraduates and feeds the talents and ideas of graduate students and post-doctoral fellows. Undergraduate students are embedded in an environment where research surrounds them and actively engages them. Graduate students and post-doctoral fellows bring energy and intellectual capacity to the U of A's learning, teaching, and discovery mandate in multiple ways. They often form the core of research teams working on complex research projects. Indeed, they are vital to Alberta's knowledge ecosystem. Leading researchers seek institutions with a reputation for attracting strong graduate students and post-doctoral fellows, who in turn become key generators of future knowledge transfer. With the level of knowledge and skill that teams of graduate students and post-doctoral fellows possess, principal investigators can pursue large-scale, visionary, and sometimes risky research agendas—agendas that often have the greatest potential for producing major discovery and innovation. From the U of A's research-intensive ecosystem emerges the province's next generation of social and technical innovators and entrepreneurs.

Maintaining and enhancing the integrity, vitality, and competitiveness of this research environment is the U of A's top priority. Over the next 18 months, the university's board and senior leadership is implementing a four-point Action Plan focused on inspiring and facilitating academic transformation, ensuring sustainable financial models, seeking administrative efficiency and effectiveness, and fostering culture change.

Changes are occurring on many fronts. Strengthening graduate education is at the fore of academic transformation; a major review of the full graduate experience—from recruitment to graduation—has been conducted to ensure that academic, professional, and administrative graduate student supports match or exceed

those of our peer institutions. The establishment of the Peter Lougheed Leadership Initiative will spark enriched leadership development at the undergraduate level.

Throughout the last year, the university has made several significant changes in order to present a balanced 2014-2015 budget. These include offering a Voluntary Severance Program to continuing members of the academy, reducing faculty budgets, changing policies to ensure the greatest possible recovery of indirect costs of research, and providing new incentives for revenue generation. These changes will continue to strengthen the institution's financial sustainability into the future.

Successful development and implementation of administrative efficiencies, such as streamlining payroll, simplifying financial and procurement processes, and modernizing records management, continues to be an ongoing project of the university. Many of these efforts also benefit the wider Campus Alberta network, with the U of A contributing expertise and leading collaboration and harmonization across Campus Alberta by building alliances, managing shared systems and agreements, sharing resources, and providing centralized services.

Overarching the U of A's Action Plan is the need to promote and facilitate a culture of transparency and accountability, as well as a culture of interdisciplinary and inter-faculty co-ordination and partnership on both academic and administrative endeavours.

As has been the case since the U of A's founding in 1908, Alberta's ability to capitalize on strategic opportunities, find effective solutions to issues of provincial interest, and provide leadership in areas of international importance will continue to be directly linked to the U of A's ability to attract and achieve excellence. Through excellence, 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.

Environmental Scan

Great opportunities lie ahead for Alberta; so, too, do risks and challenges. People in the 21st century are highly mobile: they 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 improve quality of life, increase competitiveness, secure economic prosperity and social resilience, and advance Alberta's position as one of the world's leading jurisdictions.

With every innovation, every discovery, every global partnership formed, every alumnus working in the international market, the University of Alberta is advancing the province's national and global brand. The U of A is a gateway through which Albertans and Alberta organizations, businesses, and industries can access the world and, in turn, a key entry point to the province for outside talent and innovation. In fact, global companies are attracted to Alberta by the research and innovation partnering opportunities presented by the university.

These successes come as many international regions have recognized the imperative for even greater investment in education, research, development, and innovation. That investment is highly strategic. Nations are increasingly crafting frameworks that allow for the concentration of resources that advances overall system efficiency and coordination, and focuses on a core number of institutions that have the potential to compete globally.

They are selectively investing in their major research-intensive universities to enable them to compete for the most talented students and researchers, the most important research projects, and the most valuable international and corporate partnerships. Increasingly, a strategic expansion of the complement of graduate

students and post-doctoral fellows is central to these efforts. From new players such as China, India, and Brazil to advanced economies such as Japan, South Korea, France, and Germany, university funding mechanisms are being reviewed to ensure they recognize and support top performance. The United States and the United Kingdom already have measures in place to provide strong incentives for research excellence—and these efforts are producing results.

Clearly, the international knowledge economy is fiercely competitive. Alberta's long-term success is dependent upon understanding the changes demanded by a shifting international post-secondary landscape and remaining competitive within it. Consistent, adequate, long-term funding for post-secondary education and innovation, specifically with strong support for the province's comprehensive academic research-intensive institutions, is essential to securing Alberta's prosperity long into the future.

As Alberta's 2013-16 Strategic Plan states, "Alberta's path for a successful and dynamic economy that can compete in, and contribute to, the global knowledge economy requires having the right people with the right skills. Future success also requires strong strategic relationships between government, post-secondary institutions, the research and innovation system and the province's entrepreneurial business sector."²

Given its wealth, creativity, and entrepreneurial spirit, Alberta has distinct advantages on the national and international stages. Through sustained, strategic investments in building blocks such as talented and creative people, advanced infrastructure, and research excellence, Alberta has the potential to emerge as one of the most dynamic and energetic jurisdictions in the world.

² Government of Alberta, *2013-16 Government of Alberta Strategic Plan*, p. 6.

The Academy

The University of Alberta is internationally recognized as one of the top 100 public universities in the world, and nationally as one of Canada's top five comprehensive academic and research institutions, with a reputation for providing nationally and internationally competitive undergraduate degrees, professional credentials, medical and doctoral training, and exceptional research capacity and impact in seven critical 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 full spectrum of research and scholarship enables the U of A to offer undergraduate, graduate, and professional degree programs within Alberta that are competitive nationally and internationally and to make the comprehensive contributions towards the scientific, social, and cultural innovations needed to support Alberta's vision for its citizens and their province.

Post-secondary education systems, and within them, research-intensive universities such as the U of A, are undergoing academic transformation in response to new opportunities and expectations concerning their role in society. Alberta's and Canada's needs for an educated citizenry and a skilled population are diverse, and each type of post-secondary institution makes its own contributions to meet these needs. As a comprehensive academic and research institution, and one of Canada's

leading medical/doctoral universities, the U of A provides the broad range of foundational BSc and BA degrees required to fill the projected gap of professional leaders and managers across nearly all private and public sectors. Offered within an integrated environment of advanced research, scholarship, and creative activities, these degree programs develop graduates who bring a particular set of skills, competencies, and perspectives to colleagues and employers upon graduation.

The U of A also provides professional degrees that must meet increasingly rigorous accreditation standards, the demand for professional skills development for all undergraduate and graduate students, and the demand for post-graduate and continuing professional education.

Finally, the U of A provides graduate programs for MA and PhD students from all disciplines. Along with post-doctoral fellows, many of these highly qualified professionals eventually undertake public and private sector positions as academics, managers, and leaders of technology, research, and innovation. They often spark the growth of new sectors for economic diversification.

To support and sustain the comprehensive academic and research-intensive mission of the U of A, the university operates highly specialized core research facilities essential in supporting internationally competitive

research. Examples of these facilities include animal lab facilities; 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 U of A, but also enable collaborative sponsored research with public and private sector partners.

The impact and competitiveness of both research and education activities continues to depend on global connections. The placement of Canadian undergraduate and graduate students in foreign research internship positions for a portion of their degree programs is emerging as another tactic for ensuring that Canada is globally connected. Undergraduate students and businesses alike are looking for increased experiential, internship, and co-op experiences in both domestic and international settings.

Conversely, bringing international students into Canada for graduate work and post-doctoral training continues to be a key complementary mechanism for addressing Canada's and Alberta's globalization objectives. Here, both Alberta and the U of A are competing with other Canadian provinces and universities, respectively, for

those international students with inclinations to study in Canada, either to remain as part of the professional workforce or to create international linkages upon their return. Our investments in global academic programs and research consortia remain a foundational part of an institutional strategy to create such opportunities for Alberta's students and for Alberta's established and emerging private sectors. These collaborations continue to accelerate the development of our advanced joint degree programs with global partners and to secure new federal and international funding resources.

Within Alberta, the U of A is responding to the increasing need for post-baccalaureate continuing education for professionals coming from or returning to rural and Aboriginal communities. Through partnerships with other Campus Alberta institutions, we have a number of well-established programs and initiatives in place, and we will continue this collaborative work to address new needs and opportunities. Within the academy, transformation is occurring through the development of innovative credentials to meet all these new opportunities and expectations, and through the targeted adoption of e-learning technologies and approaches for program delivery.

Capital Plan

In the competitive world of 21st-century post-secondary education, the vitality and vibrancy of the U of A's education and research ecosystem can only be maintained through well-supported, well-planned, and strategic repurposing and renewal of its facilities. As the university changes and the academy transforms, so must space needs and requirements. Though the U of A has recently completed and opened several new and renewed learning and research spaces, increased enrolment and demand continue to strain existing academic support space such as fitness facilities, formal and informal collaboration/social space, libraries, collections and storage, housing, and daycares. These spaces help attract and retain students, faculty, and staff because together they form and support an environment conducive to a successful academic outcome and experience. Purpose-built student housing is a key driver leading to successful learner outcomes and strong alumni relations.

The university's ability to meet its own and the province's objectives depends on continued investment for new facilities and for renewal and repurposing, addressing deferred maintenance of older facilities. 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 and 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 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 construction needs. 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 existing 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 and meeting the goals of our sustainability plan.
- 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 Alberta students as well as international students.
- Strategically plan and construct critical new facilities, respecting the varied needs of the university’s five

distinct campuses as they each serve unique and separate constituencies within Alberta.

The capital priorities outlined within the Comprehensive Institutional Plan are in direct response to the measures and goals outlined in the university’s academic and research plans. They also address space pressures directly related to differential growth of our graduate programs, differing space requirements for graduate versus undergraduate space, approved and planned program growth, changing pedagogy and program delivery methods, and the need for additional academic support space. While all U of A campuses work together as a whole, each serves distinct and separate constituencies across Alberta and each has critical capital priorities, putting the university in a unique position within the Campus Alberta model. 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.

Budget

Although the University of Alberta continues to face significant budget challenges in 2014-2015, it is looking forward to a period of greater budget stability, with government's decision to begin reinvesting in post-secondary education late in 2013-2014. As the university moves into 2014-2015 and onward, it will advance on the vision and academic priorities as laid out in *Dare to Discover* and the Comprehensive Institutional Plan. With a positive consolidated budget in place, and a structurally balanced operating fund in sight, the university will leverage government's reinvestment strategically in 2014-2015. A major thrust of the reinvestment will be stimulation of new revenue (net) to help mitigate the impact of budget cuts planned for 2014-2015. All of this will be accomplished within the context of the university's four-point action plan, which is focused on academic transformation, establishment of sustainable financial models, ongoing administrative effectiveness, and internal culture change.

Consolidated Budget

Prepared under Canadian Generally Accepted Accounting Principles (GAAP), the U of A's 2014-2015 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 operations is fully unrestricted within the consolidated budget. Funding for ancillary operations remains within general operations, while research revenues, philanthropic sources of revenue, and capital project funding are fully 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.

Over the last year, the university has focused on implementing plans that will enable it to realign its budget within a new funding context. For 2014-2015, the university has developed detailed plans and strategies that will achieve a consolidated balanced position for 2014-2015 while also allowing for limited strategic investments that will advance the institution. Although mitigated by the mid-year 2013-2014 2.6 per cent base funding increase to the Campus Alberta grant, and notwithstanding the university's efforts to generate new sources of revenue, cuts across the institution will still need to be implemented to realign the university's expenditures with its budgeted and forecast revenues.

For 2014-2015, the consolidated budget reflects an excess of revenue over expense of \$9.5 million on a total revenue of \$1,749 million. This represents less than one per cent of the university's budgeted consolidated revenue. The \$42-million change between the 2013-2014 preliminary actuals and the 2014-2015 proposed budget is driven by a number of factors. First, there was the specific decision by the Board to approve a consolidated budget deficiency in 2013-2014 and phase in budget cuts over two years in an effort to plan effectively and limit the impact of the cuts on the institution. Second, in 2013-2014 the university booked the full impact of the Voluntary Severance Program

along with other one-time severance payments associated with 2013-2014 budget cuts. Finally, and based on current assumptions of no increase to the Campus Alberta grant, the 2014-2015 consolidated budget has factored in seven per cent budget cuts to the academic units and eight per cent budget cuts to the administrative units in order to bring the university's consolidated budget into a balanced position.

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.

Key highlights of the university's revenue assumptions include:

- a zero per cent adjustment to the Campus Alberta grant. Any increase in the grant will be used to offset budget cuts;
- an estimated \$4-million base increase to the Campus Alberta grant to replace tuition revenue following government's decision to freeze tuition at 2012-13 levels;

- a one per cent increase in general tuition fees and graduate student international differential fees and an effective five per cent increase to undergraduate international student tuition fees;
- continued phased approach to full implementation of market modifier tuition;
- a one per cent increase to all mandatory non-instructional fees with a proposed \$16.38 per term increase to the Athletics and Recreation Fee; and
- marginal growth in investment income.

Key highlights of the university's expenditure assumptions include:

- salary increases driven by negotiated salary settlements (1.65 per cent across-the-board increase and an average two per cent increase for merit);
- employer-paid non-statutory benefit cost increases averaging 7.2 per cent;
- a seven per cent overall average cut to faculties and eight per cent to administrative units;
- one-time severance costs associated with budget cuts;
- marginal decline in utility expenditures; and
- stable scholarship funding.

Resource and Risk Implications

In November of 2013, the provincial government announced \$50 million in reinvestment in Alberta's publicly funded post-secondary institutions, of which \$14.4 million was reinvested at the University of Alberta. As outlined in the budget chapter, the university will invest this money strategically in 2014-2015. Notwithstanding this reinvestment, the university remains concerned about its capacity to realize its bold vision and at the same time contribute to the province's vision of an Alberta powered by innovation, ingenuity, and an entrepreneurial spirit. What is needed is a commitment to a long-term funding model that recognizes the unique aspects of a comprehensive academic research institution, including the funding of graduate students and post-doctoral fellows as well as the research enterprise and facilities that support not only the university's mandate, but also much of Campus Alberta.

The 2013-2014 budget had a negative impact on all aspects of the university including its students, staff, faculty, alumni, donors, and strategic partners. In addition to dealing with the unanticipated cut to the Campus Alberta grant, there has been uncertainty in government policy and funding support going forward. This has made all aspects of planning extremely difficult and any type of long-term strategic planning almost impossible. This lack of certainty affects the university's capacity to recruit and retain the brightest students and world-leading faculty. This uncertainty also hinders the ability of the university to attract new resources through donors, international consortia, and governments. The university is committed to expanding its resource base and generating new sources of revenue; however, stability in its base funding and an understanding of matching fund opportunities is critical in achieving this goal.

The following is a list of the university's key resource requests:

- three-year rolling commitments of increases to the Campus Alberta grant, enabling all of Campus Alberta to more effectively plan and fulfil their post-secondary education mandates
- a funding envelope that supports and appropriately funds growth in the number of graduate students, post-doctoral fellows, and the required professorial positions
- the provision of new targeted resources to fund the direct costs of the research and innovation enterprise
- matching dollars in support of digital technologies that will enhance the learning and research environments and achieve efficiencies within the university while bringing benefits to Campus Alberta
- funding for critical deferred maintenance, planning and pre-design, and capital projects as indicated
- payout of approximately \$400 million in yet unmatched donations within the Access to the Future Fund. Completing the match of donations in the program will 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 cut in provincial funding 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 (graduate and undergraduate) must be managed from the perspective of meeting the labour demands of the province and supporting the research mandate of the university.
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 is vital to avoid a return to increasing levels of deferred maintenance.
6. An institution that aspires to be among the top research-intensive universities in the world 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 and permanent base funding to support core research infrastructure.
7. 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. The university 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. Previous and planned budget reductions may negatively affect the capacity of the university to provide the programs and services required for students to meet their potential.

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.

Conclusion

Although the University of Alberta's financial circumstances changed with the March 2013 provincial budget, the university remains committed to excellence and 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 plans and goals as outlined in the following Comprehensive Institutional Plan. The U of A is a resilient institution that has emerged from difficult periods in the past and maintained a steady upward trajectory of increasing national and international reputation for academic leadership.

Indeed, the U of A is an outstanding university for the public good. Our faculty, staff, and students, together with the support of partners in government, business, and the broader community, are committed to meeting our own high expectations for excellence and to earn our reputation as one of the world's top public research universities through our achievements and service to the province, the nation, and the world.

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.

A handwritten signature in black ink, appearing to read 'Douglas O. Goss', with a horizontal line underneath.

Douglas O. Goss, Q.C., AOC
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 Innovation 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 2013. 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) assumes overall responsibility for the process

of preparing the CIP and leading it through the 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 2014 review process for the CIP involved the President's Executive Committee (January 23, 2014), briefings to the General Faculties Council Academic Planning Committee and the Board of Governors Finance and Property Committee (for information on February 7, 2014), the General Faculties Council Academic Planning Committee (for recommendation on February 12, 2014), the Board Learning and Discovery Committee (for information and for recommendation on February 24, 2014), the Board Finance and Property Committee (for information and for recommendation February 25, 2014), and the full Board of Governors (for information and for approval on March 14, 2014). Detailed briefings of the CIP are 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.

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



MEASURING IMPACT

WALK DOWN AN ALBERTA STREET AND COUNT EVERY FIVE PEOPLE YOU PASS. THE SIXTH ONE IS PROBABLY WORKING FOR AN ORGANIZATION STARTED BY A UNIVERSITY OF ALBERTA GRADUATE.

In fact, U of A alumni have started more than 70,000 organizations that have created more than 1.5 million jobs around the world. With almost 400,000 of those jobs in Alberta (of a total 2.1 million jobs in Alberta in 2012), the impact of U of A alumni is very real for working Albertans.

Around the world, alumni-founded companies have generated annual revenues of \$348.5 billion. By comparison, the annual gross domestic product of the province of Alberta is \$306.7 billion, putting the impact of U of A alumni relative to Alberta in the same category as the impact of Stanford alumni relative to the state of California. It's a staggering perspective not previously well known or understood.

This information comes from a study done by U of A professors Tony Briggs and Jennifer Jennings. A first for Canadian institutions, the study was based on study methodology previously used at MIT, Stanford, and Tsinghua University in China.

The U of A study also expanded on previous methodology to examine the mission of alumni-founded organizations, finding that U of A alumni promote cultural change and create societal value that extends beyond dollars and cents. More than 30 per cent of alumni have published peer-reviewed work; 15 per cent are professional artists; 24 per cent have created new products, services, or business models; and 4.6 per cent have patented new products or methods.

One-third of the organizations started by U of A alumni are non-profit or have a cultural, environmental, or social mission. In addition, more than 77 per cent of U of A alumni have volunteered locally, and 17 per cent have volunteered outside Canada.

A previous study by Briggs and Jennings released October 2012 showed that the U of A contributes \$12.3 billion annually to the Alberta economy—the equivalent of 135 NHL teams. That study focused on the direct impact of institutional and visitor spending combined with induced economic impact from university education and research.

SUCCESSES AND OPPORTUNITIES:

- The U of A has launched a Venture Mentoring Service, matching student entrepreneurs with successful alumni who will guide, support, and inspire them in their learning.
- U of A alumni listed faculty as the number one factor in their success.
- U of A alumnus Ray Muzyka ('90 BMedSc, '92 MD), who co-founded BioWare with two fellow med school alumni in 1995, has now founded Threshold Impact, which mentors and invests in information technology, new media, medical innovations, and social entrepreneurs, focusing on sustainable, profitable impact investments.
- On average, each organization founder has started 1.84 organizations, with annual revenue per employee of \$220,301.
- One class of 1,555 U of A Education graduates touches the lives of more than 195,000 students.

ENVIRONMENTAL SCAN

Great opportunities lie ahead for Alberta; so, too, do risks and challenges. 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 and enables knowledge transfer, it will improve quality of life, increase competitiveness, secure economic prosperity and social resilience, and advance Alberta's position as one of the world's leading jurisdictions.

Future success will depend on Alberta's ability to advance the province as a global leader, to foster an innovative and entrepreneurial society, and to encourage a thriving creative culture. The University of Alberta, as the province's flagship research-intensive post-secondary institution, will be a critical partner in educating and developing top talent, attracting and retaining world-class students, leaders, and visionaries across disciplines. The outcomes and benefits will be many: a highly skilled workforce, engaged citizens, economic diversification, evidence-based policy development, social and technological solutions to serious challenges, and sustained, long-term prosperity.

In addition to educating, credentialing, and employing generations of Albertans, the U of A is a gateway through which Albertans and Alberta organizations, businesses, and industries can access the world. In turn, it is a key entry point to the province for outside talent and innovation. 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 province's global brand.

These successes come as many jurisdictions have recognized the imperative for even greater investment in education, research, development, and innovation. Regions and countries around the world are aligning their resources and reviewing their educational and research sectors to better compete within the global marketplace. As a result, the knowledge economy is fiercely competitive. Alberta's long-term success is dependent upon remaining competitive within this reality.

Consistent, adequate, long-term funding for post-secondary education and innovation, specifically with strong support for the province's comprehensive academic research-intensive institutions, is essential to securing Alberta's prosperity long into the future. As Alberta's 2013-16 Strategic Plan states, "the economic and intellectual

centre of gravity is shifting away from traditional economic powers in the West, and the pace at which knowledge and technology are advancing is altering how the world does business. Albertans have always been innovators and leaders, resilient and resourceful. These are the qualities that build the province and remain critical to Alberta's continued future success. Alberta's path for a successful and dynamic economy that can compete in, and contribute to, the global knowledge economy requires having the right people with the right skills. Future success also requires strong strategic relationships between government, post-secondary institutions, the research and innovation system and the province's entrepreneurial business sector."³

Given its wealth, creativity, and entrepreneurial spirit, Alberta has distinct advantages on the national and international stages. Through sustained, strategic investments in building blocks such as talented, creative people, advanced infrastructure, and research excellence, Alberta has the potential to emerge as one of the most dynamic and energetic jurisdictions in the world.

The Alberta Environment

In December 2013, Premier Alison Redford reaffirmed her commitment to post-secondary education and innovation, saying, "The strengthened ministerial team will lead the next phase of the Building Alberta Plan, with a focus on expanding our economy, driving innovation and working every day to create an even better quality of life for Albertans" by "ensuring [that] Alberta has the skilled workforce and training opportunities we need" for "an innovative and diversified economy."⁴ Newly appointed Minister of Innovation and Advanced Education Dave Hancock echoed these sentiments when he noted that, "70 to 80 per cent of the new jobs are going to require some

form of post-secondary credentialing"⁵ and, as a result, the post-secondary system will be critical to Alberta's long-term success.

The University of Alberta is at the core of delivering the credentialing and performing the research that the province of Alberta requires to remain economically competitive and to address the social, cultural, and political challenges of the modern global knowledge economy. Indeed, in addition to being one of the largest drivers of the provincial economy, the university fulfils its promise through the achievements of its alumni.

A recent study estimates that U of A alumni have collectively founded 70,258 organizations globally, creating more than 1.5 million jobs and generating annual revenues of \$348.5 billion. By comparison, the annual gross domestic product of the province of Alberta is \$306.7 billion. Of those jobs, 390,221 were created in Alberta. With 2.1 million people being employed in Alberta in 2012, roughly one in every five Albertans is employed by a company founded by a U of A graduate. One-third of the organizations started by U of A alumni are non-profit or have a cultural, environmental, or social mission. More than 77 per cent of U of A alumni have volunteered locally, and 17 per cent have volunteered outside Canada. The report also concludes that a U of A education is a major catalyst for innovation and entrepreneurship and that faculty interactions, more than any other experience, have the highest impact on alumni after graduation. The success of the U of A is inextricably linked to the position of Alberta on the global stage.

ALBERTA'S DEMOGRAPHIC CONTEXT

Within Canada, Alberta faces significant and distinct challenges now and in the future in relation to its human capital. As a province, it has low levels of participation

³ Government of Alberta, *2013-16 Government of Alberta Strategic Plan*, p. 6.

⁴ Government of Alberta, *Premier Redford focuses ministerial team on innovation and economic growth*, December 6, 2013 as accessed on January 3, 2014 at: <http://gov.ab.ca/release.cfm?xID=35519E6244A99-0EE5-26CA-5AD766486566278D>

⁵ Metro News, *Alberta Premier Alison Redford says universities need to help with economy*, January 29, 2013, as accessed on January 3, 2014 at: <http://metronews.ca/news/edmonton/529476/alberta-premier-alison-redford-says-universities-need-to-help-with-economy/>

in post-secondary education among 18- to 24-year-olds, low completion rates of bachelor's degrees, and an aging population, which is leading to a decline of skilled labour in the workforce. Additional population pressures make Alberta's demographic risks more significant—including projections that the province's population will grow by one million people over the next decade.⁶ At the same time, traditionally underrepresented groups in higher education, such as immigrants and Alberta's Aboriginal population, have been growing rapidly, necessitating a strategy to ensure their inclusion in higher education and in Alberta's job market. As a result of overall population growth and demographic pressures, demand for skilled labour will undoubtedly increase. The province estimates that, over the coming decade, it will face a labour shortage of approximately 96,000 workers and that, of these, more than 62,000 will require a post-secondary education.⁷

Graduate Students and Post-Doctoral Fellows

Even more concerning are the low numbers of master's and PhD students currently enrolled in Alberta—students who are traditionally a measure of an economy's innovation success. According to data from the Association of Universities and Colleges in Canada and Statistics Canada, in 2011, graduate student enrolment per thousand of population in Alberta was at 4.1, compared with 5.3 in British Columbia and 8.5 in Quebec.⁸ As the national and international sections of this chapter will demonstrate, other jurisdictions are aggressively investing in funding and recruiting graduate students, as well as post-doctoral fellows, as a critical dimension to gaining a competitive advantage in the global knowledge economy. Given the size and scope of its research enterprise, the University

of Alberta is well positioned to play a central role in expanding the complement of graduate students and post-doctoral fellows who choose to build their careers in Alberta.

International Students

The attraction of international students will help address the province's need for human capital for research, innovation, and highly skilled labour in a dynamic economy.

Currently, international students and faculty members study and teach in universities and colleges throughout Alberta, but as mentioned above, recruiting and retaining more of these highly skilled individuals is critical if the province is to realizing immediate and long-term aspirations. In 2012-13, international students accounted for 11 per cent of undergraduate students, 26 per cent of master's students, and 44 per cent of doctoral students at the U of A. 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 U of A 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 puts 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).

⁶ Government of Alberta, *Alberta's population reaches four million*, September 26, 2013, as accessed on January 3, 2014 at: <http://alberta.ca/release.cfm?xID=350618FCB7CB9-D315-C7B6-3A1E8521B366D28A>

⁷ Government of Alberta, *Alberta's Occupational Demand and Supply Outlook 2013-2023*, as accessed on January 3, 2014 at: http://0101.nccdn.net/1_5/0fa/328/17c/AB-occupational-demand-supply-outlook-1-.pdf

⁸ [Data extrapolated from] Association of Universities and Colleges in Canada, "Enrolment by university: 2011 preliminary full-time and part-time enrolment at AUCC member institutions" *Canadian Universities*, <<http://www.aucc.ca/canadian-universities/facts-and-stats/enrolment-by-university/>>

ALBERTA'S POST-SECONDARY EDUCATION LANDSCAPE

In 2013, the Government of Alberta began a broad and multi-faceted evaluation of the post-secondary and innovation landscape. The scope and depth of these evaluations have the potential to effect considerable structural change and to significantly alter the education and innovation environment of the province. Letters of Expectation also were first introduced in Budget 2013. The letters, individual to each institution, provide a new means by which goals, objectives, and outcomes are described and can be evaluated.

Results-Based budgeting

The Cabinet Mandate Letter asserted the government's commitment to fiscal responsibility and discipline via a new "results-based budgeting" process—described as a means by which the government will be able to "re-establish government budgets from the ground up and ensure money is allocated to areas of highest need," marking "a clean break from the incremental spending increases of the past decade."⁹

Alberta Treasury Board and Finance is currently undertaking a comprehensive three-year review of all government expenditures to find efficiencies, identify areas for improvement, and ensure government work is effective and delivers intended results. The results-based budgeting review process has the potential to transform how both the province and the University of Alberta in particular are funded and evaluated for success. Out of these discussions come the opportunity for the U of A to re-evaluate several critical aspects of current program delivery and impact.

Alberta Institute for Applied Research and Commercialization

The creation of an Alberta Institute for Applied Research and Commercialization, first discussed in *Shaping Alberta's Future*, a report from the Premier's Council for Economic Strategy, is an initiative that has the potential to positively and significantly affect the innovation and commercialization landscape of the province of Alberta.

The March 7, 2013 budget speech first introduced the notion of a research umbrella institute focused on collaboration. The speech indicated that the government will use the institute to "focus its research agenda and financial resources in areas where they will have the greatest impact and benefit for Albertans" in areas that will include "energy and the environment, health, agriculture and food, and water."¹⁰

Envisioned as a means by which the province can support the diversification and growth of Alberta's economy, the institute and its role within the broader research environment can help Alberta leverage its considerable research capacity into economic growth.

An expert panel, struck in September 2013 to work on the initiative, is set to deliver its final report early in 2014. This report is of great interest to Alberta's academic, research, and industry sectors, and to the University of Alberta as well.

A broad range of questions are being asked related to the creation of the institute, including the role of the institute with respect to existing commercialization entities, the structure of the institute; its funding mechanism, the focus of its activities, its relationship to other partners in the research ecosystem—including research-intensive universities and the Alberta Innovates corporations—and the scope and timing for implementing its mandate.

⁹ Government of Alberta, *Cabinet Mandate Letter*, June 4, 2012.

¹⁰ Government of Alberta, *Speech - Budget 2013: Responsible Change*, March 7, 2013, p. 13.

An Alberta Institute for Applied Research and Commercialization presents the opportunity to strengthen the province's incubation function by integrating and supporting research sector partners. This integration could bridge existing innovation system gaps to greater leverage assets into the products, processes, services, and companies that will broaden Alberta's economic base—but the realization of this goal will need to be managed carefully.

As this initiative is in the beginning stages of consideration, uncertainties, as noted above, remain as to how this vision might be realized to the advantage of all stakeholders involved. Until greater detail is available from the work conducted by the expert panel, it will be difficult for the higher education sector and the U of A to determine and plan for the changes a realigned research and funding schema might bring.

Alberta Innovates Corporations

The Government of Alberta has also committed to a system-wide review of Alberta's innovation landscape and infrastructure. It is expected that the final report from the Alberta Institute for Applied Research and Collaboration expert panel will also inform the delineation and future role of the four Alberta Innovates corporations, including the broad questions pertaining to the scope of the institute. More particularly, the report may also indicate how the existing Alberta Innovates corporations will be affected by the initiative as well as whether or to what degree the Alberta Innovates entities might be integrated into the institute.

With respect to the role of universities in this transformative change, during a town-hall event, Premier Redford affirmed that the interconnectivity of Alberta innovation actors is the end goal, saying, "connecting the research and the commercialization and the investment that is available in this province is a really important part of what we do for future generations."¹¹

It is exactly the current degree of interconnectivity which brings into question the implications of such potentially far-reaching changes to the research system on the higher education system and on the U of A in particular.

Campus Alberta Reviews

In addition to these broad changes being discussed for Alberta's research landscape, a number of post-secondary specific reviews were commenced in 2013. These four reviews include the Post-secondary Learning Act (PSLA), Tuition Policy, the Funding Model Review, and Outcomes and Indicators.

¹¹ Metro News, *Alberta Premier Alison Redford says universities need to help with economy*, January 29, 2013, as accessed on January 3, 2014 at: <http://metronews.ca/news/edmonton/529476/alberta-premier-alison-redford-says-universities-need-to-help-with-economy/>

The Canadian Environment

Much like the provincial landscape, the Canadian environment is characterized by considerable change and uncertainty, with the respective roles of government, academia, industry, and other stakeholders shifting in response to emerging opportunities and risks. As the analysis below reveals, many of the critical issues shaping the Alberta context—bringing advanced research to market, supplying the economy with the skills sought after by industry, and intensifying the focus on tangible outcomes resulting from investments in advanced education and research—are also salient to the national scene.

CANADA'S ECONOMIC CONTEXT

Following the severe financial crises that gripped world markets in 2008-2009, restoring the health and vibrancy of the national economy remains the overriding priority of the Government of Canada. The federal government's economic policy consists of a wide variety of new initiatives, such as international trade, natural resource development, public infrastructure, and labour relations, as well as the crucial areas of advanced learning, science, technology, and research and development.

After an overall tepid performance in 2013, future economic growth prospects are optimistic for 2014 and onward. The Bank of Canada expects the national economy to return to its full productive capacity by 2015. In the 2013 fall economic update, the federal government forecasts growth of a tepid 1.7 per cent for 2013, but this is expected to rise to 2.4 per cent in 2014 and 2.6 per cent in 2015. As a result of both accelerating growth and austerity measures,

the federal government appears to be on target to reach its stated goal of a balanced budget by the 2015-16 fiscal year.

Improved economic conditions, as well as an improved federal balance sheet, could result in greater receptivity from the federal government to proposals for new investments in support of growing Canada's knowledge economy. As the final section of this chapter explores in greater detail, a broad international shift towards sizable investment in world-class research excellence is an area deserving of federal attention.

CANADA'S POST-SECONDARY EDUCATION LANDSCAPE

As the previous section on the Alberta environment explored, the province's advanced learning and research systems and structures are undergoing considerable structural changes. It is important to note, however, that other provinces are also reinventing their approaches to post-secondary education and research, which could alter the national landscape for advanced learning in Canada.

Significant examples include the following.

- **Ontario:** Following its \$6.2-billion investment in higher education under the 2005 Reaching Higher plan, the Ontario provincial government released a differentiation policy framework in November 2013 and is in the process of negotiating strategic mandate agreements with each of its post-secondary institutions. The province is also continuing to work towards the goal of creating 6,000 new graduate student spaces by 2015-16.

- **Quebec:** In October 2013, Quebec’s provincial government released its Economic Policy, which committed more than \$3.7 billion over five years to a number of initiatives targeted at boosting provincial spending on R&D to three per cent of GDP.
- **British Columbia:** The Government of British Columbia, drawing on more than 100 submissions received from across its post-secondary sector, released a Green Paper in March 2013 encapsulating a new quality assurance framework initiative.

The issue of emerging labour and skills shortages has the potential to profoundly affect the trajectory of provincial post-secondary education systems as well. Both the Canadian Chamber of Commerce and the Canadian Council of Chief Executives have launched initiatives in recent years highlighting the seriousness of this issue. In 2013, the Conference Board of Canada established a new Centre for Skills and Post-Secondary Education and held a summit on talent development. Michael Bloom, vice-president of organizational learning and effectiveness for the Conference Board, published an op-ed piece in the *Globe and Mail* arguing that Canada’s labour market challenges necessitate a genuine national education strategy. In an appearance before a Canada-U.S. business forum, Prime Minister Stephen Harper deemed skill shortages “the biggest challenge our country faces.” In response, Budget 2013 unveiled a new program entitled the Canada Job Grant, which would allow Canadians to access up to \$5,000 in federal funds for job training, provided the money is matched by provinces and employers.

The outcomes of this ongoing debate could have important implications for research-intensive post-secondary institutions such as the University of Alberta, particularly if governmental policies, programs, and funding priorities shift towards a strict understanding of the present and future needs of the labour market in particular occupations. Comprehensive research and teaching institutions will continue to be challenged to articulate the importance of a broad-based education that promotes values such as critical thinking, citizenship, and entrepreneurialism in addition to occupation-specific skills training.

FEDERAL SCIENCE AND TECHNOLOGY POLICY

The Government of Canada has integrated science, technology, and innovation into its overall approach to fostering economic growth and social prosperity for Canadians. However, the federal funding environment has been constrained by budgetary austerity measures as well as an accelerating shift towards support for industry-focused research and commercialization activities.

Science, Technology and Innovation Strategy

In the fall 2013 Speech from the Throne, the federal government committed to releasing an updated version of the Science and Technology Strategy, entitled *Mobilizing Science and Technology to Canada’s Advantage*, released in 2007. The updated strategy is likely intended to incorporate recommendations from some of the recent studies commissioned by the federal government, such as

the Expert Panel to Review Federal Support to Research and Development, the report of the Advisory Panel on Canada's International Education Strategy, and the review of aerospace and space policies and programs. In particular, the renewed federal S&T strategy can be expected to further codify the government's focus on enhancing Canadian business innovation, particularly industrial research and development.

An update of the previous S&T strategy offers an opportunity for the research and post-secondary education community to provide strategic advice on the overall policy framework that underpins the federal government's investments in innovation. Comprehensive research institutions such as the University of Alberta must continue to articulate the importance of balancing industry-oriented funding with continued and robust support for discovery research. A recent report from the C.D. Howe Institute argued that the best strategy for attracting the world's top minds to Canada is through concentrated investments in the most challenging problems from a scientific point of view, rather than in projects that may have a commercial application.

Granting Councils

Budget 2013 maintained funding for the Granting Councils, with \$15 million allocated to the Natural Sciences and Engineering Research Council (NSERC) and to the Canadian Institutes of Health Research (CIHR), respectively, and \$7 million to the Social Sciences and Humanities Research Council (SSHRC). However, this funding does not represent new dollars but instead reinvestments of the spending efficiencies identified by the Councils in the Strategic and Operating Review conducted in 2011-12. In the latest instalment of an ongoing trend, funding for the Granting Councils announced in Budget 2013 is conditional support dedicated to increasing

industry-academic partnerships. Students at colleges and polytechnics are also now eligible for NSERC's undergraduate scholarships.

Canada Foundation for Innovation

Budget 2012 contained a signal that \$500 million would be allocated to the Canada Foundation for Innovation (CFI) over five years, beginning in 2014-2015. Budget 2013, however, also indicated that the CFI would gain access to an additional \$225 million in unallocated interest income from its endowments to support the next Leading Edge/ New Initiatives Fund competitions, as well as to sustain the foundation's long-term operations. In addition to these new resources, post-secondary institutions will also have a new opportunity to apply for infrastructure funding under the provincial-territorial infrastructure component of the new Building Canada program unveiled in Budget 2013. Although a submission process for the Building Canada Fund has yet to be released by Infrastructure Canada, it is critical that institutions identify potential high-priority projects and that provincial governments are prepared to provide matching funds if required.

Indirect Costs of Research

Budget 2013 also indicated that a review would be conducted of the Indirect Costs of Research Program "to ensure that the program is meeting its objective of reinforcing excellence in post-secondary research." With a total allocation of more than \$330 million to the post-secondary sector in 2013-2014, with \$16.7 million to the U of A alone, the Indirect Costs of Research Program is a significant component of institutional budgets. However, large institutions that conduct the vast majority of advanced scientific research in Canada are routinely undercompensated by the granting formulas used to allocate ICP funding. As a result, federally funded

research must be subsidized by other revenue sources. The Association of Universities and Colleges of Canada (AUCC) has recommended that the program be increased by \$300 million to attain an across-the-board reimbursement rate of 40 per cent for all universities. Regardless of the approach taken, the U of A will continue to make the case for a more robust approach to reimbursing institutions for the indirect costs of advanced research.

National Research Council

The government continues to drive the National Research Council's shift to a more industry-focused mandate, with an investment of \$121 million over two years to continue the transformation unveiled in Budget 2013. The impact of the NRC's transition on the federal S&T system and on research-intensive universities remains unclear; however, the U of A, alongside the Government of Alberta, will undoubtedly be closely monitoring the NRC as its role evolves, particularly to ensure that our important partnership with the NRC on the National Institute for Nanotechnology is maintained and strengthened.

International Engagement

The federal government continues to move forward its agenda for Canada in the world. Following the release of the report of the Advisory Panel on Canada's International Education Strategy, entitled *International Education: A Key Driver of Canada's Future Prosperity*, Budget 2013 allocated \$23 million over two years to international education initiatives, with \$10 million for expanded marketing activities abroad and \$13 million for the Mitacs Globalink Program. Significantly, the 2013 budget also noted that international education would likely be an area of future investment, stating that "the government will continue to review and respond to the Panel's other recommendations as its fiscal position improves."

The panel also determined that Canada should accept double the number of international students, at both the undergraduate and graduate levels. 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 U of A is strategically improving its global brand and, by extension, Alberta's and Canada's global brands.

As additional chapters of this document illustrate, the U of A remains a leader in Canada in attracting the best and brightest students and researchers. Given intensifying global competition, however, further collaboration is needed from both the federal and provincial levels of government, as well as the higher education sector, to continue to position Canada strongly on the international stage. The Government of Alberta's newly released International Strategy, which foresees an important role for post-secondary institutions, is a welcome development in this regard.

Expanding free trade, such as with the agreement-in-principle with the European Union and continuing focus on agreements with India and the Trans Pacific Partnership, has been a central pillar of the federal government's broader economic strategies. These and other trade priorities are guided by the Global Markets Action Plan, released in November 2013, which is the government's refreshed Global Commerce Strategy. The proliferation of free trade negotiations and international engagement provides additional opportunities for the U of A to build on its previous successes in the area of international research partnerships—including the Li Ka Shing Institute of Virology, the Helmholtz-Alberta Initiative, and China's Tsinghua University.

The International Environment

As this chapter has demonstrated, the most salient characteristic of the Alberta and Canadian environment for advanced education and research is change. Structural changes are underway in the policies, programs, and funding climates for post-secondary institutions. And there are shifting expectations from government, industry, students, and the public in terms of the role and competencies of advanced learning systems. These trends, however, are also situated within an international context that, if anything, is adapting even more rapidly. According to the World Bank, the share of global GDP contributed by non-OECD nations climbed from 19 per cent to an astonishing 34 per cent between 2001 and 2011. Changes in the geographic concentration of economic and political power are having a profound effect on industries and sectors around the world, including in higher education and research. As the Conference Board's Michael Bloom argues in the above-mentioned article, "Countries everywhere are themselves reforming and enhancing their PSE systems and institutions. It's all part of their national competitiveness strategies."

DECLINING CANADIAN COMPETITIVENESS

Meanwhile, numerous independent studies confirm a gradual erosion of Canada's competitive position on the global stage. The latest report of the Science, Technology and Innovation Council found that, when ranked according to total R&D intensity, Canada fell from 16th to 23rd among 41 OECD nations between 2006 and 2011.

The most recent assessment of global competitiveness by the World Economic Forum found Canada stagnant in 14th position, down five spots from 2009. Another recent analysis by the Conference Board of this country's innovation performance ranked Canada 13th of 15 peer countries—an overall D grade—on the number of patenting firms less than five years old, which the OECD has indicated is among the most important indicators of an entrepreneurial economy.

The decline in Canadian competitiveness has real consequences, such as continued lacklustre productivity, stagnation in the growth of innovative firms and, ultimately, weak economic growth that affects our quality of life as well as the fiscal viability of important social programs at a time of population aging. A recent report from the Canadian Council of Academies starkly warns that the structural conditions—such as preferential access to the world's largest market, and a global commodities boom—that have reliably compensated for Canada's past weak innovation performance will be of less and less relevance in the altered global environment that is emerging. "Now," the report's authors argue, "because circumstances are radically different from those that shaped Canadian business culture and strategic behaviour for more than a century, business will have to embrace innovation-focused business strategies to compete and survive." Similarly, nations around the world are also making strategic choices within their post-secondary education systems in order to compete globally.

GLOBAL RESEARCH EXCELLENCE

Undoubtedly, Alberta and Canada face growing international competition as both advanced and emerging economies invest in research and innovation. A new dynamic, however, is that nations are increasingly crafting frameworks that allow for the concentration of resources in order to secure a global competitive advantage. In a context of economic and fiscal uncertainty, these governments are advancing overall system efficiency and co-ordination, but they are also focusing resources on a core number of institutions that have the potential to compete globally.

Countries around the globe are selectively investing in their major research-intensive universities to enable them to compete for the most talented students and researchers, the most important research projects, and the most valuable international and corporate partnerships. From new players such as China, India, and Brazil to advanced economies such as Japan, South Korea, France, and Germany, university funding mechanisms are being reviewed to ensure they recognize and support top performance. The United States and the United Kingdom already have measures in place to provide strong incentives for research excellence—and these efforts are producing results.

Examples of this growing trend include the following:

- The **United States** awards the vast majority of its federal research and development grants through merit-based award competitions, with the top 100 (out of 4,800) academic institutions in the U.S. accounting for approximately 80 per cent of total federal R&D support.
- The **United Kingdom** requires universities to provide submissions to Research Excellence Framework panels, which assess institutional results prior to allocating future research funding decisions. The 24-member Russell Group (out of a total of 115 public universities) receives approximately two-thirds of all university research grant and contract income. U.K. Research Councils also support Doctoral Training Centres housed within universities or a consortium of institutions. The Scottish Funding Council has also recently opted to allocate research grants to institutions that score highly in international rankings.
- **Australia** awards research and research training funding to institutions through several performance-based programs, with 70 per cent of available funding directed to the Group of Eight leading research institutions. Australia's post-secondary system includes 39 universities. The government also oversees the Sustainable Research Excellence Program, which targets a 50 per cent top-up for the indirect costs of research and released a Strategic Roadmap for Australian Research Infrastructure in 2011.

- **Germany's** Excellence Initiative, which continues through 2017, concentrates resources in areas of superior performance. The initiative operates in two tiers of competitive funding. To promote top-level research at 39 universities, the German government approved a budget of €2.4 billion in 2012 to fund 45 graduate schools, 43 clusters of excellence, and 11 institutional strategies.
- **France's** Excellence Initiative "Idex" also directs funding to areas of superior performance, with the aim of building research capacity and international reputation. Idex held two competitive calls in 2011 and 2012, which led to the selection of eight clusters of higher education institutions. Idex launched a third call in April 2013. The initiative provides financial support of €7.7 billion. In total, Idex will allocate €19 billion to projects in higher education and research from a €35-billion national fund then-President Nicolas Sarkozy announced in 2009 to support "Investments for the Future."
- **China** launched projects 211 and 985 over the past decade. Project 211 aims to raise the research standards of some 100 high-level universities, cultivating an elite cohort capable of advancing national economic and social development strategies. Project 985 provides additional funding to 39 universities within Project 211.

Funding is allocated to these universities to build new research centres, improve facilities, hold international conferences, attract leading faculty, and send Chinese faculty to conferences abroad. More recently, Project 2011 focuses on accelerating the innovative capacities of Chinese universities through international partnerships and exchanges.

- **India** has designated 40 of its 567 institutions as an "Institute of National Importance," a status that is connected to special recognition and funding arrangements. The government has also created the "University with Potential for Excellence" Program, which currently comprises 15 institutions, and the "Centre with Potential for Excellence in Particular Area" Program, which provides funding for five years (with a potential five-year extension) to 23 universities.

As one of Canada's leading research-intensive institutions, the U of A continues to work in partnership with national stakeholder organizations such as the U15 and the AUCC to advocate for instilling an increased emphasis on global research excellence in the overall suite of federal S&T programs.

Conclusion

Alberta is changing. As this chapter has explored, national and international developments are profoundly affecting Alberta's economic and social future. Within a global knowledge economy characterized by intense competition, advanced education and research remains essential to ensuring Alberta's people are skilled and adaptable, our economy is robust and diversified, and our culture and quality of life is vibrant and prosperous. At this critical juncture, however, it is important that Alberta not simply respond to developments elsewhere, but lead them through carefully considered, bold, strategic action. As this environmental scan has made clear, national and sub-national governments in Canada and around the world are closely examining their post-secondary education and research policies and programs to ensure they are not merely competitive but world-class. Given its wealth, creativity, and entrepreneurial spirit, Alberta has distinct advantages on the national and international stages. Through sustained, strategic investments in building blocks such as talented, creative people, advanced infrastructure, and research excellence, Alberta has the potential to emerge as one of the most dynamic and energetic jurisdictions in the world.



RESEARCH IMPACT BASIC RESEARCH

WHEN THE ELUSIVE HIGGS BOSON PARTICLE WAS DISCOVERED BY AN INTERNATIONAL TEAM OF SCIENTISTS IN 2012, IT HELPED REDEFINE OUR UNDERSTANDING OF THE UNIVERSE AND ITS ORIGINS.

For the first time, scientists were able to show how the building blocks of the universe combine and have mass. Called the discovery of the century, the Higgs boson was a major undertaking involving 3,000 scientists worldwide, including a team from the University of Alberta whose work designing one of two particle accelerators used in the project proved instrumental in detecting the particle.

This past year, U of A researchers were again part of an international scientific collaboration that broke new barriers in the exploration of the universe. Named the scientific breakthrough of 2013 by *Physics World*, the IceCube Laboratory, located deep in the Antarctic ice, detected high-energy neutrinos originating from outside the solar system. These particles could mark the dawn of a new field of study, neutrino astronomy. Instead of pointing a telescope at cosmic phenomena, scientists could now track neutrinos to their point of origin to learn about black holes or exploding stars.

Closer to home, U of A researchers sifted through millions of years of history to

discover “Baby” the *Chasmosaurus belli*—the most complete juvenile dinosaur fossil of its kind—as well as rare skin impressions from an *Edmontosaurus* that show the animal had a rooster-like cockscomb. Both rare finds, made right here in Alberta, have changed our understanding of dinosaur biology and could help uncover even more answers about the evolution of life on Earth.

Despite their size and scale, discoveries like the Higgs boson, IceCube and “Baby” all originate from a researcher’s curiosity about one of humanity’s most basic questions: Where does life come from? This kind of curiosity-driven research is at the core of the U of A’s academic mission to discover, disseminate, and apply new knowledge. Having the support to pursue such basic questions, U of A researchers forge connections to major international partnerships and play instrumental roles in achieving the major discoveries of our times. They are the 21st century’s pioneers, working at the frontiers of knowledge and opening pathways to whole new areas of understanding and study.

OUTCOMES AND BENEFITS

- The U of A has formed international collaborations with leading researchers at institutions such as CERN (European Organization for Nuclear Research), University of Wisconsin-Madison, University of Toronto, University of Oxford, University of California-Irvine, Universität Bonn, University of Bern, Ohio State University, University of Adelaide, and University of Cambridge.
- Research such as Higgs boson, IceCube and fossil discoveries shine international attention on the U of A and the quality and breadth of our research.
- More than 3,000 scientists in 30 countries were involved in the Higgs boson discovery; more than 250 spanning 41 institutions in 12 countries are involved in IceCube.
- U of A students have travelled to the IceCube Laboratory in Antarctica to work on the collaboration with students and scientists from Belgium, Wisconsin, Maryland, and Germany.
- The U of A’s global leadership in paleontology and paleobiology gave rise to Dino 101, the U of A’s first massive open online course (MOOC) led by renowned paleontologist Philip J. Currie. More than 23,000 students enrolled in the first offering of the course.

THE ACADEMY

The University of Alberta is internationally recognized as one of the top 100 public universities in the world, and nationally as one of Canada's top five comprehensive academic and research institutions. This reputation is grounded in nationally and internationally competitive undergraduate degrees; professional credentials; medical, doctoral, and post-doctoral training; and exceptional research capacity and impact in seven critical 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 full spectrum of research and scholarship enables the U of A to offer undergraduate, graduate, and professional degree programs within Alberta that are nationally and internationally competitive and to make the comprehensive contributions towards the scientific, social, and cultural innovations needed to support Alberta's vision for its citizens and their province.

Post-secondary education systems and research-intensive universities, such as the University of Alberta, are undergoing academic transformation in response to new opportunities and expectations. Alberta and Canada need an educated citizenry and a skilled population, and each type of post-secondary institution makes its own contributions to meet these needs. As a comprehensive

academic and research institution, and as one of Canada's leading medical/doctoral universities, the U of A provides the broad range of foundational BSc and BA degrees required to prepare informed citizens and fill the projected gap in highly qualified personnel across nearly all private and public sectors. Offered within an integrated environment of advanced research, scholarship, and creative activity, these degree programs develop graduates who bring a particular set of skills, competencies, and perspectives to colleagues and employers upon graduation.

The U of A also provides professional degrees that must meet increasingly rigorous accreditation standards, the demand for professional skills development for all undergraduate and graduate students, and the demand for post-graduate and continuing professional education.

Finally, the U of A provides graduate programs for MA and PhD students from all disciplines. Along with post-doctoral fellows, many of these highly qualified professionals eventually undertake public and private sector positions as academics, managers, and leaders of technology, research, and innovation. They often instigate the growth in new sectors for economic diversification.

To support and sustain the learning and discovery ecosystem that underpins the comprehensive academic and research-intensive ecosystem of the U of A, the university operates highly specialized core research facilities essential in supporting internationally competitive research. Examples of these facilities include animal lab facilities; 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 U of A, but also enable collaborative sponsored research with public and private sector partners.

The impact and competitiveness of both research and education activities continues to depend on global connections. The placement of Canadian undergraduate and graduate students in foreign research internship positions for a portion of their degree programs is emerging as another tactic for ensuring that Canada is globally connected. Undergraduate students and businesses alike are looking for increased experiential, internship, and co-op experiences in both domestic and international settings.

Conversely, bringing international students into Canada for graduate work and post-doctoral training continues to be a key complement for addressing Canada's and Alberta's globalization objectives. Here, both Alberta and the U of A are competing with other Canadian provinces and universities, respectively, for those international students with inclinations to study in Canada, and who may remain in Canada as part of the professional workforce or create international connections upon their return home. Our investments in global academic programs and research consortia remain a foundational part of an institutional strategy to create such opportunities for Alberta's students and for Alberta's established and emerging private sectors. These collaborations continue to accelerate the development of advanced joint degree programs with global partners and to secure new federal and international funding resources.

Within Alberta, the U of A is responding to the increasing need for post-baccalaureate continuing education for professionals coming from or returning to rural and Aboriginal communities. Through partnerships with other Campus Alberta institutions, we have a number of well-established programs and initiatives in place, and we will continue this collaborative work to address new needs and opportunities. Within the academy, transformation is occurring through the development of innovative credentials to meet all these new opportunities and expectations, and through the targeted adoption of e-learning technologies and approaches for program delivery.

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.

The strength of the University of Alberta is founded on the quality and diversity of its people, programming, research, and resources. The U of A remains committed to attracting outstanding undergraduate and graduate students, post-doctoral fellows, and professors from Alberta, across Canada, and abroad. Along with an exceptional and highly skilled technical and professional staff, these individuals create an integrated environment of teaching, learning, research, and creative activities. They enable the breadth and quality that characterizes the U of A's public and private partnerships in Alberta, its participation in national consortia and initiatives, and its collaborations with top-tier international institutions and agencies.

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 are from immigrant families;
- students from socio-economic groups for whom university access is a financial challenge; and
- students who are the first in their family to attend university.

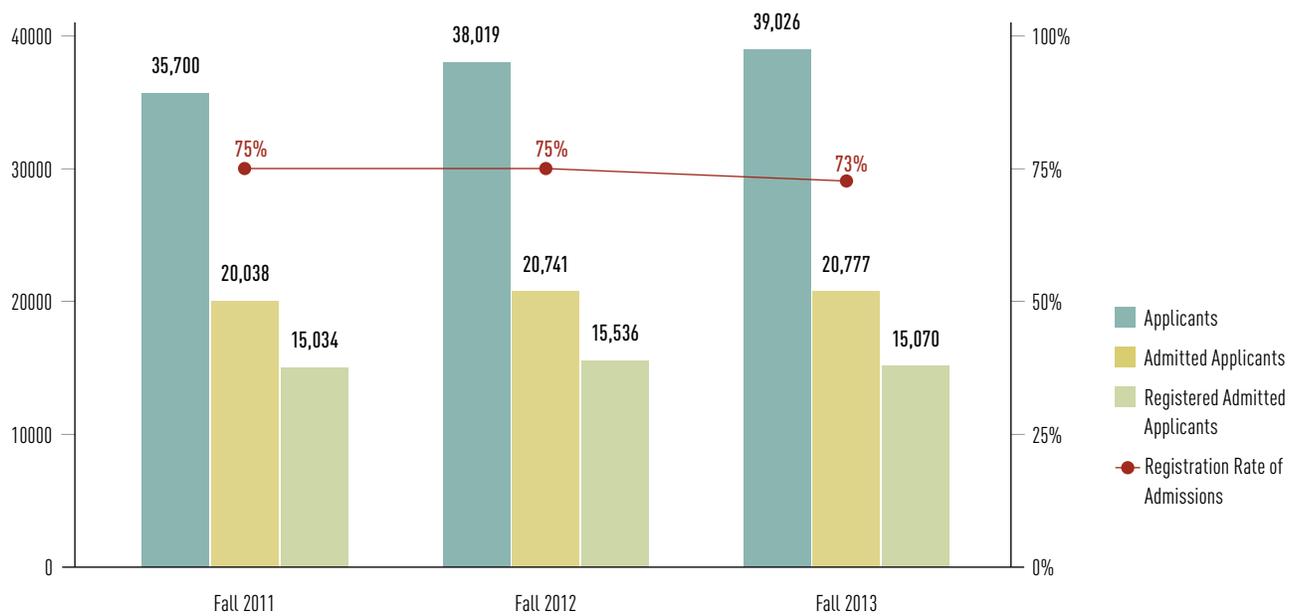
Among this diverse array of undergraduate and graduate students are some of Canada's most accomplished and promising minds. U of A students have consistently won Canada's most prestigious scholarships, including 68 Rhodes Scholarships since 1913 (the third most among Canadian universities), 57 Vanier Scholarships since 2009, and eight Trudeau Scholarships since 2004, while student athletes have won 63 national championships since the inception of Canadian Interuniversity Sport. In 2013, a U of A student received one of 10 prestigious 3M National Student Fellowships. This program, now in its second year, recognizes leadership in advancing a vision of quality education.

Graduate students and post-doctoral fellows are a distinguishing and essential feature of the U of A's academy and its contributions to discovery, innovation, and creative scholarship. They come to the U of A from across Canada and the world, to work with professors who have outstanding national and international credentials as researchers and teachers. 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. The professoriate continues to

bring distinction to the U of A for exceptional teaching. In 2013, materials engineering professor John Nychka earned the 2013 Engineers Canada Medal for Distinction in Engineering Education. Also in 2013, two more of our professors, Kim Fordham Misfeldt from the Department of Humanities at Augustana and Heather Zwicker from the Department of English and Film Studies in the Faculty of Arts, were recognized with prestigious 3M National

Teaching Fellowships for excellence in undergraduate teaching. This brings the U of A's total number of 3M laureates to 40 since the founding of the award, by far the highest number in Canada. The continuing recognition of U of A faculty with this national award reflects the commitment of the professoriate to provide an exceptional undergraduate learning experience within a research-intensive environment.

FIGURE 1 APPLICATIONS AND ADMISSIONS



Notes: The numbers reported reflect unique individuals. Registration rate is the proportion of those admitted who registered. This data is based on information in effect on October 1 of the reported year. **Source:** Acorn Data Warehouse

Access and Enrolment Projections and Plans

Since 2010, applicants to University of Alberta programs have increased by 4,289 or 12 per cent. With a steady acceptance rate of 75 per cent and an applicant-to-registration conversion rate of approximately 40 per cent, headcount enrolment has grown from 38,243 in 2010 to 39,267 in 2013.

Access to programs at the U of A is adjusted in response to student demand, workforce needs, and new fiscal resources or constraints. 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. Demand was such that the target enrolment was met immediately. In 2014, undergraduate enrolment in the BEd program will be reduced by 246 FLEs in specialized areas where employment opportunities are scarce. These FLEs will be redirected (converted at a three to one ratio to 82 graduate FLEs) to high-demand graduate programs that prepare teachers for administrative positions where employment opportunities are increasing. In the Faculty of Arts, with reduced teaching capacity in specific undergraduate programs resulting from the loss of 25 faculty members through the Voluntary Severance Program, 250 undergraduate FLEs will be

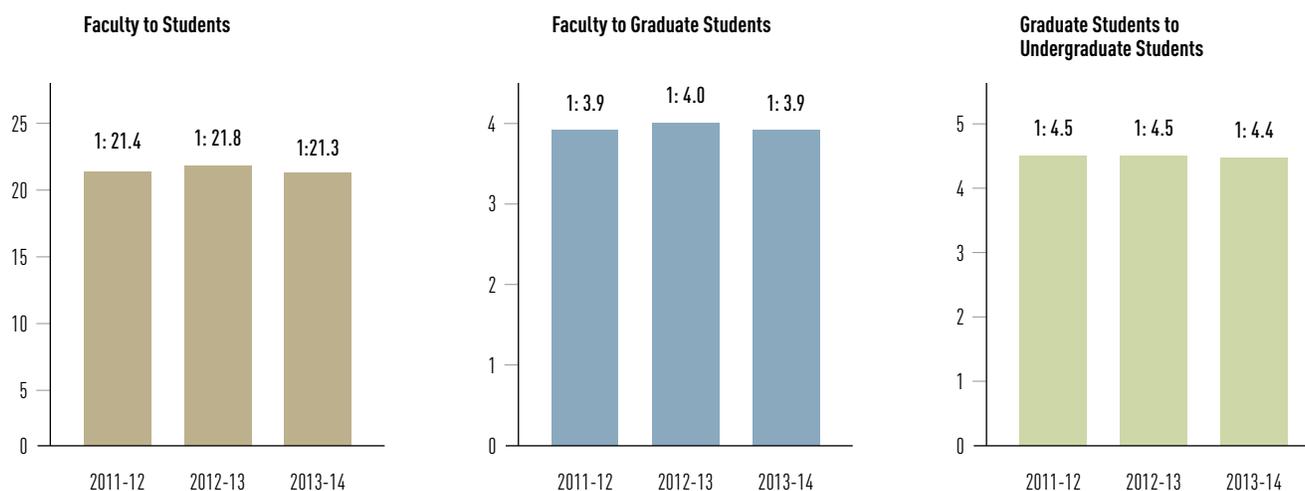
converted to 83 graduate FLEs which will, in turn, offset over-target graduate program enrolment.

Managing enrolment through 2016-17 is expected to remain a challenge for direct entry programs, particularly in STEM faculties, because of student demand. Despite affected faculties setting higher high school completion averages and transfer GPAs, exceptionally strong demand for BSc programs in the faculties of Engineering, Science, Physical Education and Recreation, and Agricultural, Life and Environmental Sciences led to above-target enrolments in Fall 2012 and Fall 2013. The U of A will continue to use admission standards to balance student demand with the ability to deliver a quality teaching and learning 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 students
- 1:3 graduate student to undergraduate students

FIGURE 2 FULL-TIME EQUIVALENT (FTE) RATIOS, 2011-12 TO 2013-14



Notes: 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) students represents the number of full-time students plus one-third the number of part-time students 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. 2013-14 staff data are preliminary. **Sources:** Acorn Data Warehouse for student data. 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 an educational environment that exposes undergraduates to a discovery, research, and innovation culture that can provide them with opportunities to participate on cross-disciplinary, cross-professional initiatives with teams of graduate students, post-doctoral fellows, faculty, and industrial partners. Thus, the U of A remains committed to achieving these ratios, and will continue to differentially increase the number of graduate students. Strategic reinvestment in professorial positions lost through budget cuts will ensure we retain and enhance our effectiveness in both core and cross-disciplinary research and training.

The University of Alberta's institutional benchmark for access in 2013 was 32,993 FLEs. 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, plus
- annual variable adjustments since 2010-11 to specific faculty and program enrolment FLEs to reflect new provincial access funding for targeted programs and conversion of undergraduate spaces to graduate spaces as part of approved access and program changes.

Benchmark enrolment targets for faculties were maintained in the 2013 CIP despite the 7.2 per cent decrease to the Campus Alberta grant which arrived in the middle of the admissions and registration cycle for 2013-2014. As of December 1, 2013, overall institutional undergraduate enrolment remained above target by approximately 1007 FLEs (compared with 919 FLEs in 2012-13). Overall institutional graduate enrolment also remained above target at approximately 1,163 FLEs (compared with 1,224 FLEs over target in 2012-13).

Spreading full implementation of the 7.2 per cent cut over two years—mitigated by the grant increase announced in November 2013—has allowed time for faculties to reduce their teaching staff complements, streamline the number of courses and sections offered, partake in

opportunities offered by IAE for enhanced access funding where qualified student demand has pushed enrolment levels above target, reduce targets where graduate supervisory capacity has diminished through loss of professors, and strategically adjust enrolment targets to levels commensurate with longer-term graduate program goals. Outcomes of these efforts include conversion of undergraduate FLEs to graduate FLEs in the faculties of Education and Arts in response to student demand for master's credentials, and a reduction in the graduate target of 117 FLEs in the Faculty of Science. As a result of these outcomes, and an IAE-initiated re-evaluation of the FLE factor in the Faculty of Pharmacy and Pharmaceutical Sciences, the overall institutional undergraduate enrolment target for 2014-2015 has been reduced to 25,812 FLEs, while the graduate enrolment target has been increased to 6,680 FLEs for a total enrolment target of 32,492 FLEs.

Demand from well-qualified students for BSc programs in Engineering and general BSc programs remains strong. Qualifying admissions averages have been increased slightly for 2014-2015 so as to achieve target levels.

See Appendix 1 for 2014-2015 enrolment targets by faculty.

Health Sciences Enrolment

In CIP 2013, steady state enrolment until 2014 was predicted in the health sciences disciplines specifically, with minor changes each year for additional health graduates who were or may be funded. The graduate targets in the Health Workforce Action Plan for nursing and medicine remained in place through 2013-2014. However, a one-time additional cohort of five MD spaces planned for Fall 2013 was cancelled. In 2014-2015, the need remains for new base funding to support existing soft-funded graduate physical therapy pilot programs at Augustana Campus and the U of A's Calgary Centre; funding is also needed to expand the occupational therapy graduate program into Calgary. Proposals related to these two programs were submitted to the Ministry of Innovation and Advanced Education in November 2012 and again in September 2013. The last intake of students for the current, soft-funded physical therapy satellite programs took place in September 2013 with graduates to emerge in 2015-16. These programs now have 10 students in each cohort, but given current demand, numbers could be expanded.

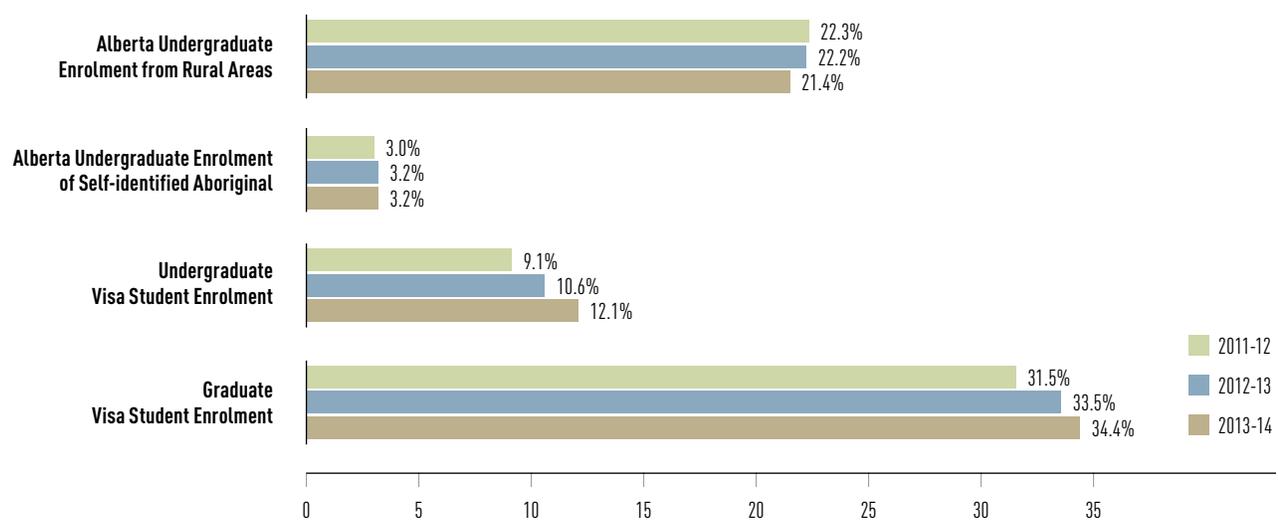
Aboriginal, Rural and Francophone Enrolment

The U of A stands respectfully on lands once known only by Aboriginal people. Our academic plan, *Dare to Deliver 2011-2015*, continues the U of A's institutional commitment to Alberta's Aboriginal people for meaningful engagement on teaching, learning, and research initiatives. As the first institution 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, offering outstanding educational opportunities to students in a rural environment and conducting 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, which is an integral part of Edmonton's francophone community.

Aboriginal students. The U of A 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.

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

FIGURE 3 ENROLMENT OF SELECTED STUDENT GROUPS



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

Network and a team of special advisers to the provost are also charged with enhancing Aboriginal engagement, opportunities, and research. The Aboriginal Teacher Education Program, now celebrating its 10th anniversary, is a community-based collaborative cohort program offered in partnership with provincial and tribal colleges. It is foundational to improving success for Aboriginal and rural students in K-12, and preparing them for post-secondary education. Medical training initiatives focused on Aboriginal learners are also well established: the U of A has trained 77 Aboriginal doctors to date, more than any other institution in Canada. In 2013, four new Aboriginal students were admitted to the MD program, while five graduated.

CIP 2013 selected updates and outcomes:

- *New Teacher Education Program*: The full implementation of a new teacher education program model with a new compulsory Aboriginal component for all Education programs is a first in teacher education in Alberta.
- *Aboriginal Teacher Education Program*: Two Aboriginal Teacher Education Program cohorts in Portage College and Northern Lakes College were added.
- *Master of Education Blue Quills Partnership*: Twenty-two students graduated from the U of A/Blue Quills Master of Education partnership, started in 2011.
- *Master of Arts in Native Studies*: The Master of Arts in Native Studies is now offered both on campus and as an online program, extending access to this program to students across Alberta, as well to other national and international indigenous and non-indigenous students.
- *Aboriginal pipeline program for MD*: A “pipeline” program of one year of open studies has been developed for Aboriginal students with undergraduate university

degrees who are interested in applying for medicine but who do not have GPAs that meets the minimum standard. It is anticipated that this program will be ready for September 2014.

- *Master of Education in Educational Policy Studies (Indigenous Peoples’ Education specialization)*: This program is now 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 U of A.

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 & Dentistry, it offers practicum placements for students in rural Alberta. In partnership with the faculties of Education, Nursing, and Rehabilitation Medicine, it 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.

CIP 2013 selected updates and outcomes:

- *2+2 Agreements with GPRC*: Two new “2+2” program agreements were added between the Augustana Campus and Grande Prairie Regional College, with a third under discussion. The objective is to reach a specific rural population in the Grande Prairie region.
- *Augustana Transfer Agreements*: To build enrolment, Augustana Campus is also developing and expanding transfer agreements with Campus Alberta institutions in Red Deer, Medicine Hat, and Grande Prairie.

- *Camrose Performing Arts Centre:* The Camrose Performing Arts Centre on Augustana Campus, slated to be completed in April 2014, with a formal opening in September, will enhance the quality of student experiences in fine and performing arts programming at Augustana.
- *Rural/Regional Family Medicine Program:* The rural/regional Family Medicine Residency Program is now offered in Grande Prairie, Red Deer and Fort McMurray. This investment is aimed at increasing the number of graduates who choose rural and regional communities in which to practise.

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, a bilingual BSc in environmental and conservation sciences, and, in partnership with the U of A's professional faculties, bilingual undergraduate education in nursing, commerce, and engineering. A majority of teachers in Alberta's immersion and francophone schools have studied at CSJ.

CIP 2013 selected updates and outcomes:

Le Centre Collégial de l'Alberta: Since the 2013 CIP, the delivery of college-level programs at Le Centre Collégial de l'Alberta is being reassessed in consultation with IAE and community groups. Development and implementation of the Techniques d'administration des affaires and proposed Tourisme programs was deferred during this period.

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

The presence of international students broadens the perspective, impact, and relevance of the U of A's teaching, research, creative activities, and community service activities. International students educated at the U of A and who remain in Alberta provide the province with additional highly skilled, innovative, and entrepreneurial professionals. They also bring global connections and insights.

In 2005, the U of A set an institution-wide international undergraduate enrolment target of 15 per cent, and an international graduate student enrolment target of 30 per cent. In 2013-2014, international enrolment is estimated to have grown by two per cent. Undergraduate international enrolment is estimated to have increased by seven per cent and graduate international enrolment by three per cent. Currently, approximately 12 per cent of our undergraduate population and 36 per cent of our graduate population are international students.

The three undergraduate program areas in which we have the greatest international enrolment demand are Engineering (which attracts 18 per cent of the total international undergraduate population), Economics (13

per cent of total international undergraduate population), and Commerce (10 per cent). The graduate program areas in which we have the highest number of international student registrations are Engineering (14 per cent of graduate international students are enrolled in the thesis-based MSc in Engineering and 17 per cent are enrolled in the PhD programs in Engineering) and Science (seven per cent of graduate international students are enrolled in the thesis-based MSc program and 14 per cent are enrolled in the PhD programs in Science). We anticipate continuing strong demand for these programs from international students in the coming years.

Strategies to continue to increase international student enrolment include offering in-country early admission to outstanding applicants; identifying countries where interest in studying in Canada is growing and developing articulation program partnerships there; further developing bridging programs to assist students in a successful transition to university in Alberta; improving processes so as to convert a greater number of applicants to registrants; and maximizing retention and completion of international students through better processes, student services, and scholarship opportunities. Financial aid for international students, like domestic students, is a key factor. U of A has one of Canada's largest cohorts (over 500) of sponsored international students (i.e., international students who have scholarships provided by their home countries). The

university will continue to develop relationships with sponsoring agencies around the world.

CIP 2013 selected updates and outcomes:

- Recruited 61 Brazilian undergraduate students through CALDO's participation in Brazil's Science Without Borders scholarship calls, raising the number of Brazilian students on campus by 142 per cent.

Graduate Student Enrolment

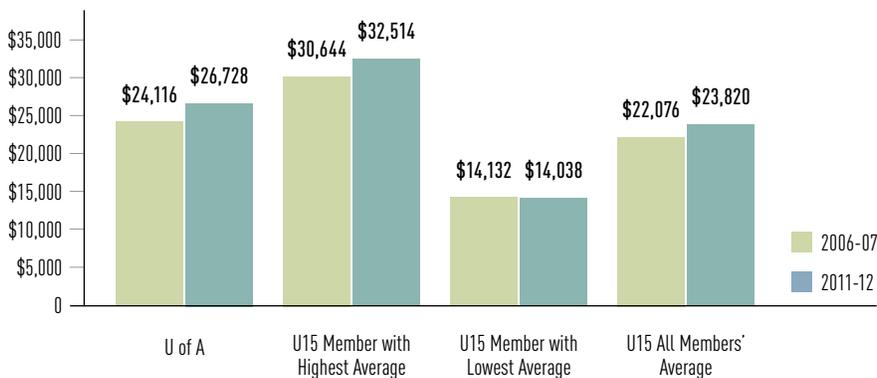
The U of A aims to enrol 10,000 graduate students, with at least 30 per cent being international students. The U of A is continuing to focus on strategies to increase the number of domestic graduate students. Using 2004-05 as the base year, the U of A has been gradually increasing the numbers of graduate students and medical students differentially, while maintaining the undergraduate population. That is, between 2004-05 and 2013-14, graduate student enrolment has increased by 59 per cent (from 4,900 to 7,805 FLEs) and doctor of medicine enrolment by 47 per cent (from 505 to 743 FLEs). At the same time, undergraduate enrolment has risen by 20 per cent.

Graduate program enrolment targets are reported in Appendix 1.

Because financial support is critical to the recruitment and retention of top graduate students, the U of A strives to offer appropriate and effective financial packages that are competitive among Canada's top five research-intensive universities. The U of A's average financial support for graduate students is competitive with Canada's leading graduate schools. However, average financial support for

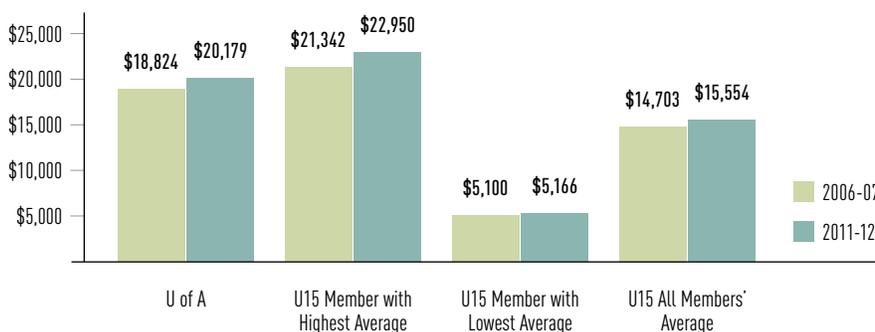
doctoral students, increasing approximately 11 per cent to \$26,728 in 2011-2012, has remained relatively unchanged compared with other U15 institutions since 2006-2007. Support for research master's students has increased seven per cent during this same time, placing it second relative to the U15 cohort.

FIGURE 4 AVERAGE FINANCIAL SUPPORT PER DOCTORAL STUDENT, UNIVERSITY OF ALBERTA AND U15 UNIVERSITIES



Note: Excludes Health Sciences. **Source:** U15 Data Exchange

FIGURE 5 AVERAGE FINANCIAL SUPPORT PER RESEARCH MASTERS STUDENT, UNIVERSITY OF ALBERTA AND U15 UNIVERSITIES



Note: Excludes Health Sciences. **Source:** U15 Data Exchange

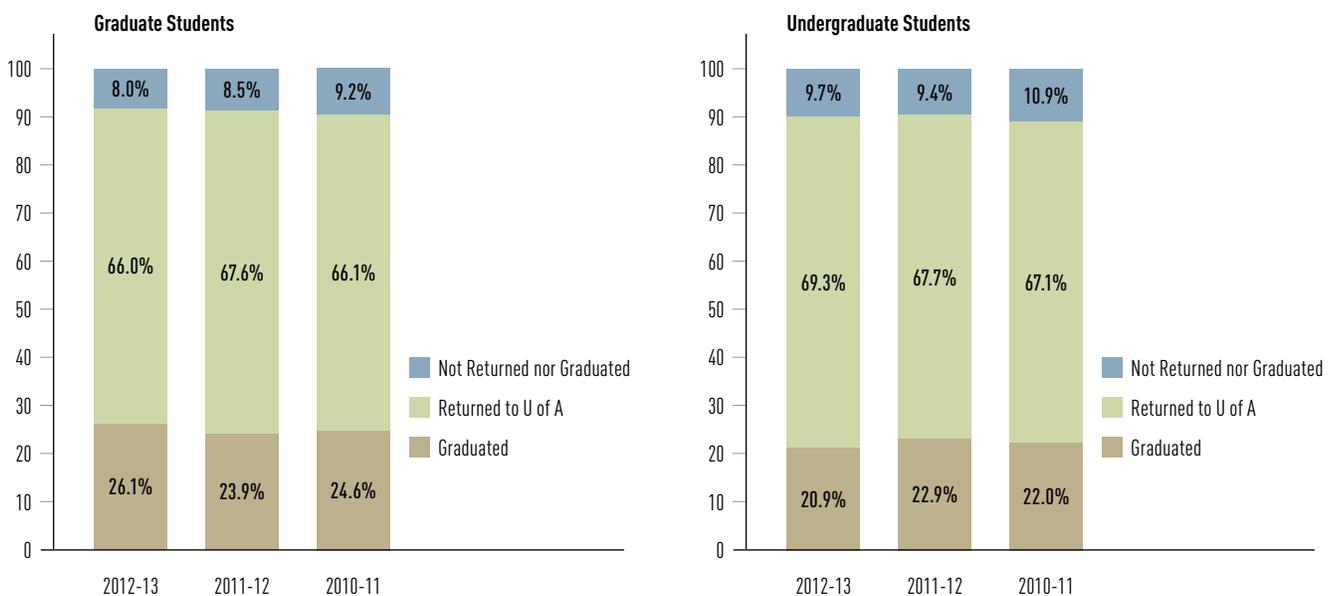
Retention and Completion

Assessing and improving retention rates are a focus for attention in the academic plan, *Dare to Deliver 2011-2015*. To assess the effectiveness of initiatives aimed at improvement, trends are being charted and analyzed. From 2011 to 2013, graduate student retention rates have improved by 1.4 per cent while overall undergraduate student retention rates have increased by 1.1 per cent.

Completion rates for undergraduate programs overall have remained steady from 2009 to 2011 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.

Strategies to improve completion rates include enhancing academic engagement inside the classroom, creating mentoring programs, investing in student health and wellness, effectively assessing English-language skills for admission and bridging programs, facilitating language improvement, and aiding career and life development. To complement these, the university's programs and partnerships create academic engagement opportunities outside the classroom, through internship and co-op programs and community service learning.

FIGURE 6 RETENTION



Notes: Data reflects students registered on December 1 of the reported year. The graduated percentage is as of November 1, 2012. Other student activity, as of December 1 of the year following the cohort year. 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. Historical data is updated annually so may differ slightly from previously published figures.

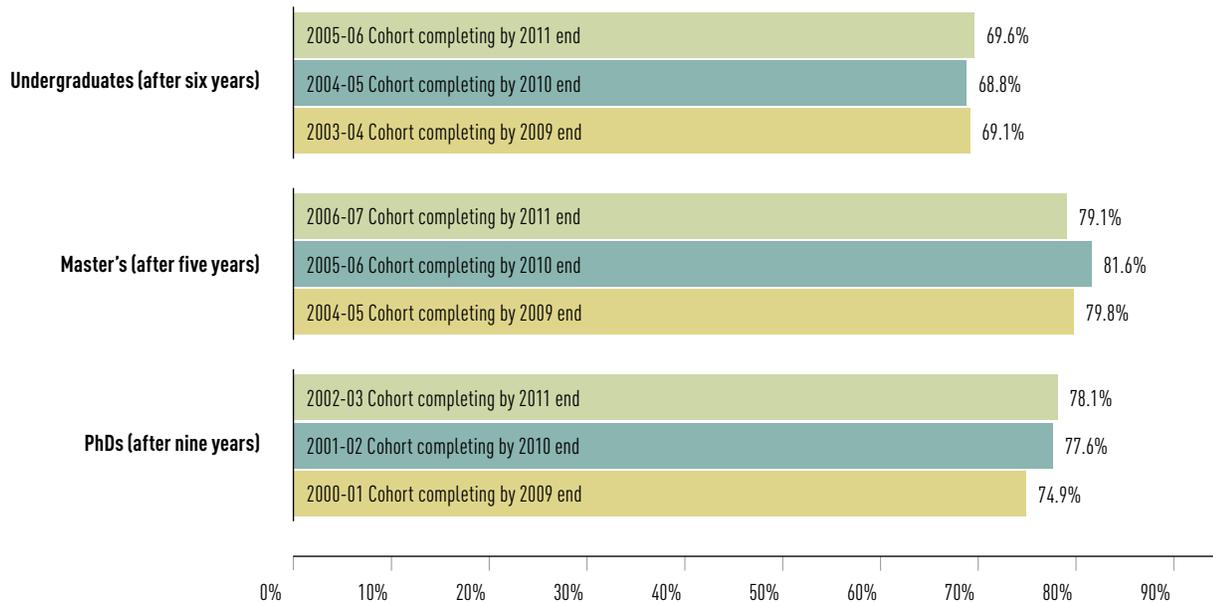
Source: Acorn Data Warehouse.

CIP 2013 selected updates and outcomes:

- English Language Bridging Program:** In the 2013 CIP, the U of A introduced its English Language Bridging Program, which assists highly qualified prospective and admitted international students to improve their language skills and gain tools needed for success in their degree programs. Having met its planned enrolment target a year early in 2012-2013, the Bridging Program turned its focus to addressing challenges created by

rapid expansion. Plans for an international college are underway that will improve service and efficiency by co-ordinating efforts of units engaged in recruiting, admitting, and supporting international students. The international college is expected to be functional by the fall of 2014, though full implementation is likely to occur over a number of years.

FIGURE 7 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.

- *U of A+ program:* A second cohort of 68 international students entered the U of A+ program, which targets elements beyond language acquisition needed for academic success by students new to Canada.
- *ACE Mathematics for University Success Program:* In collaboration with Centre High in Edmonton, the ACE Mathematics for University Success Program pilot program was launched in 2013, with the aim of assessing and enhancing the mathematics skills of sponsored

students from Saudi Arabia and the Gulf States enrolled in the English Language Program.

English for Academic Purposes - Bridging Program Student Registrations

	2011	2012	2013
Total	817	1170	1178
Percentage of BP students within the EAP student population	67.60%	70.06%	70.54%

The Student Experience

The quality of student experience is a critical and intangible contributor to retention and completion, and a multitude of factors interact to define this experience. At the institutional level, the U of A dedicates resources to both academic and co-curricular experiences that develop the whole student, using its research, private sector, and community partnerships. The U of A also invests in internal resources for more than 400 student groups, and offers academic and personal counselling, health and wellness services, and extensive opportunities for students to participate in the collegial governance of the institution. Alumni strongly endorse these initiatives through philanthropic donations to the Annual Fund, which supports study abroad, leadership and professional development, and undergraduate research opportunities. Each of the U of A's five campuses strives to offer both residential and commuter students multiple ways and means to actively participate in campus life.

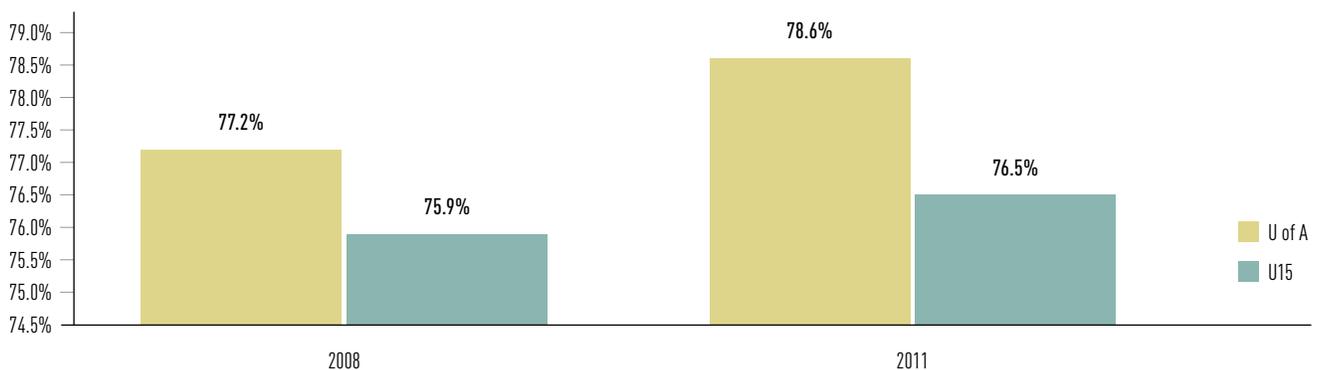
CIP 2013 selected updates and outcomes:

- *Student Mental Health and Wellness:* The U of A has begun a comprehensive, student-centred approach to student mental health and wellness. To this end, the university has been extending and improving its

mental health and wellness programs and services. The U of A has applied the three-year, \$3-million grant for student mental health from Alberta Health to extending the capacity of the mental health centre with satellite counsellor offices, increasing hours of service, establishing a community social work team, and enhancing wellness education and programming.

- *Students with Disabilities:* Post-secondary institutions have a duty to accommodate students with disabilities. The number of students requiring specialized support at the U of A increased from 920 in 2008-2009 to 1,535 in 2012-2013. Likewise, the number of students requiring exam accommodation increased from 518 in 2008-2009 to 1,136 in 2012-2013. At the same time, because of a reduction in provincial and federal accessibility funding to support exam accommodation and provide alternate format materials, a structural funding deficit for these services has emerged and remains despite restructuring and outsourcing of assessments to reduce administrative costs. A sustainable funding model to accommodate students with disabilities is a high priority in 2013-2014.

FIGURE 8 PERCENT OF SENIOR STUDENTS RATING THEIR EDUCATIONAL EXPERIENCE AS GOOD OR EXCELLENT



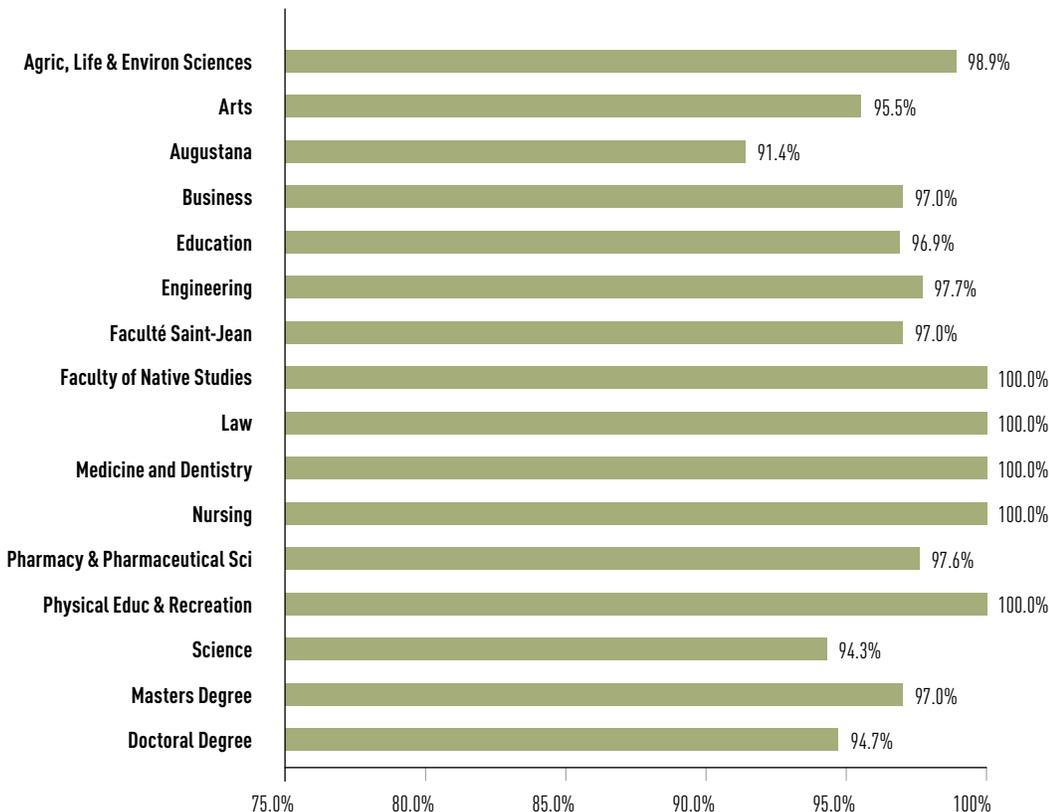
Note: Senior Student designation represents students in their fourth year, or in the year that they are normally expected to graduate. During the time period represented, U15 was referred to as G13 (Group of 13). **Source:** U of A Frequency Distribution Report, NSSE (National Survey of Student Engagement), 2008 and 2011.

- *Student Housing:* Student housing and the associated programming are important features for attracting and retaining students from across the province, nation, and world. The U of A houses only about 13 per cent of its student population in campus residences and has a target of 25 per cent. Residence life is one component that contributes to this outcome. Student residences, coupled with competitive financial aid packages, are key to attracting both rural students and Canadian students from outside of Alberta.
- *Libraries:* U of A Libraries' evolving use of on-campus space and technology is supporting changing styles of learning and academic engagement.

Employment Rates

Statistics Canada reports that labour force demand for university graduates expanded by 700,000 net positions between 2008 and 2012, despite the dramatic economic issues of that period. The high employment rates among graduates from across all disciplines at the U of A, shown in Figure 9, demonstrates the value of degrees. Refer to Appendix 5 for the numbers of 2013 U of A graduates in selected fields.

FIGURE 9 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.

The University of Alberta sustains a core foundation of baccalaureate and post-baccalaureate degrees that foster critical thinking, creativity, and flexibility. Our graduates are informed, talented, and empowered individuals ready for a variety of personal, professional, and societal challenges. Our degree programs are also constantly responding and evolving to meet current student and market needs. To this end, 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 from current programs to those with greater demand or new relevancy.

Providing Needed Credentials

The shortage of “skilled workers” is an issue around the globe, including in Canada and the United States. Different types of post-secondary institutions produce graduates with different combinations of abilities, skills, and knowledge. The full spectrum ranges from adult learning and apprenticeship programs to graduate degrees and post-graduate training. From a credentials perspective, the University of Alberta delivers nationally and internationally accredited programs for professional designations in medicine, dentistry, engineering, law, business, pharmacy, nursing, education, and library sciences. The U of A also delivers courses, certificates, diplomas, degrees, educational experiences, and professional apprenticeship opportunities (e.g., via internships, international experiences, teamwork on research and innovation initiatives) that are formal or informal requirements for other professional designations or types of professional employment, and self-employment.

CIP 2013 selected updates and outcomes:

- *BSc Radiation Therapy*: The new BSc Radiation Therapy Program, developed at the request of the Ministry of Enterprise and Advanced Education, began its pre-professional year in Fall 2013. The program collaborates with the University of Calgary, Alberta Health Services (CancerControl), the Cross Cancer Institute and the Tom Baker Cancer Centre. Though not specifically designed for Aboriginal or rural student populations, it is expected that the BSc RT program will eventually provide radiation technologists from and for these communities to ensure effective use of their expanded radiation therapy infrastructure.
- *Mining Engineering*: In 2012 and 2013, in response to industry need, enrolment in Mining Engineering was expanded by 140 FLEs. In the absence of new provincial funding, space in other Engineering programs will be reduced in 2014 to offset this change.
- *Fort McMurray MBA Program*: The Fort McMurray MBA Program, offered at regular intervals in collaboration with Keyano College, took in its planned 2013 student cohort. Employees of Syncrude, Suncor, and other Fort McMurray firms are especially interested in this program. One hundred thirteen students have graduated from this program since its inception in 1992.
- *International Alberta Teacher Certification*: A pilot project for internationally educated teachers seeking Alberta teacher certification has begun in collaboration with Alberta Education and IAE and in partnership with Edmonton Public Schools and Edmonton Catholic Schools.

- *Doctor of Pharmacy*: The post-professional Doctor of Pharmacy (PharmD) program accepted its first student cohort in September 2013. In September 2014, a new cohort of students will include practising pharmacists who wish to upgrade their skills. This is the first and only program in Canada that enables practising pharmacists to obtain this credential in only 12-14 months of full-time study.

Other initiatives to develop graduates with abilities, experience, and knowledge required for particular sectors are either in the advanced planning stages or have been submitted for approval. These include:

- integration of undergraduate medical professional programs into community settings in rural or regional clinical training sites, to support provincial and national MD workforce planning activities
- expansion of the industrial internship program for science students, intended for 2014
- new course offering in science citizenship, to foster critical analysis and understanding of science-based policy development, in the context of global challenges
- MA in Public Policy, MSc in Land Reclamation, MSc for Pathology Assistants, and MSc in Mathematical Finance

Providing Diverse and Flexible Credentials

Students elect to study within comprehensive academic and research institutions for the diverse educational environment they offer as preparation for a wide variety of professional opportunities. The University of Alberta's programs allow students to obtain post-secondary university credentials, with flexible entry and exit points. The university has well-established methods and programming that 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 in Campus Alberta partner institutions, embedded and free-standing post-baccalaureate certificates, summer institutes, bridging programs, and, potentially, pre-baccalaureate college-level programming.

Collaborative and articulation programming (in which students complete one or two years of study in their home region or country before transferring to complete and receive their degree at the U of A) 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 for a list of selected programs offered in partnership with Campus Alberta, Canadian, and international institutions.

New initiatives intended to create additional diversity, flexibility, and professional competitiveness for students include:

- two cross-disciplinary credentials (BA/BSc in Interactive Media; Certificate in Computer Game Development) in the areas of advanced digital media and interactive entertainment
- a BA in Asian Studies to create graduates who can bring a broad understanding of this key area of global engagement to a variety of professions
- a Master of Library and Information Studies, with a focus on community libraries and online delivery, serving graduate students locally and in Alberta, Canada, and beyond.
- an embedded certificate in research in the Faculty of Science that will provide professional development in this area for undergraduate Science students. For implementation in Fall 2014.

- a Certificate in International Learning formally launched in September 2013, to recognize the international achievements of undergraduate students. It integrates academic and significant cross-cultural experiences. Learning outcomes include knowledge of international and global issues and systems, the interconnectedness of these systems and of local and global issues, and the ability to apply cultural knowledge for effective interaction in local and international contexts.
- launch of a \$5-million philanthropic Endowment Campaign to support the growth and sustainability of the Institute for Sexual Minority Studies and Services
- an Honours College of Arts and Science, an initiative being explored as an enhanced academic experience for those undergraduates with strong abilities in both the sciences and the arts, and interest in broadly based communication and leadership competencies

Further details on program development in 2012 and 2013 are summarized in Appendix 7. Programs that the university is recommending for suspension or termination are also listed in Appendix 7.

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, health, and public service sectors.

Programs and Initiatives 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 Social Entrepreneurship. 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, with a goal of implementation in Fall 2014 .

The U of A invests in centres and activities that offer both students and external stakeholders ways to develop and enhance entrepreneurship skills, interest, and expertise. These include the Technology Commercialization Centre, which partners with TEC Edmonton, Alberta Innovates, and other external stakeholders; the University of Alberta Venture Catalyst Competition; and Entrepreneurship 101, a collaborative effort with the National Institute for Nanotechnology that is aimed at post-doctoral fellows. The U of A is also an institutional partner of Mitacs, which offers graduate students and post-doctoral fellows a wide variety of professional development programs to prepare them for non-academic careers. A new Venture Mentoring Service has been established with BioWare founder Ray Muzyka as founding chair. The program brings together students with alumni entrepreneur mentors, who will provide objective guidance and support with the goal of helping to launch both for-profit and non-profit ventures in the region.

A two-year pilot program focused on developing entrepreneurship among post-doctoral fellows has been funded by Alberta Innovates - Technology Futures. Up to 10 post-doctoral fellows will be selected early in 2014 for fellowships at the U of A.

A new initiative, directed at connecting international students with entrepreneurship opportunities in Alberta, will connect students with community resources and outline the critical steps needed to develop their own enterprises in the province after graduation.

Initiatives in Leadership

The U of A 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. Specific credentials include the Municipal Management and Leadership Certificate and the Leadership Development Program (both School of Business), Faculty of Education Educational Administration and Leadership (specialization degree designation, Faculty of Education).

CIP 2013 selected updates and outcomes:

- *Peter Lougheed Leadership Initiative:* In tribute to its namesake, the Peter Lougheed Leadership Initiative is a collaborative venture of the U of A and the Banff Centre founded upon the principles of excellence and access in leadership education and research. The Peter Lougheed Leadership Initiative will build on the two institutions' historical records of leadership and enrich existing strengths to create a pre-eminent leadership development program. The U of A's component of the initiative will be the Peter Lougheed Leadership College, a broad, inclusive, interdisciplinary undergraduate leadership development program that will forge leaders through formal and co-curricular learning, engagement, and mentorship.

Programming Trends

Transformation of the academic enterprise of comprehensive academic and research institutions is gaining momentum around the world as leading universities such as the University of Alberta identify and respond to emerging advanced education needs and expectations. In 2014 at the U of A, these trends include:

- increased use of e-learning in the context of innovative pedagogy, such as MOOCs, blended delivery, e-textbooks, and interactive applets and modules

- intensified competition for highly qualified Albertan and Canadian students among all Canadian universities including the U of A. The U of A recognizes that these students consider a variety of factors when selecting which post-secondary institution to attend, including the international competitiveness of an institution's degree, reputation for quality student experiences (including research, co-op, internship, and international study opportunities), and residential living availability.
- growth of the Community Service-Learning program, which has doubled in size each year since introduced 10 years ago, widening the scope of CSL into a greater variety of disciplines and degree programs on U of A campuses
- development of professional skills for undergraduate and graduate students, need for embedded and free-standing certificate programs for specialized knowledge and skills, and continuing professional education
- establishment of leadership programs in the faculties of Business, Augustana, and Arts, and in partnership with the Banff Centre with the launch of the Peter Lougheed Leadership Initiative
- current demand from students and labour markets for the Bachelor of Science education (engineering, environmental, kinesiology, and general), and rising admissions averages to manage enrolment and sustain quality
- increased need for health sciences distributed-education programs to expand into other urban and rural Alberta communities
- deepened demand for and delivery of undergraduate experiential, internship, work experience, and co-op programming, in both domestic and international settings
- increased calls for independent and group international study opportunities (credit, non-credit)

- intensified need for international partnerships and agreements to develop dual degrees, research opportunities and relationships, and student exchanges in graduate-level studies
- increased student demand for programming with flexible delivery options, such as online master's, PhDs, and continuing professional development programs for students needing or preferring to stay in their own communities or study off campus (e.g., Library and Information Sciences, Native Studies, Nursing)
- ongoing need for programs to work in partnership with industry to develop employees' and executives' skills
- requirement to meet the increasingly demanding professional program accreditation standards
- increased requests for faster tracks to degree completion for professional and graduate research programs
- increased demand for course-based master's programming, especially directed at professional development
- heightened demand for specialized education to facilitate entry into professions in Canada for immigrant professionals who were educated outside of Canada
- opportunities to upgrade degree credentials for experienced professionals
- requirement to prepare Alberta's students to work as globally fluent professionals to lead Alberta's public and private sectors and to connect Alberta to the world
- necessity for flexible and diverse credentials that increase competence and opportunities for business startups, self-employment, and new sector development in Alberta and Canada
- increased need for post-baccalaureate, continuing education for professionals coming from or returning to rural and Aboriginal communities and small- to medium-sized, fast-growing cities (e.g., Fort McMurray, Grande Prairie)

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 Innovation and Advanced Education is to ensure a dynamic and innovative post-secondary system that maximizes and leverages expertise and resources across institutions. The University of Alberta continues to lead or participate in cross-institutional initiatives, programs, and resource sharing for both academic and administrative enhancements and efficiencies. For example, U of A Libraries administers the Lois Hole Campus Alberta Digital Library for the province's post-secondary libraries.

In the academic realm, the U of A continually develops and enhances programming partnerships with Campus Alberta institutions within the CARI sector as well as the other five post-secondary sectors. Programs and initiatives, already described, that engage or occur in rural or Aboriginal communities are developed and delivered in partnership with regional colleges. Appendix 6 presents the full suite of U of A academic programming collaborations.

CIP 2013 selected updates and outcomes:

- *Audit Committee Training Program:* The audit committee training program (School of Business) was offered twice in 2013. Participants included Bow Valley College, Concordia University College of Alberta, Grande Prairie Regional College, MacEwan University, Lakeland College, Lethbridge College, Medicine Hat College, Mount Royal University, NAIT, NorQuest College,

Northern Lakes College, Olds College, Portage College, SAIT Polytechnic, University of Calgary, University of Lethbridge, and Alberta College of Art and Design.

- *Northern Systems Major:* Approval was granted by Innovation and Advanced Education (IAE) for a new Northern Systems major within the U of A's Environmental and Conservation Sciences degree to be offered in collaboration with Native Studies and Yukon College. This major is expected to be launched September 2014 subject to budget constraints.
- *Student Mental Health Initiative Update:* At the request of the provost, an internal study on student mental health issues was conducted and completed. The report led to significant new provincial investment in student mental health initiatives at the University of Calgary and University of Lethbridge in addition to the U of A.
- *Information Technology:* The learning management system was fully replaced with a single LMS rather than multiple systems on multiple platforms. A collaboration with Athabasca University and NAIT was struck to consolidate LMS infrastructure among the institutions and provide for service efficiency. Production support for the LMS was then transferred to Cybera and the infrastructure is now located in their data centres in Kelowna and Calgary.

- *Harmonizing Provincial Health Research Ethics*: On November 29, 2013, the vice-president (research) at the U of A signed a Provincial Health Research Ethics Harmonization Agreement. This followed long-term negotiations with government officials and legal advisers from Alberta Health, and representatives from Alberta Innovates – Health Solutions, Alberta Health Services, and the University of Calgary to harmonize health research ethics across Alberta, as requested by the Minister of Health. An Information System (PHREIS) Charter intended to enable the aggregation and analysis of data from the University of Alberta REMO system and the University of Calgary IRISS system was signed earlier in the fall. Two remaining agreements on data sharing and governance are in the final stages of approval.

National Collaborations

The University of Alberta 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 the Mathematical Sciences (PIMS); SNOLAB (neutrino physics, with expansion into studies within seismology and geophysics); TRIUMF (subatomic physics); WestGrid (supercomputing resources); Canadian Light Source (synchrotron research); and more recently, the IBM-Alberta

Centre for Advanced Studies (health informatics). 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 \$3.2 million in 2012-2013 and has applied for renewal of funding via Alberta Innovation and Advanced Education for 2013-2014. 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 reaches beyond Canada's borders to take its place among globally engaged institutions and connects Alberta capacity to 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 steadily over the past three years. Research funding from foreign sources shows a large increase over last year. Shared credentials and degrees with top-tier international partners have been put in place, and international industry 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 objectives.

At the same time, the U of A aims to have at least 20 per cent of the undergraduate graduating class participate in an education abroad experience. In 2012-13, 1,145 students participated in education abroad experiences in

40 countries. Of these, 994 were undergraduate students representing approximately 15 per cent of the graduating undergraduate class.

The need for scholarship funding for both international and Alberta students was identified as a priority in CIP 2012. To ensure that Alberta students can afford education abroad experiences, dedicated fundraising efforts are underway in this area.

CIP 2013 selected updates and outcomes:

- *Alberta Abroad:* The U of A managed the recruitment, selection, placement, and monitoring of participants from across the province for the Alberta Abroad initiative, an externship program launched by the Government of Alberta in 2013 that will annually see up to 40 recent Alberta post-secondary graduates placed in international organizations for work placements of up to one year.
- *International Emerging Market Strategy:* The U of A continued the International Emerging Market Strategy (2012-2018) aimed at growing new student markets with high growth potential in Brazil, Chile, Kuwait, Tanzania, Kenya, UAE, Malaysia, Vietnam, Indonesia, and Singapore.
- *COLCIENCIAS AND CONICYT:* The U of A initiated new partnerships with COLCIENCIAS (the Administrative Department of Science, Technology, and Innovation of the Government of Colombia) and CONICYT (National Commission for Scientific and Technological Research in Chile) through the CALDO consortium. Both agencies annually sponsor hundreds of graduate students to study overseas.

- *University of Alberta Research Experience (UARE) Program:* In 2013-2014, 87 undergraduate students from top international universities are being placed in research internships at the U of A. The goal of the program is to recruit top students—either UARE participants themselves or those they influence on their return home—to the U of A for graduate studies. The goal for 2014-2015 is to place 100 students. The Canadian Embassy in Washington has identified UARE as a model for enhancing education collaboration. Key U of A partners, such as the University of Wisconsin-Madison, seek to further their relationship with the U of A by securing research placements for their students.
- *CALDO:* Responding to demand from other Canadian universities for membership, the U of A again led the expansion of CALDO to include up to 12 of the U15 institutions. This development will enhance the ability of CALDO to negotiate and build programs with key governments around the world that have significant scholarship programs to send students to Canada.

Other strategic initiatives and outcomes related to internationalization objectives are presented on pages 81-82.

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 when an emerging opportunity also meets 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. Here, our activities include curriculum development for fine arts, arts administration, nursing, health sciences, medical training, and teacher

education, as well as assistance in the development of an Aga Khan campus in Tanzania.

China

Since the 1990s, the U of A has 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.

CIP 2013 selected updates and outcomes:

- *The 7th National PhD Students Conference on Environmental Sciences and Engineering at Tsinghua University:* The University of Alberta facilitated this October 2013 conference, which included presentations from 13 PhD students from five Canadian universities, among them four U of A PhD students.
- *Medical Sciences Graduate Program (MSGP) – Shantou University:* There are currently six PhD students registered in the MSGP-Shantou program, a joint PhD program between the U of A and Shantou University Medical College; six to nine new students are expected to register in the program in September 2014. A dual, four-year MD program with Shantou is now under discussion.
- *U of A Master 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. The first cohort of 29 students enrolled in Fall 2013.

- *Collaboration with Chinese Partners:* The U of A signed an MOU with Tsinghua University, Fudan University, Pasteur Institute (Shanghai) and Shanghai Medical College in December 2012. This MOU allowed the Chinese partners to apply for \$50 million from their Ministry of Education to fund collaboration among the four signatories to the MOU.

Germany

The U of A'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-Universität and Leipzig University, and the establishment of the sixth worldwide German Canadian Centre for Innovation and Research at the U of A. LMU and the U of A offer a jointly delivered doctoral degree program. The Faculty of Medicine & Dentistry continues bilateral exchanges with the University of Munich. Early-stage discussions have begun with German officials to explore attracting the Fraunhofer Institute and Leibniz Association to the U of A.

CIP 2013 selected updates and outcomes:

- *Ludwig-Maximilians Universität:* Dual-degree agreements have been reached with LMU in computing science, Earth and atmospheric sciences, and mathematical sciences.
- *e3 in Berlin:* Twenty-two U of A undergraduates enrolled in this program (formerly the "Berlin Summer School"), which started in 2013 and offers three education abroad

experiences: university credits in German language, a six- to eight-week internship placement, and an academic capstone course.

- *Alberta Saxony Intercultural Internship Alliance:* The U of A successfully secured Phase II of the Alberta Saxony Intercultural Internship Alliance (ASiiA) on behalf of Campus Alberta. Funded by the Government of Alberta, Phase II will see 50 students each year (25 from Alberta and 25 from Saxony) participating in research and industry internships in Alberta and Saxony.
- *Helmholtz-Alberta Initiative:* The Helmholtz-Alberta Initiative has added an Infectious Disease Research Program (HAI-IDR) to its array of research activities. The Research Consortium Agreement was signed in Germany at the Helmholtz Centre for Infection Research in Braunschweig. The main goal of HAI-IDR is to help develop preventative vaccines and treatments of liver disease caused by hepatitis B and C viruses. Funding in the amount of €600,000 per year for three years from the Helmholtz Association for the work of the German research partner has been approved. The funding for the Canadian research activities at the U of A is currently covered by the Li Ka Shing Institute but the funding is still under negotiation and final approval is pending. The submitted funding request for the U of A research portion is in the amount of \$950,000 per year for three years. Proposals to further expand HAI collaborations have been submitted in the areas of Terrestrial Ecosystem and Resource Informatics (HAI-TERI), a collaboration between the U of A Faculty of Science and German Aerospace Center DLR, and Neurodegenerative Disease (HAI-NDR) in collaboration between the university's Centre for Prions and Prion Folding Diseases and the German Centre for Neurodegenerative Diseases DZNE. Both German partner institutions are part of the Helmholtz Association of German Research Centres network.

Brazil

In 2010, the U of A identified Brazil as a strategic area for partnership. 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 program, which is sending 75,000 fully funded students to study abroad.

CIP 2013 selected updates and outcomes:

- *Brazil's Science Without Borders*: Through CALDO's participation in Brazil's Science Without Borders scholarship calls, the U of A enrolled 98 fully sponsored graduate students in September 2013, with another 19 expected in January 2014. This adds to the inaugural enrolment of 61 SWB students in September 2012. These students are receiving doctoral training in the faculties of Arts, Augustana, Engineering and Science.
- *e3 in Brazil*: The e3 program launched in Germany in 2013 will be expanded to Brazil in 2014.
- *Tropi-Dry*: Tropi-Dry, a U of A-led collaborative research initiative with Mexico, Costa Rica, and Brazil, received \$900,000 from the Inter-American Institute for Global Change to continue research in Latin America until 2018. This initiative has provided student training, seeded technology innovations, and led to national policy changes during its first funding cycle.

- *Science Agreements*: The U of A is initiating joint degree agreements with the Federal University of Minas Gerais (Brazil), Technische Universität München (Germany), and University of Campinas (Brazil) in science disciplines.

India

In 2009, President Samarasekera launched accelerated strategic outreach in India, pursuing 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.

CIP 2013 selected updates and outcomes:

- *IC-IMPACTS*: The federally funded India-Canada Centre for Innovative Multidisciplinary Partnerships to Accelerate Community Transformation and Sustainability hosted its first industry partnership forum in India in 2013, a key milestone. Work has commenced on three joint projects with India collaborators at IIT Roorkee (IIT-R) and other institutions in India: a nanotechnology-enabled device for detection of harmful bacteria in drinking water, the conversion of masonry water infrastructure, and a handheld water pathogen detector.
- *IIT Roorkee and U of A Libraries*: At the invitation of the president of IIT-R, five librarians from the U of A visited IIT-R in November 2013 for a weeklong series of activities with library staff, faculty, and graduate students.

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 advance 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.

CIP 2013 selected updates and outcomes:

- *Energy Strategy Program:* The U of A's Executive Education program is finalizing an Energy Strategy program in partnership with the McCombs Business School at the University of Austin, Texas, which is expected to attract international oil and gas middle-level managers.
- *Law Partnership with University of Oklahoma:* Discussions with the College of Law at the University of Oklahoma have begun, to define a graduate student exchange in the cross-border energy law field, which is an area of strength for the U of Oklahoma.

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 U of A also offers credentials to enhance students' knowledge of these issues, including a certificate in globalization and governance, a bachelor of commerce major in international business, an MBA in international business, and various language programs.

CIP 2013 selected updates and outcomes:

- *International Baccalaureate Program:* The Faculty of Education developed a new International Master of Education in the International Baccalaureate Program, in collaboration with International Baccalaureate Global Organization (cost recovery).
- *International Professional Education:* The U of A continued to pursue 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.
- *Global Academic Leadership Development (GALD):* GALD was delivered to two cohorts of Chinese university administrators in 2013, allowing U of A to share its administrative expertise and best practices while generating revenue for the institution. The program was first delivered in 2011-12 and is expected to expand in 2014.



PROVIDING SOLUTIONS

IN 2007, WHEN CANADA'S CHALK RIVER REACTOR EXPERIENCED AN UNEXPECTED AND LENGTHY SHUTDOWN, ATTENTION WAS DRAWN TO THE FACT THAT CANADA IS ONE OF THE WORLD'S PRIMARY SUPPLIERS OF MEDICAL ISOTOPES—TINY NUCLEAR PARTICLES ESSENTIAL TO THE DIAGNOSES OF CANCERS AND OTHER DISEASES OF THE HEART AND BRAIN.

During Chalk River's shutdown, the global supply of medical isotopes was seriously in jeopardy. The incident heightened calls to seek an alternative supply before the aging Chalk River Reactor is fully decommissioned in 2016. With the construction and launch of the Medical Isotope and Cyclotron Facility in 2013, the University of Alberta has provided an answer.

Located on the university's South Campus, the Medical Isotope and Cyclotron Facility provides an innovative solution to the medical isotope shortage and supply chain issue. Operating with support from the governments of Canada and Alberta, the cyclotron produces non-nuclear, clinical-quality technetium-99m, an isotope used for 80 per cent of nuclear medicine diagnostic procedures. Not

dependent on a nuclear reactor, the cost-effective cyclotron technology is proven to be safe and reliable for patients.

Once fully operational in 2016, the Medical Isotope and Cyclotron Facility will not only advance the health of Albertans by ensuring a steady supply of isotopes, but also revolutionize the manufacture of medical isotopes for routine clinical use. Guided by the leadership of world-renowned oncologist Sandy McEwan, professor and chair of oncology at the U of A, the technology pioneered at the U of A with partner Advanced Cyclotron Systems Inc. is also being used by the Centre Hospitalier Universitaire de Sherbrooke. Additional cyclotrons are planned for Saskatoon and Thunder Bay.

OUTCOMES AND BENEFITS:

- Isotopes are used to complete roughly 60 million diagnostic procedures annually around the world, including almost two million in Canada.
- The U of A's cyclotron facility will help ensure Canada has a reliable supply of medical isotopes once the Chalk River reactor closes in 2016. About 15 to 16 cyclotrons of this kind located across the country could supply 95 per cent of the Canadian population with all the technetium-99m needed for medical diagnostic imaging.
- The non-nuclear technology pioneered here reduces radioactive waste and helps Canada meet nuclear non-proliferation goals.
- The final product is created from start to finish here in Alberta. Nuclear reactors like Chalk River produce a substance that has to be shipped and refined at other facilities in Ottawa and Boston before being distributed to health centres in lead containers.
- The Medical Isotope and Cyclotron Facility houses a new central radiopharmacy operated by Alberta Health Services.
- The production of medical isotopes is a multi-billion-dollar international business. Worldwide growth is expected to be one to four per cent over the next 10 years.

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.

As a comprehensive academic and research institution, and as one of Alberta's two medical/doctoral institutions, the University of Alberta conducts research and offers doctoral programs across seven thematic areas: humanities and fine arts, social structures and systems, science and technology, energy, environment, food and bioresources, and health and wellness. Doctoral programs and post-doctoral training occurs in both the core disciplines and emerging cross-disciplinary fields that drive discoveries, innovation and impact in these domains. This full spectrum of inquiry positions the U of A's academy and its graduates to make the comprehensive contributions towards the scientific, social, and cultural innovations needed to support the objectives Alberta has set for itself: effective resource and environmental management, a broadened economic base, and resilient and healthy individuals and communities.

The U of A's research capacity is measured by the quality of its people and the quality of the physical, financial, and human infrastructure that enables them to have a significant impact in their fields. The U of A develops and sustains research capacity for Alberta by allocating resources for recruiting and retaining faculty members, investigators, and specialized non-academic staff; attracting and supporting graduate students and post-doctoral fellows; providing equipment, resources, and infrastructure for individual faculty as well as multi-user and multi-team activities; supporting centres, institutes, and collaborative initiatives within the institution and in partnership with other provincial, national, and international institutions; operating core research resources, facilities, and platforms for the region; and undertaking capital infrastructure development to meet the evolving needs of research and to pursue new avenues.

Assessing and Enhancing Impact

Sponsored research revenue is one metric of research quality and impact. The U of A's 2011-2012 total sponsored research funding was \$460.1 million, a decrease of 15 per cent from the 2010-2011 level of \$536 million. This is a reversal of a seven-year trend of increasing research income. The U of A currently ranks fifth among U15 Canadian universities in total sponsored research income and fourth in sponsored research income per full-time teaching faculty member. Figure 10 data show the 2010-2011 and 2011-2012 details: a \$64-million decrease in government sponsored research (which includes capital research projects); a \$17-million decrease in donation, investment, and other income for research; a \$3-million decrease in Tri-Council funding; and an increase of \$0.8 million in non-government grants and contracts.

The decrease in government sponsored research revenue is due in part to a \$26-million decline in capital projects research funding, historically included in the U of A's research revenue, and approximately a \$28-million decline in sponsored research funding received from provincial ministries and the Alberta Innovates corporations. The U of A continues to make increased Tri-Council and international funding an institutional priority, and addressing this unprecedented decline is a key focus. To this end, the Grant Assist Program has been established to enhance the quality of institutional research proposals in key national competitions. However, it is also imperative that the province play its role in funding U of A research and providing investments needed to leverage national and international funding programs.

The awards and honours received by our faculty are a second indicator of excellence and impact. Such awards and honours reflect both the quality of the professors recruited and retained, and the quality of the environment and opportunities that the U of A provides. The U of A benchmarks its progress in recruiting and supporting exceptional scholars, using faculty awards and honours as

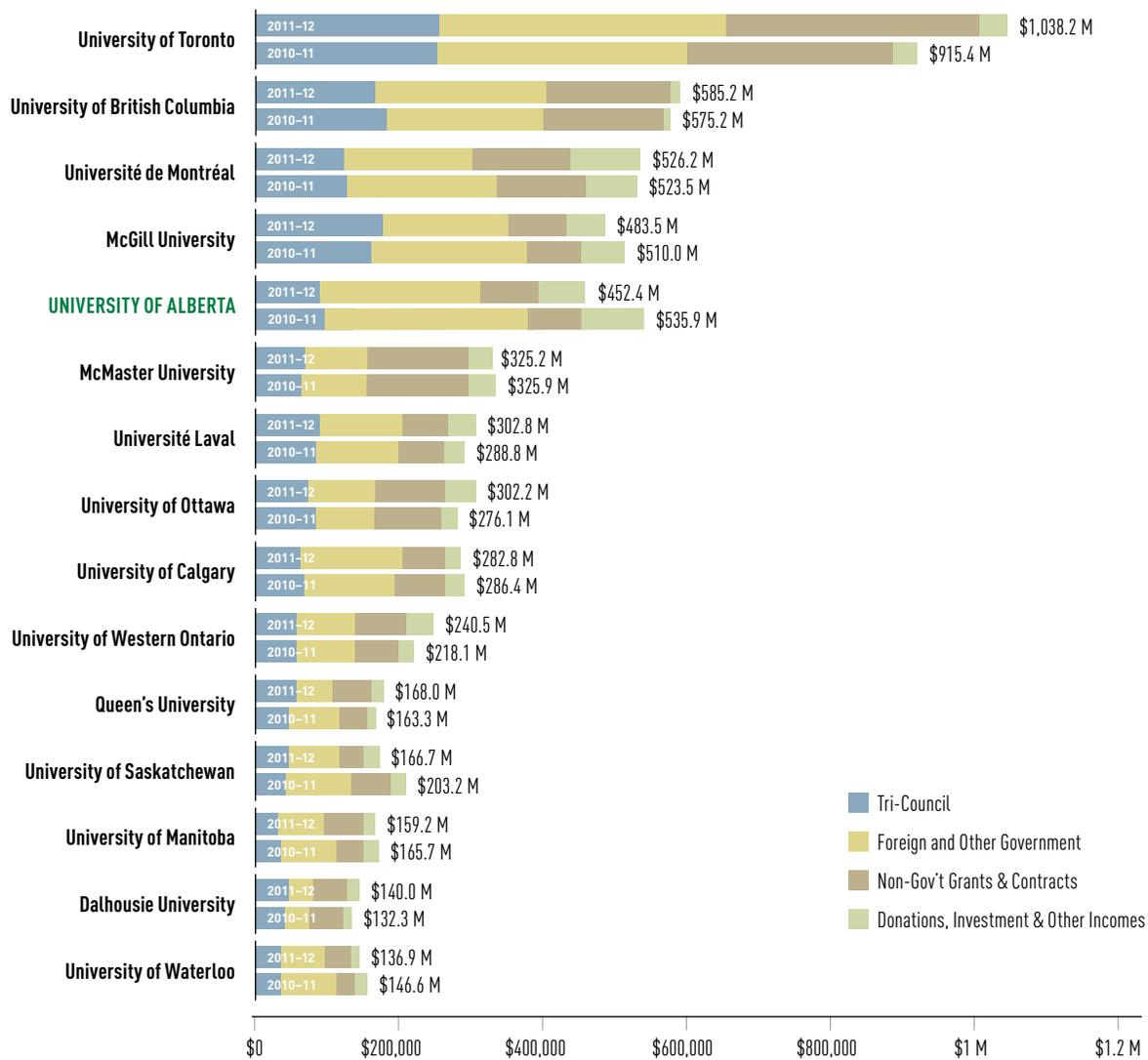
a proxy against a target peer group of Canadian and U.S. institutions. The U of A works to ensure that achievements of its professoriate are recognized by distinguished groups, and celebrates that recognition when it occurs.

U of A faculty received several notable national and international research awards over the past year. Examples include Jeffry Pelletier, recipient of the Alexander von Humboldt Foundation's Anneliese Maier Research Prize, and Robert Nichols, recipient of a Humboldt research fellowship; Michael Houghton, awarded the Canada Gairdner International Award (declined for personal reasons); Cindy Jardine, Canada-U.S. Fulbright Award recipient, and Julianne Gibbs-Davis and John Davis, recipients of Sloan Foundation Research Fellowships. Marcello Tonelli received a CIHR-Canadian Medical Association Journal award for discoveries and innovations with the biggest impact on the health of people in Canada and around the world, and Lorne Babiuk and Witold Pedrycz were awarded Canada Council for the Arts Killam Prizes for career research achievements. Four faculty members were elected as Fellows of the Royal Society of Canada, three to the Canadian Academy of Health Sciences, and one to the Agricultural Institute of Canada. Clare Drake and David Magee were inducted into the Order of Canada.

CIP 2013 selected updates and outcomes:

- *International Development Research Centre (IDRC):* The U of A is the Canadian lead for three major international projects funded by IDRC research grants totalling \$7.1 million.
- *Centre of Excellence in European Union Studies:* The European Union designated the U of A as a Centre of Excellence in European Union Studies, with funding amounting to \$450,000.

FIGURE 10 U15 SPONSORED RESEARCH INCOME BY TYPE



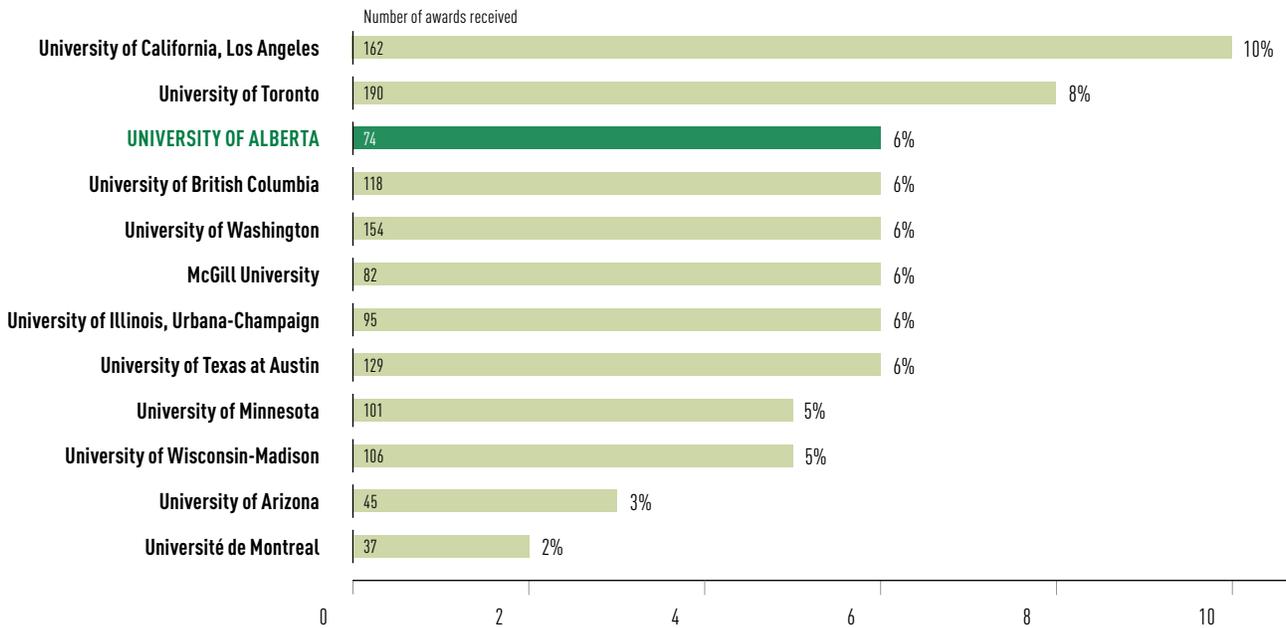
Notes: Income from Tri-Council includes: Social Sciences and Humanities Research Council; Natural Sciences and Research Council; and Canadian Institute of Health Research (CIHR). Other Government income reflects income from all government departments and agencies - grants and contracts, less Tri-Council 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. Université de Montréal includes École Polytechnique de Montréal and HEC Montréal. **Sources:** Canadian Association of University Business Officers (CAUBO): Financial Information of Universities and Colleges 2010-2011 and 2011-2012, Report 3.1.

- *The Alberta Land Institute (ALI)*: ALI was officially launched in Calgary in September of 2012. Support for ALI was solidified in 2012-2013 and 2013-2014 with the securing of an additional \$1.1 million. Further philanthropic opportunities were also identified.
- *Oxford Medical School*: Oxford Medical School is partnering with the U of A's Faculty of Medicine & Dentistry on a joint research fellowship/PhD training program in diabetes and transplantation sciences.

- *Agricultural Policy Research Networks*: The U of A is home to four nationally funded agricultural policy research networks in Canada.

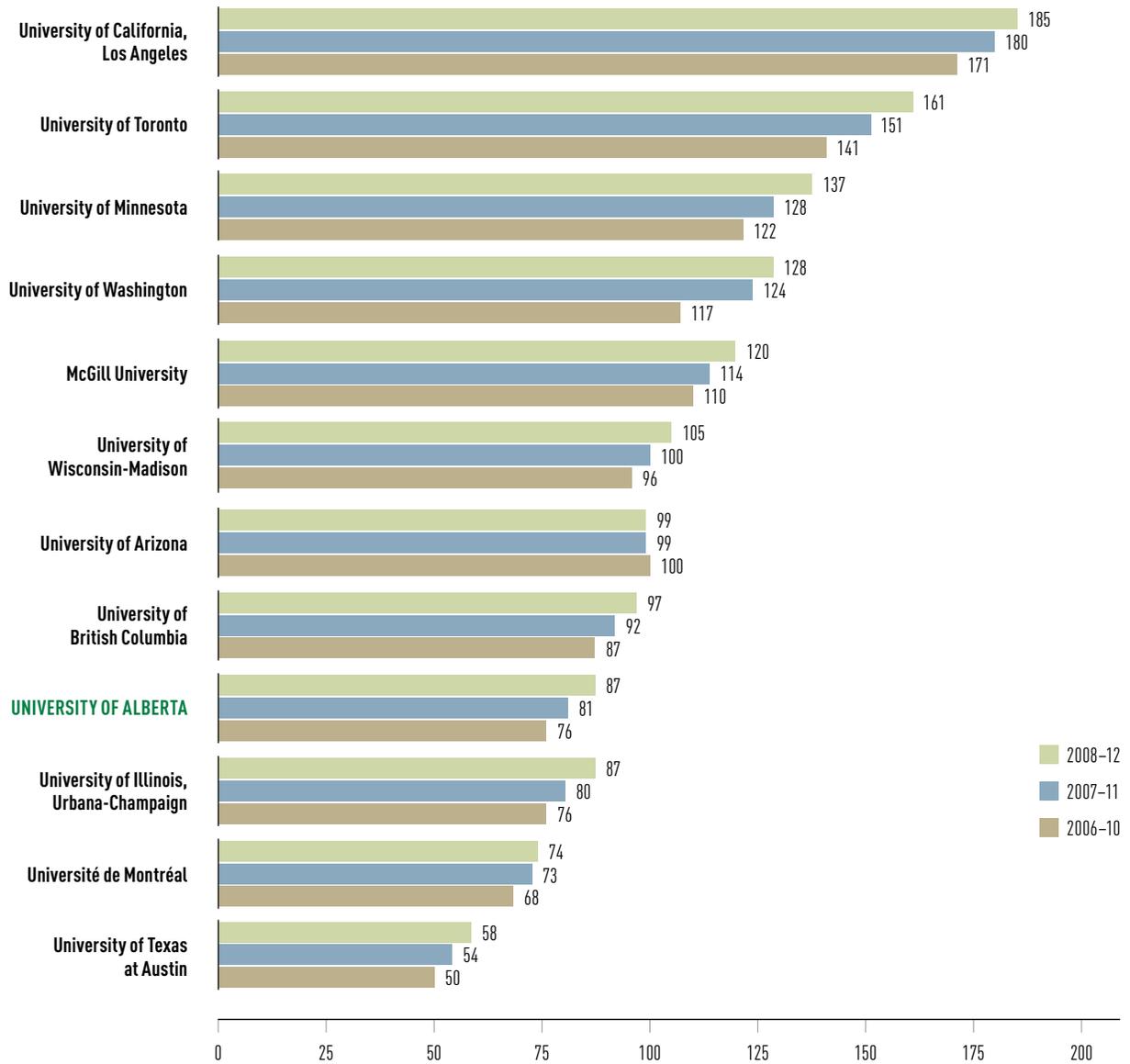
Citations of research published by faculty and benchmarked against comparator research universities are another indicator of excellence and impact.

FIGURE 11 PERCENTAGE OF FULL-TIME FACULTY RECEIVING SELECTED AWARDS AND HONOURS, UNIVERSITY OF ALBERTA AND SELECTED PEERS, 2001 TO 2011



Note: Data are the most recent available. 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.

FIGURE 12 CITATIONS IN ALL FIELDS PER AVERAGE FULL-TIME FACULTY, UNIVERSITY OF ALBERTA AND SELECTED PEERS



Notes: Staff figures represent averages for the reported years. 2012-13 staff figures are not available. Historical citation data has been updated from previous versions. Data is accurate as of August 2, 2013. **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 and U15 data exchange. 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 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 possess, professors can pursue large-scale, visionary, and sometimes risky research agendas—agendas that may 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, who in turn are a key mechanism for knowledge transfer, thereby greatly increasing the U of A's capacity to pursue projects with government, local communities, and Alberta's private sector. The contribution of these research teams' energy and intellectual capacity to the U of A's learning, teaching, and discovery mandate—and to the region as a whole—cannot be overstated.

Training post-doctoral fellows is a core mandate of a medical/doctoral research university, and PDFs are essential team members in the university's discovery and innovation activities. 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. Direct and indirect costs associated with PDFs are not included in the university's Campus Alberta Grant, because these individuals are not counted as either staff FLEs or student FLEs. The majority of post-doctoral fellow support comes from external sources. The U of A continues to build partnerships and opportunities that will deliver direct support to increase the post-doctoral fellow cohort from 700 to 1,000. However, the indirect costs of PDF training are not reflected in the U of A's operating budget, creating a challenge for achieving these targets.

CIP 2013 selected updates and outcomes:

- *Graduate Programming Quality*: An internal review and assessment of institutional strategies and operations for graduate education structures, systems, and programming was completed. From the recommendations, a number of changes have been implemented, including the establishment of a framework for graduate program quality, and more efficient oversight procedures for various graduate student matters were delegated to the departments or faculties.

Strategic Issues and Priorities

- As outlined in the access and enrolment section, the U of A will continue to reallocate positions from undergraduate to graduate programs where demand and opportunity emerge, while continuing to ensure that the academy meets the demand for its excellent undergraduate programming. This objective is challenged by fiscal constraints and funding models that do not capture the full cost of post-graduate medical/doctoral training.
- The U of A is exploring the inclusion of multi-year financial support packages with offers of admission to graduate programs, to increase the acceptance rate of our offers to top applicants. The U of A will honour commitments to current graduate students, but large faculties anticipate a significant cut in graduate admissions for 2014, with some disciplines accepting no new graduate students.
- Two objectives hinge directly on the U of A's ability to provide competitive graduate student support: the recruitment of the best domestic and international graduate students, particularly in competition with other Canadian institutions, and the ability to sustain graduate training in areas of institutional strength across all disciplines.
- Programming initiatives to prepare graduate students for non-academic careers remains a priority, subject to the availability of internal resources at the department and

faculty level to design and execute such initiatives. While the U of A continues to work with external providers of generic professional development seminars, there is a pressing demand from graduate students for training and recognized credentials that will enhance their academic knowledge and create professional capacity for the public and private sectors. A working group has been struck to develop solutions to these issues.

- The U of A continues with organizational transformation of graduate admissions and oversight, as followup on the 2012-2013 assessment.

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 research 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.

There are other institutional core facilities (e.g., libraries, animal care facilities, research stations, specialized instrumentation units) that evolve not directly through infrastructure programs such as the Canada Foundation for Innovation, 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 ongoing operation of these broadly used facilities is a substantial operating expense for the university, one that is not covered by indirect costs of research or external research funding. The effective and competitive oversight of these resources ranges from the need for upgraded research computing infrastructure

to the need for sophisticated biosafety hazard facilities to full-time staff to support advanced biomedical and translational health research.

Canada, like other nations, has established federal programs, such as the Canada Foundation for Innovation, to ensure that it has globally competitive research and innovation infrastructure. Much of this infrastructure resides within Canada's research-intensive universities, where exceptionally skilled graduates are trained and 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 and to date, we have been very successful in securing federal funding to obtain globally competitive research infrastructure. Federal funding agencies follow a strategy of partial, short-term operating funding, with the expectation that the receiver of infrastructure (i.e., the universities and their respective provinces) will assume responsibility for direct operating costs beyond this period. With success in acquiring such infrastructure, the university indirectly adopts responsibility for its long-term operation through highly specialized staff and other sustainability requirements.

Strategies

The U of A will work with the Ministry of Innovation and Advanced Education to develop a transformed funding and financial model that directly accommodates the direct operating costs of the institution's research enterprise and the platforms it offers for Alberta's advanced research, innovation, and technical services needs.

To be more efficient with limited internal resources, the U of A will continue to pursue strategies that lead to the consolidation of infrastructure capacity and human skills around core facilities, in cases where it makes sense to do so.

Faculties and departments will re-evaluate their business models and fee structures for external client use of facilities and services that fall outside of collaborative research agreements.

Advancing Alberta's Innovation Ecosystem

The quality and diversity of the University of Alberta's research capacity—consisting of globally competitive people and a globally competitive environment for discovery and creative activities—is one contributor to Alberta's innovation ecosystem. Knowledge transfer and commercialization initiatives remain institutional priorities. The U of A will continue to seek and develop long-term collaborations with municipal, provincial, national, and international partners; develop entrepreneurship and internship programs for students and professional development programs for Alberta's private sector; and aggressively pursue national and international funds to ensure that Alberta has the advanced infrastructure platforms required for innovation. The U of A will also support and champion opportunities that leverage its existing research capacity in ways that will support new economic engines for the province.

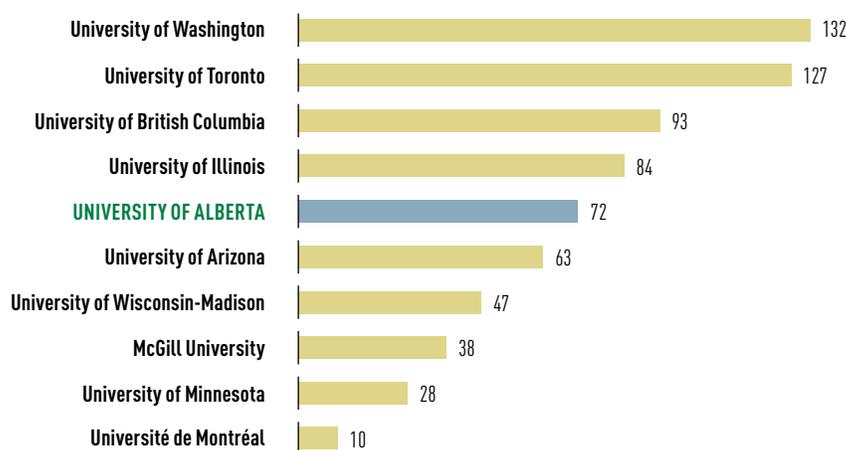
Key updates and outcomes since the 2013 CIP include the following.

- *TEC Edmonton*: In 2013, TEC Edmonton was named the 17th best university business incubator in the world—and the top Canadian incubator—by the University Business Incubator Index, a global index assessing and benchmarking the performance and best practices

of university business incubators. This assessment is based on 10 benchmark indicators and 50 performance indicators, including value delivered to the local economy, value to startup company clients, and post-incubator performance of startup companies.

- *Medical Isotope and Cyclotron Facility*: In 2013, the U of A opened the Medical Isotope and Cyclotron Facility at the south campus. This facility houses a \$28-million cyclotron research and production facility that will produce clinical-quality technetium-99m, an important isotope used for 80 per cent of nuclear medicine diagnostic procedures for patients across Alberta and Canada with cancer, cardiac, neurological and other diseases. It is expected that the facility will be in full production in the second quarter of 2014, a development that will help ensure that the country has a reliable supply of medical isotopes to fill the void resulting from the 2016 closure of the Chalk River reactor.
- *Smart City Alliance*: The U of A has joined St. Albert, IBM, Cisco and NAIT to advance the "Smart City" perspective in our region. The short-term objective is to enable communities and multi-sector partners to recognize opportunities for applying advanced communications technology and data analytics to identify and solve basic

FIGURE 13 CONTINUING SPINOFFS 1991-2012



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.

urban issues. The long-term objective is to accelerate the application of Smart City solutions and reduce time to market, where possible, of related technology applications. This alliance will leverage the U of A's activities in science and technology (advanced urban engineering systems, computing science) and in social structures and systems (city-region development, urban planning).

- *Metabolomics*: The U of A remains very interested in pursuing the provincial Metabolomics Initiative submitted to government.

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 U of A's activities in its seven thematic areas, and their alignment with Alberta's priorities. Appendix 8 presents details on areas of research capacity, including the federally, provincially, and privately funded research chairs; strategies for enhanced capacity and outcomes; intended areas for infrastructure capacity investment; and research capacity funding gaps.

HUMANITIES AND FINE ARTS

Humanities and fine arts scholarship and creative activity 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.

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 topics to be framed and understood within the 21st-century context of increasing globalization, expanding digital information technologies, and shifting social and cultural values. Strong capacity exists in the history and culture of key international regions, including China, Japan, Ukraine, Africa, and central Europe, as well as of Canada's First Nations. Excellence in humanities computing spans the study and dissemination of philosophy, literature, women's and gender studies, gaming, and fine arts. Humanities research capacity also anchors some of the institution's new international activities. With the 2013 award of a Centre of Excellence in European Union Studies by the European Commission, the U of A is well positioned to advance social, cultural, and economic opportunities that emerge through new relationships between Canada and the EU. Humanities scholars also collaborate with Alberta ministries on a number of cross-disciplinary projects explore the intersection of arts and culture, community engagement, health, environment, and education.

Fine arts scholarship and creative activity at the U of A enriches the cultural environment of Alberta's capital region, and drives the cultural and artistic economic sectors. The university's investment in this area includes the Timms Centre for the Arts, the Camrose Performing Arts Centre, FAB Gallery, and Convocation Hall. The U of A also contributes through ongoing interactions with symphonies, theatre companies, the Edmonton Fringe Festival, the Works, and the Art Gallery of Alberta. There will be continued investment in partnerships with the City of Edmonton and the Edmonton Arts Council, and in activities undertaken within centres and institutes focused on francophone heritage, central and eastern European cultures, China, and Japan. Securing enhanced facilities for music performance remains an institutional priority.

Social Structures and Systems

Social sciences advance 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 a strategic priority to foster collaborations with all of Alberta's ministries, the public sector, and non-governmental organizations to enhance the quality of life in our society.

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. In 2013, the U of A recruited an international scholar to hold the CAIP Research Chair in Innovation Policy and Technology Translation, with special focus on water and energy. 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. Establishing new facilities to support research and teaching in finance and accounting, organizational behaviour, corporate structures, and other areas of business is an institutional priority.

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.

Research capacity in social theory and socio-legal studies has been enhanced through a Canada Research Chair appointment. Health law and science policy continues as an institutional strength and contribution to federal initiatives on personalized medicine technologies.

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.

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.

The U of A will continue to partner on initiatives in data analytics, identified as a strategic priority for Alberta

Innovates - Technology Futures. The IBM-Alberta Center for Advanced Studies connects U of A researchers and industrial partners to advanced data analytics research for health analytics, Earth observation sciences, resource geosciences, 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) supports 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 enhancing 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, and U of A researchers, graduate students, and post-doctoral fellows continue to work with those ministries on a number of initiatives.

ENERGY

The U of A’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.

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. The integration of disciplines to advance discovery and innovation for sustainable energy is a key strength at the U of A. This is reflected in deep and broad capacity in chemical engineering; materials sciences; chemistry, nanoscience, and molecular biology; legal and economic policy analysis; land use impact; and advanced ICT. This collective capacity supports the Government of Alberta’s resource stewardship objectives, and specific challenges identified 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 policy for market-based approaches to land use, for environmental regulations, and for water use. Research capacity in energy was enhanced through recruitment of an international scientist to the Alberta CAIP Research Chair in Enhanced Geothermal Energy Systems. 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. The U of A’s Water Initiative focuses on water use and reuse in natural resource exploration and processing as one of its three thematic areas of focus.

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.

Water quality in non-urban communities is one of the three theme areas of the university’s Water Initiative. Water quality outside of urban centres affects the economic and social sustainability of Alberta’s small communities, and has an impact on recreation and tourism. This focus is driving both local and global projects that integrate the U of A’s capacity in public health and environmental chemistry, engineering, and cultural and social systems. The U of A has increased its capacity, and recruited a leading scientist from outside of Canada, through its 2013 nomination of an Alberta Innovates - Health Solutions Translational Research Chair in water and public health. Another 2013 international recruit is filling an industry-sponsored chair in water resources. 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.

Impact on Alberta. The U of A's capacity in food science, 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. The U of A is home to four nationally funded agricultural policy research networks in Canada. 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. New public and private sector research funding is accelerating the work to convert animal fats and crop seed oil into hydrocarbons, solvents and high-value chemicals. The development of a nano-enabled biomaterials program, leveraging the facilities and capacity at the National Institute for Nanotechnology, represents a significant new trajectory for Alberta's bio-economy.

Nutrigenomics and plant genetics research are 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. The future of Alberta's water supply is one of the three thematic areas of focus within the university's Water Initiative. 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 supports Alberta's decision-makers in developing 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.

Impact on Alberta. The U of A has developed 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. Translational research and knowledge transfer is supported by key partnerships with Alberta Health Services; a large complement of clinical research staff; expertise in social, cultural, environmental, and population health influences on individual and community health; biomedical engineering; 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.

U of A researchers and facilities advance initiatives and objectives set by Alberta Innovates - Health Solutions and Alberta Health Services, from improved health delivery systems to personalized medicine to Strategic Clinical Networks (SCNs). U of A faculty members are serving as medical directors or scientific directors of several of the SCNs within Alberta Health Services. In 2013, research chairs established in conjunction with Capital Health and AIHS increased capacity in the following areas of provincial priority and institutional strength: transplantation, psychiatry, cardiac sciences, primary care research, family medicine, oncology, and women's health research. 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.

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.

Information and computing technologies infrastructure at the University of Alberta is complex. It includes networks that connect buildings and campuses, wireless services, and additional specialized local networks. This infrastructure is the foundation of the U of A's digital environment, supporting academic, research, and administrative requirements, and facilitating administrative efficiency and innovation.

Advances in information and communications technology, especially in the arena of mobile computing, continue to transform learning environments. The U of A has offered innovative and popular digitally supported programs off campus for some time, specifically physical therapy satellite programs in Calgary and Camrose. These programs were initiated to help deal with the supply and demand for therapists that have occurred in rural and southern Alberta. Individual units across campus have both developed and deployed advanced teaching and learning technologies for specific student audiences and outcomes, notably in medicine.

In 2012, the U of A began to engage more aggressively at the institutional level 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), business (case study analysis, market trends, analytics) and preservation (research data management, digital preservation). These are the areas in which the U of A is expanding its engagement in the digital environment.

CIP 2013 selected updates and outcomes:

- *Dino 101*: The world's first online paleobiology course was launched in 2013 and lauded in international media as one of the best examples of sophisticated, interactive MOOCs that currently exists. More than 20,000 individuals have registered for Dino 101. This course was also delivered internally as a fully online version and as a blended delivery version of a 200-level science course to 450 and 50 students, respectively. This work provides important benchmark data on high-quality online learning investments.
- *Synchronous Learning Environment*: The U of A is implementing a cross-university synchronous learning environment that allows for real-time, online instruction to support blended learning initiatives
- *Aboriginal Teacher Education Program*: The blended/online delivery version of Curriculum and Instruction in Elementary Music was delivered to the Aboriginal Teacher Education Program (ATEP) cohort in the Spring 2013 session. The implementation of music education courses to remote communities has been logistically

difficult in the past. The new blended/online version was successfully implemented and well received by students. The ability to deliver high-quality blended/online courses to very remote rural communities is critical to the future success of ATEP.

- *Education courses*: Blended delivery versions of four existing education courses were launched. Annual enrolments in these courses range from 400 to more than 900.
- *Blended delivery*: Quantitative and qualitative assessment strategies are in development for all current and future blended delivery and fully online courses.

Pending the availability of resources, the U of A will complete its planned three-year development and assessment work in e-learning, and evaluate the effort in terms of learning, teaching, and efficiency outcomes.

See Appendix 10 for details on selected e-learning and digitally supported teaching and learning activities across U of A campuses.

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 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 2013 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.

Selected Outcomes

- In 2013, a U of A student received one of 10 prestigious 3M National Student Fellowships.
- Two more U of A professors received 3M National Teaching Awards in 2013: Kim Fordham Misfeldt (Augustana) and Heather Zwicker (Arts).
- The CCIS Career Centre hosted U School participants for three weeks. The U School program was initiated by the University Senate in order to introduce and connect Grade 4 through Grade 9 students to the U of A.
- Student Connect, the new Office of the Registrar student service centre, was formally launched in Summer 2013.
- A new visiting committee model for faculty review and renewal will be piloted at the U of A in 2013.
- The writing centre at Campus Saint-Jean has had an increase of approximately 15 per cent in the number of visits and number of students taking advantage of the centre.
- Dozens of the university's finest students, teachers, and researchers were recognized at the annual Celebrate! ceremony in September 2013. Those recognized include:
 - Henry Su, Engineering, winner of the President's Centenary Citation, awarded to students entering an undergraduate program from high school on the basis of superior academic performance
 - Megan Engel, Rhodes Scholar
 - Ten winners of the Vanier Canada Graduate Scholarships
 - David Percy, Law, winner of the University Cup, the highest honour bestowed on a member of the academic staff

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.

Selected Outcomes

- Provost's Fellow and professor in the Faculty of Agricultural, Life and Environmental Sciences Naomi Krogman is completing a report and recommendations on the quality of graduate student supervision at the U of A.
- The Faculty of Medicine & Dentistry has developed a new Diversity Policy, targeting students from rural Alberta, students from Aboriginal backgrounds, and students from lower socio-economic backgrounds.
- The Faculty of Education has launched a student and faculty Diversity, Equity, Respect Climate survey. In addition, the faculty established the Stephen and Lynn Mandel Graduate Scholarship in Sexual and Gender Minority Studies, the first lesbian, gay, bisexual, trans-identified, or queer-specific graduate scholarship in the history of the U of A.
- The Faculty of Native Studies has created an online social media presence for the faculty, including Facebook and Twitter.
- In 2013, the Festival of Teaching evolved from a three-day event to a year-long series of events across the institution. The Festival of Teaching theme for 2013 was "Teaching Moves," highlighting the action of teaching, and the various ways in which teaching practices and teachers continuously evolve, pushing traditional boundaries while always striving to motivate, inspire, and move students.
- Ten new projects were funded by the Teaching and Learning Enhancement Fund in February 2013.
- Campus Saint-Jean integrated a new flag-raising event in 2013 in which flags were raised for each country from

- which the faculty hosts an international student. The flags remain visible at the campus's main entrance.
- The Faculty of Arts has developed an iTunesU site for media, podcasts, video segments, and public performances of arts-related teaching and research projects.
 - The campus-wide Safe Spaces Initiative is providing professional development training, campus-based workshops, and a safe space staff resource network.

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.
- The Faculty of Nursing is conducting an undergraduate program review to explore how the undergraduate student experience can be enhanced.
 - A number of initiatives are underway in the Faculty of Arts to improve retention, including better communication with students about current academic standing, exploration of communication strategies exposing students to different majors, and encouragement of departments to review and simplify program requirements.
 - The Faculty of Native Studies has established a Winter Term admission route via the Transition Year Program.
 - A strong relationship between the Faculty of Native Studies and the Native Studies Students' Association continues to be fostered with a goal of strengthening the sense of community in the faculty.
 - The Office of Learner Advocacy and Wellness in the Faculty of Medicine & Dentistry assists all undergraduate professional program students and physician residents with resources and learner assessment.
 - The offering and expansion of the engineering co-operative education program to more than 1,770 students in 2013-2014 has significantly enhanced retention and completion rates by integrating academic study with paid, relevant work experience.
 - The Early Feedback System at Augustana helps to identify students experiencing serious adjustment or academic problems. In addition, Augustana has completed work on the development of program-level learning goals and four-year maps for all major programs to assist students in thinking about their degree programs in their entirety.
 - In working to meeting CePH completion rates, the School of Public Health has mandated regular, documented meetings between students in graduation programs and their supervisors to ensure that progress is monitored.
 - The Faculty of Education has implemented a new teacher education program model with a new compulsory Aboriginal component for all Education programs. This model is a first in teacher education in Alberta.
 - The Faculty of Pharmacy and Pharmaceutical Sciences has initiated discussions about developing additional

Selected Outcomes

- The Faculty of Science is participating in a pilot to house a mental health counsellor within the Student Services Office as a way of reducing barriers to access for students. The Faculty of Arts has similarly embedded a psychologist in its undergraduate student service unit to respond directly to the mental health needs of students in the faculty.

experiential learning sites in locations with large Aboriginal populations.

- An MBA Finance Club and a Women's MBA Network were added to the clubs available for participation by Business students in 2013.
- The Faculty of Engineering participates in up to 12 major student design competitions each year (e.g. EcoCar, great northern concrete toboggan, heavy lift aircraft, aerial robotics).
- The Office of Sustainability delivers more than 100 engagement activities, reaching more than 27,000 members of the campus community each year, and creates opportunities for about 100 student campus sustainability volunteers.

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.

Selected Outcomes

- The following programs have been implemented in 2013:
 - Master of Coaching (January 2013)
 - Doctor of Pharmacy (September 2013)
 - Master of Science and Doctor of Philosophy in Laboratory Medicine and Pathology
 - Master of Financial Management (in China)
 - Master of Business Administration/Master of Library and Information Studies
 - Embedded Certificate in Computer Game Development
 - Embedded Certificate in Global Citizenship
 - Embedded Certificate in European Studies
- The Faculty of Nursing conducted more information sessions about the graduate program than in previous years and publicized these information sessions through Alberta Health Services.
- The Bachelor of Science in Radiation Therapy in the Faculty of Medicine & Dentistry was approved, and will be implemented in September 2014. The first cohort of students is in their pre-professional year in 2013-2014.
- The restructuring of the Bachelor of Science general program in the Faculty of Science was approved by University Governance for implementation in Fall 2014.
- The Faculty of Extension has implemented or is in the process of developing a number of new continuing and professional education programs, including the newly approved post-baccalaureate certificate in Sexual Health, a citation in Social Media Communications, an advanced citation in Global Leadership, and a post-baccalaureate certificate in Leadership and Professionalism.
- In 2012-13, the Faculty of Arts began to review the core Bachelor of Arts program as a first step in ensuring that the program is current and teaches students the skills needed for full and active participation in the 21st century.
- Director of the U of A's Office of Sustainability Trina Innes was appointed to the board of directors of the Association for the Advancement of Sustainability in Higher Education.

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.

Selected Outcomes

- The Faculty of Education is continuing to grow off-campus collaborative programs in northern Alberta, the Aboriginal Teacher Education Program (which had the largest number of graduates to date in fall 2013) and the Career and Technology Bridging Program.
- The MOU between the University of Alberta and Dechinta Bush University has been signed. Courses from the Faculty of Native Studies are being taught via Dechinta and students from Dechinta are beginning to enrol in courses at the U of A.
- The Faculty of Rehabilitation Medicine is continuing with satellite clinics in Calgary (OT/PT) and Camrose (PT) and is pursuing an opportunity to create a satellite OT program at the University of Regina in Saskatchewan.
- The Faculty of Nursing collaborated with nursing faculty at collaborative program partners Grande Prairie Regional College, Keyano College, and Red Deer College regarding development and support of scholarship of teaching.
- The Faculty of Agricultural, Life, and Environmental Sciences developed new and improved block transfer agreements with Campus Alberta partners to permit smoother transition of students into the U of A.
- The Faculty of Medicine & Dentistry's newly approved Bachelor of Science in Radiation Therapy will collaborate

with the University of Calgary as well as with Alberta Health Services, the Cross Cancer Institute, and the Tom Baker Cancer Centre.

- In September 2013, 160 students transferred from Campus Alberta partners directly into second-year engineering specializations at the U of A.
- Under an MOU signed with Grande Prairie Regional College, Augustana has added two new 2+2 agreements to the existing one in the Bachelor of Music program: Bachelor of Science with a major in Biology and a Bachelor of Arts with a major in Psychology.
- The U of A has taken the lead in an initiative to develop a graduate program in Writing Studies for Western Canada in collaboration with major universities in Western Canada.
- During 2013, a total of 111 week-long DiscoverE camps were offered in rural and Aboriginal communities across Western and Northern Canada with 2,603 students participating.
- The Office of Sustainability co-chairs the Alberta network of the Canadian Alliance of College and University Sustainability Professionals.

INTERNATIONALIZATION

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.
- Invest resources to ensure conversion of international applicants to international registrations, and the subsequent academic success of international students at the U of A.

- Develop new credentials and programs that provide U of A students with the understanding and skills related to success in a globalized society.

Selected Outcomes

- New embedded certificates in International Learning and Global Citizenship were launched in September 2013.
- The Faculty of Science developed a new method for assisting students from abroad to register. These students participate in online registration webinars to guide them in understanding more about a science degree, to find their curriculum, select classes, build their schedules, and finalize their admission.
- A new course on Global Health was developed by the Faculty of Pharmacy and Pharmaceutical Sciences in partnership with Fudan University. The course was delivered in China in July 2013.
- The Faculty of Law signed a faculty-level student and faculty exchange agreement with Adelaide Law School at the University of Adelaide. The two institutions are currently working on developing a joint JD/LLB program.
- The Faculty of Education has made available new undergraduate internship opportunities at Gyeong-in National University of Education in South Korea, Lertlah Schools in Thailand, and Hedmark University College in Norway.
- The Faculties of Arts, Business, ALES and Engineering have collaborated in the new U of A e3 campus in Berlin. In Summer 2013, the U of A offered language instruction, internships and a course on “public life and institutions in Germany.”
- The School of Business will continue offering a special lecture section for international students but will use lab and seminar offerings as an opportunity to integrate international students with domestic students. Both of these decisions are based on student feedback.
- The Faculty of Agricultural, Life, and Environmental Sciences offered a highly successful undergraduate co-curricular “Alternative Reading Week” in India and Mexico in 2013.
- The Indigenous Study Abroad Program is progressing. Potential donors have been located to fund a specialized joint program with an Australasian university. This program will be aimed at providing students with academic, cultural, and community engagement within a different indigenous context.
- Sixty-four students participated in the Faculty of Medicine & Dentistry’s Global Health Field Station Program in the summer of 2013. This program provides a high-quality, safe experience for medical students in a developing world context.
- University of Alberta International is piloting an early admission program for international applicants.
- The Faculty of Extension’s professional development program for international faculty required to teach in their disciplines in English continues to expand. Two additional cohorts from 19 universities in Shanghai were added in each of 2012 and 2013, and the program is being marketed in Brazil, China, Japan, Turkey, and Ukraine.
- As a part of an accelerating international recruitment strategy, three agreements have been reached between Campus Saint-Jean and international schools in China.
- The School of Public Health is pursuing the development of a summer school in public health for students from Saudi Arabia.
- In 2013, six occupational therapy students and six physical therapy students travelled to Indonesia for clinical experiences. During this time, these students led workshops for Indonesia therapists, physicians and nurses to enhance the skill sets of practitioners within that country.
- A number of international partnerships are underway in the Faculty of Physical Education and Recreation in the developing field of Mountain Studies. These partnerships include the University of Central Asia and the University of Innsbruck.

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 represent significant research capacity to address global challenges, and integrate these efforts with international strategies and opportunities.
- Establish internal mechanisms to assess, prioritize, and monitor current and proposed strategic investments.
- Invest in organizational units 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.
- Foster collaborations with Alberta's ministries, health sector organization, the public sector, and non-governmental organizations to enhance the quality of life in society.
- 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 Alberta and Canadian universities, and with select international partners to create new and broader avenues of impact.
- Partner with other Canadian universities to create national, leading-edge facilities.

- 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 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 formal and active mobility programs for researchers and students.

Selected Outcomes

- In collaboration with the universities of Calgary and Lethbridge, the U of A led a Campus Alberta initiative with the Canadian Institutes of Health Research, Alberta Innovates - Health Solutions, Alberta Health Services and Alberta Health to develop the Alberta Strategy for Patient Orientated Research (SPOR) Support Unit (funded in June 2013 for \$48 million over five years).
- The Financial Times 2013 ranking places the School of Business ninth among all publicly funded business schools and 33rd overall; the 2013 ranking places its MBA program at 100th in the world and 56th among publicly funded universities.
- Three new NSERC Industrial Research Chairs were approved and two were renewed.

- Twelve new Canada Research Chairs were awarded to the institution and there were three successful CRC renewals and two CRC advancements from Tier II to Tier I.
- Two of five winners of the Canada Council for the Arts Killam Prizes for 2013 were awarded to U of A researchers; three faculty (and one professor emeritus) were elected to the Royal Society of Canada; three faculty were elected Fellows of the Canadian Academy of Health Sciences; two faculty were awarded Sloan Research Fellowships; a professor was awarded France's highest academic distinction, the Order of Academic Palms; and one researcher was awarded a Trudeau Fellowship. A doctoral student in Law received the inaugural SSHRC Impact Talent Award.
- Canada Foundation for Innovation 2012-2013 Leaders Opportunity Fund awards yielded \$20 million in federal contributions towards \$54.2 million in infrastructure investments.
- The U of A led on more than \$7 million in research grants from the Canadian International Development Agency (CIDA).
- The U of A Research Experience Program (UARE) was expanded to include nine countries and 20 strategic partners. Eighty-seven students were placed in research placements in 2013-2014. The goal for 2014-2015 is to place 100 students.
- Thirteen academic and five affiliated centres and institutes have been or are in the process of being terminated; eight have been or are in the process of being terminated and reclassified as academic entities, physical entities, or core facilities.
- On behalf of Campus Alberta, the U of A successfully secured three years of funding for Phase II of the Alberta Saxony Intercultural Internship Alliance (ASiiA). This phase will fund 50 students each year (25 from Alberta and 25 from Saxony), for three years, to participate in research and industry internships in Alberta and Saxony.
- The U of A initiated new partnerships with COLCIENCIAS (the Administrative Department of Science, Technology, and Innovation of the Government of Colombia) and CONICYT (National Commission for Scientific and Technological Research in Chile) through the CALDO consortium; both agencies annually sponsor hundreds of graduate students to study overseas.
- In 2013, TEC Edmonton was named the 17th best university business incubator in the world—and the top Canadian incubator—by the University Business Incubator Index, a global index assessing and benchmarking the performance and best practices of university business incubators.
- In 2013, the U of A opened the Medical Isotope and Cyclotron Facility at the South Campus. This facility houses a \$28-million cyclotron research and production facility that will produce clinical-quality technetium-99m, an important isotope used for 80 per cent of nuclear medicine diagnostic procedures for patients across Alberta and Canada with cancer, cardiac, neurological and other diseases.
- The Canadian Bar Association awarded Professor Catherine Bell the Ramon John Hnatyshyn Award for Law. This is the association's highest award for lifetime contributions to the law and legal scholarship. Professor Bell is the second woman to receive the award in its 20-year history, and the first recipient whose contributions were made primarily in the field of Aboriginal law.
- Construction of the shell and core for the Innovation Centre for Engineering was completed.
- The Alberta Land Institute (ALI) was officially launched in Calgary in September of 2012. Support for ALI was solidified in 2012-2013 and 2013-2014 with the securing of an additional \$1.1 million. Further philanthropic opportunities were also identified.
- The following new endowed or industry-sponsored chairs were announced in 2013: Xstrata Chair in Mining and Mineral Process Engineering, Cisco Research Chair in Healthcare Solutions, two Alberta Biodiversity Conservation Chairs, and the EnCana Chair in Water Resources.

THE ACADEMY: APPENDICES

Appendix 2: Aboriginal Access, Enrolment, and Programming Initiatives

INITIATIVE	FACULTY	NEW TO CIP 2014
Newly approved Bachelor of Science in Environmental and Conservation Sciences, Northern Studies Major, in collaboration with Yukon College and the Faculty of Native Studies	Agricultural, Life and Environmental Sciences	NO
Aboriginal Recruitment and Retention Officer to attract and support Aboriginal students	Arts	YES
Canadian Indigenous Languages and Literacy Development Institute offers summer courses to Aboriginal community members with a goal to preserve indigenous languages	Arts	YES
Partnership with Maskwacis Cultural College to improve flow of Aboriginal students to Augustana	Augustana	NO
Membership in Alberta Aboriginal Recruitment Network	Augustana	NO
Staff member appointed to serve as Aboriginal recruitment specialist	Augustana	NO
Development of a minor in Native Studies to be offered at Augustana	Augustana, Native Studies	YES
Development of an Aboriginal Governance and Industry Partnership program in the Executive Education program	Business, Native Studies	YES
New teacher education model with new compulsory Aboriginal component for all programs	Education	YES
New Master of Education in Indigenous People's Education cohort	Education	YES
Aboriginal Teacher Education Program: Two new ATEP cohorts in collaboration with Portage College and Northern Lakes College; new Northern Teacher Education cohort in collaboration with Keyano College	Education	NO
DiscoverE outreach program reaches 4,000 Aboriginal students from grades 1 to 12 with exciting engineering and science activities	Engineering	YES
Proposed Master of Arts in Community Engagement is part of a suite of stackable and ladderable programs that include a citation in Aboriginal Health Promotion (non credit) and a planned certificate in Aboriginal Industry Relations	Extension	YES
Board of Directors of the Circle for Aboriginal Relations motion to partner with the U of A in development of Industry Relations Training	Extension	YES
Adaptation, delivery and evaluation of a school-based drug and alcohol prevention program with the Alexis Nakota Sioux Nation	Extension	NO
Partnership with Enoch Cree Nation's Family Health Working Group	Extension	NO
Examination of a formal education program offered with Native Counseling Services of Edmonton	Extension	NO
Restructured staff complement to strengthen cultural support for Aboriginal students	Law	NO
Doctor of Medicine admission guidelines for admission of up to five students from Aboriginal backgrounds	Medicine and Dentistry	YES
Development of Diversity Policy as per requirements of accreditation process	Medicine and Dentistry	NO
New theme of social justice in undergraduate curriculum, beginning with sessions on Aboriginal Health in Year 1	Medicine and Dentistry	NO
Pipeline program for Aboriginal students with undergraduate degrees who do not meet the minimum GPA standard for admission to the MD program	Medicine and Dentistry	NO

INITIATIVE	FACULTY	NEW TO CIP 2014
Cree instruction now offered online in the Bachelor of Arts in Native Studies program	Native Studies	YES
Master of Arts in Native Studies online offering, developed for working professional and leaders in Aboriginal, Northern, and rural communities	Native Studies	YES
Development of a Doctor of Philosophy in Native Studies program	Native Studies	YES
MOU signed with Dechinta Bush University servicing Northern students	Native Studies	YES
Community service learning component added to the existing Master of Arts in Native Studies program	Native Studies	YES
Freestanding certificate in Aboriginal Governance and Partnership online offering	Native Studies	YES
Partnerships with Aboriginal groups and programs on campus on initiatives to improve recruitment, retention and completion rates	Native Studies	YES
Review of the existing certificate in Aboriginal Sport and Governance to ensure that program is meeting objectives	Native Studies, Physical Education and Recreation	YES
Aboriginal Nursing Initiative focus on attracting Aboriginal students to nursing education	Nursing	YES
Designation of six Nursing seats to Aboriginal students	Nursing	YES
Dedicated Aboriginal coordinator and faculty assignments that support Aboriginal student initiatives	Nursing	YES
Participation by two faculty members with the Canadian Association of Student Nurses Task Force on Cultural Competency and Cultural Safety on a document to increase the integration of Indigenous knowledge aligned with the cultural safety framework for faculty and students	Nursing	YES

Appendix 3: Rural Access, Enrolment, and Programming Initiatives

INITIATIVE	FACULTY	NEW TO CIP 2014
Alberta Centre for Sustainable Rural Communities fosters collaboration in research, undergraduate teaching and policy development	Agricultural, Life and Environmental Sciences	NO
MOU with Grande Prairie Regional College resulting in two new 2+2 agreements: Bachelor of Science with major in Biology and Bachelor of Science/Bachelor of Arts with major in Psychology; third new 2+2 agreement has been initiated in the Bachelor of Arts in Drama program	Augustana	NO
Rural Capacity Interns placed in projects in rural communities to assist in addressing capacity issues and to create meaningful rural-based undergraduate student experiences	Augustana	NO
Career and Technology Bridging Program in collaboration with communities, school districts, Alberta Schools, and Alberta Education with heavy emphasis on core trades and industries in Alberta	Education	YES
Alberta Teacher Education Program: collaboration with Portage College via blended delivery in two rural sites; collaboration with Northern Lakes College via blended deliver in two rural sites; continuing secondary northern and rural education cohort in collaboration with Grande Prairie Regional College (GPRC); continuing high demand for elementary teacher education north program in collaboration with GPRC	Education	NO
New online Master of Library and Information Studies program with online delivery to attract rural Alberta students	Education	NO
Master of Education in Education 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, extended off-campus to meet demand for qualified school leaders in central rural Alberta.	Education	NO
Proposal for Master of Education in Teacher-Librarianship and Curriculum Studies online delivery in part to serve the needs of graduate students in rural Alberta	Education	NO
DiscoverE outreach program reaches 12,000 rural students from grades 1 to 12 with exciting engineering and science activities	Engineering	YES
Doctor of Medicine admission guidelines for admission of up to ten students from rural and regional backgrounds	Medicine and Dentistry	YES
Office of Rural and Regional Health now using a closed Wiki to connect with rural (distributed) preceptors	Medicine and Dentistry	YES
New theme of social justice in undergraduate curriculum including future development on rural health subthemes	Medicine and Dentistry	YES
Increased rural services including Diabetic Nephropathy Clinic and Rural Nephrology Clinics to address growth in end stage renal disease in Northern Alberta	Medicine and Dentistry	YES
Development of Diversity Policy as per requirements of accreditation process, including target of rural students	Medicine and Dentistry	NO
Expansion of rural/regional Family Medicine Residency Program into Fort McMurray; further expansion into regional centres planned	Medicine and Dentistry	NO
MD Ambassadors Program to introduce students from northern Alberta high schools to careers in sciences and health professions	Medicine and Dentistry	NO
Integrated Rural and Regional Health Community Clerkship offers selected medical students the opportunity to live and learn in a rural setting for their third year	Medicine and Dentistry	NO
Rural placement collaboration to bring together learners on rural placements	Medicine and Dentistry, Pharmacy	NO
MOU with Dechinta Bush University servicing Northern students	Native Studies	YES

INITIATIVE	FACULTY	NEW TO CIP 2014
Master of Arts in Native Studies online offering, developed for working professional and leaders in Aboriginal, Northern, and rural communities	Native Studies	YES
Travel bursary to be initiated in 2014 for Bachelor of Science in Pharmacy students accepting experiential rotations in rural sites.	Pharmacy	NO
Agreement with Alberta Health to perform community health needs assessments in northern communities	Public Health	NO
Alberta Centre for Injury Control and Research priority to reduce the incidence and severity of injuries to vulnerable populations including farming communities	Public Health	NO
Freestanding certificate programs offered via online delivery, designed to provide continuing education opportunities to individuals living in rural settings	Rehabilitation Medicine	YES
Ongoing satellite physical therapy program in Camrose to meet supply and demand issues related to physical therapists in rural Alberta	Rehabilitation Medicine	NO
Bachelor of Arts degree revision and restructuring	Campus Saint-Jean	YES
Maintenance of a Student Life Coordinator position to ensure a quality social and cultural life in French for students	Campus Saint-Jean	YES
Centre collegiale de l'Alberta programs to enhance access to college level programming for francophone students, including: Practical Nursing Business Administration Tourism Management	Campus Saint-Jean	NO
Proposal for enrolment expansion of Engineering program includes an additional proposed 20 students in the program that provides first year engineering courses in French at Campus Saint-Jean	Campus Saint-Jean, Engineering	YES
Development of pre-pharmacy program for francophone students	Campus Saint-Jean, Pharmacy	NO

Appendix 4: Francophone Access, Enrolment, and Programming Initiatives

INITIATIVE	FACULTY	NEW TO CIP 2014
Bachelor of Arts degree revision and restructuring	Campus Saint-Jean	YES
Maintenance of a Student Life Coordinator position to ensure a quality social and cultural life in French for students	Campus Saint-Jean	YES
Centre collegiale de l'Alberta programs to enhance access to college level programming for francophone students, including: Practical Nursing Business Administration Tourism Management	Campus Saint-Jean	NO
Proposal for enrolment expansion of Engineering program includes an additional proposed 20 students in the program that provides first year engineering courses in French at Campus Saint-Jean	Campus Saint-Jean, Engineering	YES
Development of pre-pharmacy program for francophone students	Campus Saint-Jean, Pharmacy	NO

Appendix 5: Graduates in Selected Fields

	2012	2013
Healthcare		
1 Physicians	152	181
2 Nurses	566	513
3 Pharmacists	128	117
4 Physical and Occupational Therapists	114	177
5 Speech Pathologists	60	59
6 Public Health Professionals	76	64
7 Dentists	38	35
8 Kinesiologists	76	72
9 Psychologists	12	14
Education and Knowledge Access		
1 Teachers	1249	1303
2 Librarians	43	52
Business, Government, and Legal		
1 Commerce/ Business	638	625
2 MBAs	150	187
3 Lawyers	170	166
4 Economists	183	203
5 Translators	26	32

	2012	2013
Culture, Arts, and Tourism		
1 Theatre Professionals	41	38
2 Musicians	39	45
3 Industrial, Graphic, and Theatre Designers	39	34
4 Visual Artists	45	52
5 Tourism Professionals	31	29
Resource and Agricultural Economy		
1 Engineers	805	755
2 Geologists	100	122
3 Foresters	12	12
4 Agricultural, Food and Environmental Professionals	368	415
Other		
BA (Residual numbers)	836	806
MA (Residual numbers)	133	144
MSc (Residual numbers)	381	398

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

Selected Programs Offered in Partnership with Campus Alberta Institutions

PROGRAM	FACULTY	PARTNER INSTITUTION	NEW IN CIP 2014
Bachelor of Science in Environmental and Conservation Sciences, and Bachelor of Science in Agriculture programs – block transfer agreements	Agricultural, Life, and Environmental Sciences	Campus Alberta partners	NO
Bachelor of Music (in development)	Arts	Grant MacEwan University	YES
Bachelor of Music, Bachelor of Science Biology major, Bachelor of Science and Bachelor of Arts Psychology major, Bachelor of Arts Drama major (in development)	Augustana	Grande Prairie Regional College	NO
Northern Teacher Education cohort	Education	Keyano College	YES
Aboriginal Teacher Education Program, new cohorts	Education	Portage College, Northern Lakes College	NO
Secondary Northern cohort, Rural Education cohort, Elementary Education North Program	Education	Grande Prairie Regional College	NO
Middle Years Education Program	Education	Red Deer College	NO
Master of Education in Educational Policy Studies (Indigenous Peoples' Education specialization)	Education	Grande Prairie Regional College	NO
First-year Engineering partnerships	Engineering	Grant MacEwan University, Red Deer College, Grande Prairie Regional College, Keyano College, Medicine Hat College	
Master of Science in Laboratory Medicine and Pathology, specialization for Pathologist Assistants	Medicine and Dentistry	University of Calgary	YES
Bachelor of Science in Radiation Therapy	Medicine and Dentistry	University of Calgary, Alberta Health Services, the Cross Cancer Institute and the Tom Baker Cancer Centre	NO
Collaborative Bachelor of Science in Nursing	Nursing	Grande Prairie Regional College, Keyano College, Red Deer College	NO

Selected Programs Offered in Partnership with Canadian Institutions

PROGRAM	FACULTY	PARTNER INSTITUTION	NEW IN CIP 2014
Bachelor of Science in Environmental and Conservation Sciences, Northern Systems major	Agricultural, Life, and Environmental Sciences	Yukon College	NO
Master of Elementary Education online collaborative program	Education	Onion Lake First Nation, Saskatchewan	YES
Writing Studies for Western Canada (in development)	Arts	Major universities in Western Canada	YES
Occupational Therapy satellite program (proposed)	Rehabilitation Medicine	University of Regina	YES
Course delivery agreement	Native Studies	Dechinta Bush University, NWT	NO

Selected Programs Offered in Partnership with International Institutions

PROGRAM	FACULTY	PARTNER INSTITUTION	NEW IN CIP 2014
Bilateral agreements and 2+2 undergraduate program agreements	Agricultural, Life, and Environmental Sciences	Institutions in Asia, Africa, Europe and South America	NO
International Dietetics internship program	Agricultural, Life, and Environmental Sciences	University of Ghana	NO
Dual Bachelor of Arts Degree	Arts	Ritsumeiken University, Japan	NO
eBerlin (three-part programming: language instruction, internships, and a humanities course)	Arts	Germany	NO
Study abroad in Telemark program	Augustana	Telemark University College	NO
Augustana-in-Cuba program	Augustana	Universidad de Oriente, Cuba	NO
Master of Financial Management	Business	Xi'an Jiaotong University, China	NO
French language program (two week)	Campus Saint-Jean	Université catholique de Lille, France	NO
Master of Education cohort with summer residencies	Education	University of Dodoma, Tanzania	YES
Juris Doctor/Bachelor of Laws program (in development)	Law	University of Adelaide	YES
Student exchange program	Law	University of Oklahoma	YES
Dual Juris Doctor program	Law	University of Colorado	NO
Joint Doctor of Philosophy	Medicine and Dentistry	Shantou University Medical College, China	NO
Global Health Course	Pharmacy and Pharmaceutical Sciences	Fudan University, China	YES
Undergraduate and graduate student exchange agreement	Physical Education and Recreation	Palacky University, Czech Republic	YES
Joint Doctor of Philosophy agreement	Science	Ludwig Maximilian University, Germany	NO
University Management Program	University of Alberta International	Select universities in China	NO

Appendix 7: Program Development

Recently Approved Programs

PROGRAM	FACULTY	FIRST INTAKE DATE
Bachelor of Science in Environmental and Conservation Sciences, Northern Systems Major (in collaboration with Yukon College)	Agricultural, Life and Environmental Sciences	Approved effective September 2013, to be implemented September 2014
Bachelor of Science in Agriculture, Agronomy Major and Plant Biotechnology Major	Agricultural, Life, and Environmental Sciences	Approved effective January 2014, implementation TBA
Bachelor of Science in Nutritional and Food Science, Honors in Food Science, Honors in Nutrition, Specialization in Dietetics, Specialization in Food Science and Technology, Major in Nutrition and Food	Agricultural, Life and Environmental Sciences	Approved effective September 2014
Doctor of Philosophy in the History of Art, Design and Visual Culture	Arts	September 2013 (delayed from September 2012)
Embedded certificate in International Learning	Arts	September 2013
Embedded certificate in European Studies	Arts	September 2013
Embedded certificate in Computer Game Development	Arts, Science	September 2013
Master of Financial Management (in China)	Business	September 2013
Master of Business Administration/Master of Library and Information Studies Combined Degrees Program	Business, Education	September 2013
Embedded Certificate in Global Citizenship	Education	September 2013
Bachelor of Science in Radiation Therapy	Medicine and Dentistry	Approved effective September 2013, to be implemented September 2014
Doctor of Philosophy in Laboratory Medicine and Pathology	Medicine and Dentistry	September 2013
Master of Science in Laboratory Medicine and Pathology	Medicine and Dentistry	September 2013
Doctor of Pharmacy	Pharmacy and Pharmaceutical Sciences	September 2013
Master of Coaching	Physical Education and Recreation	September 2013
Post-baccalaureate Certificate in Sexual Health	Extension	September 2013
Internationally Educated Physical Therapy Program	Rehabilitation Medicine	June 2013

Current Program Submissions

PROGRAM	FACULTY	APPROVAL STAGE
Bachelor of Science in Environmental and Conservation Sciences, Sustainable Agriculture Major	Agricultural, Life, and Environmental Sciences	Campus Alberta Quality Council
Master of Arts in Gender and Social Justice	Arts	To be resubmitted by UofA
Master of Arts in Community Engagement	Extension	System Coordination

Proposed Program Suspensions

PROGRAM	FACULTY	APPROVAL STAGE
Bachelor of Arts, Majors in: Combined Classics/Greek/Latin Combined French and Italian Combined Italian and Spanish Italian Studies Middle Eastern and African Studies Russian Language and Literature Combined Russian and Ukrainian Ukrainian Folklore Ukrainian Language and Literature	Arts	Proposals in Development
Bachelor of Design Computing Science Route Printmaking Route	Arts	Proposals in Development
Bachelor of Music Music History Concentration School Music Concentration Composition and Theory Concentration World Music Concentration	Arts	Proposals in Development
Certificate in Translation Studies, Chinese concentration	Arts	University of Alberta (Note: No government approval required)
Diploma in Special Education	Education	University of Alberta
Certificate for Adult and Continuing Education	Extension	Proposal in Development
Post-baccalaureate Certificate in Teaching and Learning in Higher Education	Extension	University of Alberta Approvals
Post-RN Program	Nursing	University of Alberta
Bachelor of Science, Bioinformatics Major	Science	Proposal in Development
Bachelor of Science, Mathematical Sciences Specialization	Science	Approved

Emerging Program Initiatives

PROGRAM	FACULTY	FUNDING SOURCE	NEW IN 2014 CIP
Embedded Certificate in International Nutrition and Food Security	Agricultural, Life and Environmental Sciences	Existing	NO
Master of Science in Land Reclamation	Agricultural, Life and Environmental Sciences	Funding proposal submitted	NO
Fashion Business Management Program	Agricultural, Life and Environmental Sciences; Business	Existing	NO
Embedded Certificate in International Agriculture	Agricultural, Life, and Environmental Sciences	Existing	NO
Embedded Certificates related to the fields of Conservation Biology, Land Reclamation, and Human Dimensions of Environmental Management	Agricultural, Life, and Environmental Sciences	Existing	YES
Watershed Management	Agricultural, Life, and Environmental Sciences	Existing	NO
Applied Civil Military Leadership Certificate (non-credit pilot project)	Arts	Existing	NO
Bachelor of Arts in Asian Studies	Arts	Existing	NO
Bachelor of Economics	Arts	Existing	YES
Doctor of Philosophy in Interactive Media	Arts	Existing	YES
Doctor of Philosophy in Writing Studies for Western Canada (in collaboration with major universities in western Canada)	Arts	Existing	NO
Embedded Certificate in Humanitarianism and NGO Governance	Arts	Existing	YES
Embedded Certificate in Latin American Studies	Arts	Existing	NO
Embedded Certificate in Writing Studies	Arts	Existing	NO
Master of Arts in Public Policy	Arts	Existing	YES
Post-baccalaureate Certificate in Translation	Arts	Existing	YES
Embedded Certificate in India Studies	Arts	Existing	NO
Reciprocal Minor Offerings	Arts, Business	Existing	NO
Master of Arts in Public Economics	Arts, Business, Agricultural, Life and, Environmental Sciences	Existing	NO
Master of Arts in Medical Humanities	Arts, Medicine and Dentistry	Existing	NO
Bachelor of Arts and Bachelor of Science in Interactive Media	Arts, Science	Existing	NO
Honours College	Arts, Science	To Be Determined	NO

PROGRAM	FACULTY	FUNDING SOURCE	NEW IN 2014 CIP
Bachelor of Arts and Bachelor of Science in Gaming	Arts, Science	Existing	NO
Minor in Native Studies at Augustana	Augustana, Native Studies	Internal	YES
Leadership Certificate	Business	Existing	YES
Bachelor of Arts restructuring	Campus Saint-Jean	Existing	YES
Embedded Certificates in the Bachelor of Arts Canadian Studies Globalization Leadership Public and NGO Administration	Campus Saint-Jean	Existing	YES
Pre-Pharmacy foundation program	Campus Saint-Jean	Existing	NO
Centre collegiale de l'Alberta programming: Practical Nursing Business Administration Tourism	Campus Saint-Jean (Centre collegiale de l'Alberta)	IAE	NO
Freestanding Certificate in Special Education	Education	Cost-Recovery	YES
Master of Education in the International Baccalaureate Program	Education	Cost-Recovery	YES
Post-Bachelor of Education Diploma in International Teaching and Learning (in partnership with Lertlah Schools in Thailand)	Education	Existing	YES
Master of Education in Teacher-Librarianship and Curriculum Studies	Education	Existing	NO
Minor in Sexuality (interdisciplinary)	Education (via Institute for Sexual Minority Studies and Services)	Internal	YES
Alberta teacher certification for internationally education teachers	Education (with Alberta Education, Innovation and Advanced Education, Edmonton Public Schools and Edmonton Catholic Schools)	To Be Determined	YES
Master of Engineering (new customized models)	Engineering	Cost-Recovery	NO
Post-Baccalaureate Certificate in Leadership and Professionalism	Extension	Cost-Recovery	
Citation in Community Engagement (non-credit)	Extension	Existing	NO
Citation in Entrepreneurship (non-credit)	Extension	Existing	NO
Summer Business certificate for Law Students	Law (in collaboration with Business)	Cost-Recovery	
Certificate for foreign-educated law graduates (the "NCA Certificate Program")	Law (with the University of Calgary)	Cost-Recovery	NO

PROGRAM	FACULTY	FUNDING SOURCE	NEW IN 2014 CIP
Master of Science in Biomedical Research	Medicine and Dentistry	Cost-Recovery	YES
Bachelor of Sciences in Ophthalmic Sciences	Medicine and Dentistry	Existing	YES
Doctor of Philosophy in Native Studies	Native Studies	Existing	YES
Master of Arts in Native Studies (online version)	Native Studies	Existing	YES
Executive Education, Aboriginal Governance and Industry Partnership Program	Native Studies (in collaboration with Business)	Cost-Recovery	YES
Bachelor of Science in Nursing Collaborative Program curriculum redesign	Nursing	Existing	YES
Master of Nursing, stream designed for individuals who hold degrees in fields other than Nursing	Nursing	Existing	YES
Doctor of Pharmacy (Entry Level)	Pharmacy and Pharmaceutical Sciences	To Be Determined	YES
Master of Public Health/Pharmacy Combined Degrees Program	Pharmacy and Pharmaceutical Sciences, Public Health	Existing	YES
Bachelor of Physical Education: program evolution, including name change to Bachelor of Kinesiology and majors in Physical Activity and Health, Adapted Physical Activity, Sport Performance, and Sport Coaching	Physical Education and Recreation	Existing	YES
Mountain Studies programming	Physical Education and Recreation; Agricultural, Life, and Environmental Studies; Science	To Be Determined	NO
Therapeutic Recreation program	Physical Education and Recreation; Rehabilitation Medicine (with the Alberta Therapeutic Recreation Association)	To Be Determined	NO
Continuation of satellite programs in OT/PT (Calgary) and PT (Camrose)	Rehabilitation Medicine	IAE	NO
Certificate in Disability Ethics	Rehabilitation Medicine	Cost-Recovery	NO
Internationally Education Physical Therapists upgrading program	Rehabilitation Medicine (with the Physiotherapy Alberta College and Association)	Grant Funded by PACA	NO
Bachelor of Science (General) Restructuring	Science	Existing	YES
Certificate in Environmental Monitoring	Science	Existing	YES
Master of Science in Mathematical Finance	Science	Existing	YES
Embedded undergraduate Research Certificate, specialization in Biological Sciences	Science	Existing	NO

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.

Research Chairs – 1 (as of December 2013)

AREA	CANADA RESEARCH CHAIRS			EXTERNALLY SUPPORTED RESEARCH CHAIRS*
	CURRENT	EXTERNALLY SUPPORTED	UNDER RECRUITMENT	CURRENT
Humanities and Fine Arts	5	3	0	9
Science and Technology	32	7	4	12
Social Structures and Systems	7	1	1	21
Energy	4	0	0	7
Environment	5	1	0	4
Health and Wellness	33	2	3	43
Foods and Bioresources	2	0	0	3

* Chairs that are solely or partly funded by private sector or philanthropic sources; excludes honorific named chairs

Research Chairs - continued

AREA	CHAIR PROGRAM					
	CERC*	NSERC INDUSTRIAL	CAMPUS ALBERTA		UOFA TORY	UOFA KILLAM
			INNOVATES PROGRAM	ALBERTA INNOVATES HEALTH SOLUTIONS		
Humanities and Fine Arts	0	0	0	0	4	0
Science and Technology	1	9	2	1	0	1
Social Structures and Systems	0	0	1	0	0	0
Energy	1	10	2	0	0	0
Environment	0	3	1	0	0	1
Health and Wellness	1	0	0	5	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

UofA Tory and UofA Killam = internal university research chairs

Infrastructure Investments: Canada Foundation for Innovation Awards

	2011-2012 AWARDS: \$20.5M	2012-2013 AWARDS: \$54.2M	2013-2014 AWARDS:
Federal: CFI	\$8.1M	\$20.0M	\$3.8M
Provincial: Research Capacity Program	\$7.0M	\$19.1M	TBD in 2014
University: Internal Cash	\$1.7M	\$1.4M	\$0.3M
In-kind and other cash	\$3.7M *	\$13.8M *	\$1.7M

* University and/or external sources

Innovation and Commercialization Partnerships

	2013-2014	2014-2015	2015-2016
TEC Edmonton*	\$1.5M	\$1.5M	\$1.5M
National Institute for Nanotechnology**	\$20.6M	\$21.4M	\$22.3M

* The U of A commits \$1.5M annually to TEC Edmonton, and in some years, may contribute more from royalty distributions.

** Source: NINT Business Plan 2013-2017, forecasted partner contributions. U of A contributions reported here are for salaries for U of A faculty cross-appointed as NRC Senior Program Officers, indirect costs of research, research grants to U of A cross-appointees, which support approximately 180 graduate students and PDFs for NINT programs; internal and federal funding for U of A core nano facilities; facilities and operations support; capital support; and flow through to NRC of utilities and operations grant.

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, and intercultural research that distinguishes the U of A nationally and supports provincial and federal mandates to recognize and preserve Canada's francophone heritage

Canadian Studies Centre; Institut pour le patrimoine de la francophonie de l'Ouest Canadien

Cross-Cultural Studies:

Central and Eastern Europe: emphasis on Ukrainian 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; Kule Institute for Advanced Study

China: emphasis on contemporary China, Chinese energy policy, politics, economy, social issues, culture and Canada-China relations

China Institute at the University of Alberta

Japan: Japanese language and culture from cross-disciplinary perspectives

Prince Takamado Japan Centre for Teaching and Research; Japan Canada Academic Consortium (member institution)

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 and Humanities: deployment of advanced computing technologies for historical, economic, health, social, and cultural research

Canadian Institute for Research 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; Cortona Italy School; Festival of Ideas

Written and Performed Word: study and high-calibre production of literature and theatre

Canadian Writing Research Collaboratory; Canadian Literature Centre; Timms Centre for the Arts

Music Performance and Theory: innovative music research, performance, and leadership for international-calibre 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; FAB 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 Dossetor Health Ethics Centre; 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

Globalization: citizenship education, human rights education, and education for social justice and social development; cultural musical expression

Centre for Global Citizenship Education and Research; Canadian Centre for Ethnomusicology

Law, Justice, and Legal Frameworks: law, administration justice, social justice, and the interpretation and evolution of legal frameworks; 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; Centre for Research in Applied Measurement and Evaluation

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

Institute for Public Economics; Population Research Laboratory

SCIENCE AND TECHNOLOGY

Information Communication Technologies:

computational intelligence, especially machine learning and data mining; wireless and broadband 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 Innovates Centre for Machine Learning; Centre for Earth Observation Sciences

Biochemistry, 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; 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 institution);

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 and 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

National Institute for Nanotechnology

Human Development: mechanisms of neurological and cognitive development and behaviour, especially aging and neurological disease

Centre for Neuroscience; Alberta Centre for Prions and Protein Folding Diseases

Foundations and Behaviour of Matter: theoretical and experimental high energy physics; astrophysics; solar physics and near-Earth space phenomena

Sudbury Neutrino Observatory Lab - SNOLAB (member institution); Institute for Space Science, 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 market-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

Institute for Oil Sands Innovation; Helmholtz-Alberta Initiative; Oil Sands Tailings 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 Sands Tailings Research Facility; Institute 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 coal gasification; advanced ICT for mining; surface mining equipment design and operations

Canadian Centre for Clean Coal/Carbon and Mineral

Processing Technologies; Helmholtz-Alberta Initiative; Centre for Intelligent Mining Systems

Alternative Energies: Geothermal energy; biofuels; solar cells; 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, modelling, 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
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 and Biomass Conversion: understanding and design of enzymes, 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 of 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 Alberta Innovates Centre; 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

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; Alberta Innovates 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

Indigenous 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 Lifespans: cross-disciplinary research and training on individual, social, organizational, and community determinants of healthy living and healthy 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

Interprofessional 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; 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, and 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 Facility; Centre of Excellence for Gastrointestinal Inflammation and Immunity Research; Alberta Glycomics Centre

Appendix 9: Research Capacity Priorities

Enhanced Specialized Infrastructure

The University of Alberta has identified the following areas as strategic priorities for increased research capacity, and will submit proposals in support of these areas to the 2014-2015 Canada Foundation for Innovation's Innovation Fund Competition and to its 2014 John R. Evans Leaders Fund competition: digital social sciences; synthetic biology; glycomics and carbohydrate sciences; biomedical device engineering and fabrication; lipidomics; women and children's clinical and translational health; food safety; advanced radiotherapy cancer treatments; mining equipment innovation; construction automation.

The U of A will also join national initiatives for infrastructure in areas of institutional priority and strength, including neutrinos and dark matter (SNOLAB consortium member), computational infrastructure (Compute Canada and WestGrid), online arts and culture, and agricultural innovation.

The Canada Foundation for Innovation awards 40 per cent of the total capital cost for proposals, which are adjudicated on standards focused on excellence, institutional priority, impact on Canada, and uniqueness at a national or regional level. Following standard processes, the U of A will submit requests to the Ministry of Innovation and Advanced Education's Research Capacity Program for provincial funds, in order to accept any successful federal awards.

Direct Costs of the Research and Innovation Enterprise

The U of A develops, acquires, and works to sustain core infrastructure and services for Alberta's research and innovation enterprise. Examples of this infrastructure include 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 the U of A. Pre-commercialization development and testing for medical, health, and drug innovations could not be done without the provision of the facilities at the U of A.

One-time capital, infrastructure, and renovation costs to establish these facilities are often cost-shared by provincial and federal contributions. Ongoing direct operating costs 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. Indirect costs of research funding itself is insufficient to cover the corporate costs of the research administration within a large medical/doctoral research university, which include staff and systems to satisfy financial, legal, contract development, reporting, and regulatory compliance requirements (e.g., biohazard safety, animal care, experimental procedures, clinical trials).

These direct and indirect corporate costs of a research enterprise are predictable and steady. The U of A will work to specify a transformative funding and financial model that includes them.

Research Capacity Gaps — Graduate Student and Post-doctoral Fellow Funding

As one of Alberta's two medical/doctoral research universities, the U of A delivers master's and doctoral level programs, and trains post-doctoral fellows. The nature of facilities and space the U of A must provide for these members of its academy is qualitatively different from that required for undergraduate learning and teaching.

Direct post-doctoral fellow support is primarily provided through external funds secured by faculty members. Graduate student support comes mainly from internal sources. Two objectives hinge directly on the U of A's ability to provide competitive graduate student support: the

recruitment of the best domestic and international graduate students, particularly in competition with other Canadian institutions, and the ability to sustain graduate training in areas of institutional strength across the academy.

The U of A will work to specify a transformative funding and financial model that includes the costs necessary to achieve these objectives.

Research Capacity Gaps — Faculty and Staff

Some new faculty appointments will be made to ensure that the U of A has the necessary academic, research, and leadership expertise to move the academy forward.

Appendix 10: e-Learning

INITIATIVE	FACULTY	NEW IN CIP 2004
Bachelor of Science in ENCS, Northern Studies in collaboration with Yukon College: more development of distance delivery and video conferencing	Agricultural, Life, and Environmental Sciences	YES
Exploration of course offering via video conferencing for partners in China	Agricultural, Life, and Environmental Sciences	YES
Arts Pedagogy and Research Initiative Laboratory with a focus on two areas of research: Arts Pedagogy and the value of an Arts degree	Arts	YES
E-textbooks: three year pilot project on developing best practices in the use of mobile devices and electronic textbooks	Arts	YES
Multimedia group provides support for conversion of old media formats to digital formats and supports creation of podcasts, video production and lecture capture	Arts	YES
Development of an iTunesU site for media, podcasts, video segments, public performances of Arts-related teaching and research projects	Arts	NO
STS 350: A History of Video Games: a new MOOC for online distribution in 2014	Arts, Science	YES
E-Portfolio pilot project	Augustana	YES
Exploration of integration of internet, social media and course management software with face-to-face teaching	Augustana	YES
Provision of lab and TA resources to facilitate the implementation of the Bloomberg Aptitude Test	Business	YES
Development of new innovative, state-of-the-art learning tools	Campus Saint-Jean	YES
Master of Arts in Canadian Studies: now entirely accessible online	Campus Saint-Jean	YES
Testing of a pedagogical structure involving e-portfolio Magara, including integration with Moodle	Campus Saint-Jean	YES
New version of the Language Lab, including a video component useful for learning sign language	Campus Saint-Jean	NO
Speech Coach, a linguistic diagnostic tool	Campus Saint-Jean	NO
Text-to-speech tool now allowing for "on-the-fly" rendering	Campus Saint-Jean	NO
Bachelor of Education: conversion of courses to blended delivery	Education	YES
Creation of a mobile app to allow K-12 students in Alberta to use mobile devices to contribute authentic data to research projects	Education	YES
Development and evaluation of U of A computer-based testing system in support of strategy for blended-delivery courses and MOOCs	Education	YES
Master of Library and Information Studies: implementation of online cohort	Education	NO
SMART User Certifications: training sessions for integration of digital technology in the classroom	Education	NO

INITIATIVE	FACULTY	NEW IN CIP 2004
Reformatting of "Inclusive Education: Adapting Instruction for Students with Special Needs" for blended delivery	Education	NO
Mobile citizen Science project	Education, Science	YES
Bachelor of Science in Engineering: development of e-learning materials in support of large first and second-year courses	Engineering	NO
Alternate Delivery Programs: Master of Arts in Communications and Technology Applied Land Use Planning Certificate Information Access and Protection of Privacy Certificate Occupational Health and Safety Certificate National Advanced Certificate in Local Authority Administration Citation in Social Media Strategic Marketing Citation in Social Media Communications Advanced Citation in Global Leadership	Extension	YES
English Language Program: integrated online tools and resources	Extension	YES
Expansion of blended learning offerings	Extension	YES
Learning Engagement Office: instructional designers and e-learning specialists to enable development of new and innovative programs while supporting the use of digital learning technologies	Extension	YES
Online Medical English Course, allowing offshore delivery of course content	Extension, Medicine and Dentistry	YES
Interdisciplinary 410 Health Teach Education course incorporates online elements to accommodate distance delivery	Health Sciences Council	NO
Juris Doctor: exploration of use of video capsules as replacement to lectures to explain key concepts, class time to be spent on problem solving	Law	YES
Development of an interactive mobile app to enable faculty and students to record interactions on digital field notes	Medicine and Dentistry	YES
Doctor of Medicine, Doctor of Dental Surgery: various blended delivery course offerings using a variety of different technologies	Medicine and Dentistry	YES
Office of Rural and Regional Health: use of Wiki to connect with rural preceptors	Medicine and Dentistry	YES
Program administration sites developed to facilitate single-point schedule management and co-management of shared documents through integration of Moodle and Google calendars	Medicine and Dentistry	YES
Rural Family Medicine Program: video conferencing used to share academic programming across sites	Medicine and Dentistry	YES
Development and commercialization of Brainspan, an interactive gaming application for medical education	Medicine and Dentistry	NO
Freestanding Certificate in Aboriginal Governance and Partnership: online offering	Native Studies	YES
Master of Arts in Native Studies: online offering	Native Studies	YES
NS 200 Aboriginal Canada: offered via video conferencing for the second time in three years	Native Studies	NO
Clinical Teaching Program: online professional development resource designed to support the professional development of clinical teaching staff, full implementation anticipated for early 2014	Nursing	YES

INITIATIVE	FACULTY	NEW IN CIP 2004
Doctor of Philosophy in Nursing: creation of a cost-recovery online cohort using blended delivery	Nursing	YES
Master of Nursing: new online resource site for disseminating program information and access to instructional materials	Nursing	YES
Bachelor of Science in Nursing After-Degree and Bilingual programs: all examinations have been moved online	Nursing	NO
Laboratory Video Project: new courses have been added in the 2013 academic year	Nursing	NO
Open access webinars offered via the International Institute of Qualitative Methodology: courses will continue in 2014	Nursing	NO
Online preceptorship program	Nursing	NO
Doctor of Pharmacy: course content includes e-learning elements	Pharmacy and Pharmaceutical Sciences	NO
Distance learning technologies employed for professional development courses for practicing pharmacists	Pharmacy and Pharmaceutical Sciences	NO
Skill practice (courses, practice labs, experiential education) supported by eLearning technologies	Pharmacy and Pharmaceutical Sciences	NO
Bachelor of Science in Pharmacy: foundational knowledge in physiology and anatomy being developed and delivered in blended learning format with emphasis on e-Learning components	Pharmacy and Pharmaceutical Sciences	
Master of Public Health: offered via e-learning	Public Health	YES
Blended learning course in diagnostic imaging for physical therapists	Rehabilitation Medicine	YES
Development of an e-clinic using standardized patients so that students are able to work with clients over the course of an academic year.	Rehabilitation Medicine	NO
Expert-delivered webinars offered in a web-based synchronous environment	Rehabilitation Medicine	NO
Voice-over PowerPoint presentations so that students are able to review course content at any time	Rehabilitation Medicine	NO
Satellite programs in Calgary and Camrose are offered using real-time web/videocast technology	Rehabilitation Medicine	NO
Development of interactive applets and modules for use across the undergraduate curriculum	Science	YES
DINO 101: Successful launch in September 2013	Science	YES
New MOOC being developed in linear algebra for September 2014	Science	YES
Special topics course, Introduction to the Space Environment and Space Weather, offered by videoconferencing	Science (with the University of Calgary)	NO



BUILDING STUDENT COMMUNITIES

HOME: IT'S A SIMPLE YET POWERFUL WORD THAT CONJURES UP IMAGES OF BELONGING, DEVELOPMENT, COMMUNITY, AND PRIDE.

University of Alberta Residence Services provide students with more than basic housing amenities; they also create and implement opportunities that help students focus on academic achievement, develop leadership potential, and engage with local and global communities. With 12 residences, seven residence associations, three cohort programs, and 15 community service-learning programs available to choose from, students have multiple options to find—and then grow within—the housing community that can best meet their needs.

While students in residence benefit from easy access to campus amenities, in-house academic services, and ancillary supports, the social networking activities stemming from residence life also often serve as the focal point for resident and non-resident

students alike. Events such as the U of A's Break the Record dodgeball game have brought together an increasing number of students, staff, and alumni with each event (last reaching a total of 4,979 players, plus a large volume of volunteer organizers) and have helped to inspire the greater student population to embrace the University of Alberta as their home.

Increasing student housing is a major priority for the U of A, with the long-term goal of providing space for 25 per cent of full-time students. Since 2010, 474 beds for graduate and international students have opened in the university's East Campus Village, a well-planned student housing community that will eventually include a range of options from fraternity houses to an Eco-House to an additional undergraduate residence.

STUDENTS WHO LIVE IN RESIDENCE EXPERIENCE:

- greater student engagement, with enhanced participation rates in extra and co-curricular activities
- academic success, achieving higher grade point averages as a result of residing in an environment that prioritizes and provides access to the tools that can lead to academic achievement
- stronger retention with the social supports that often provide students who are at a higher risk of leaving with a greater sense of place
- increased community socialization as students are often encouraged to interact with their fellow students and neighbours, and are more actively taught how to use service professionals and faculty members as supports
- opportunities for leadership development resulting in greater personal growth and academic achievement

CAPITAL PLAN

In the competitive world of 21st-century post-secondary education, the vitality and vibrancy of the U of A's education and research ecosystem can only be maintained through well-supported, well-planned, and strategic repurposing and renewal of its facilities. As the university changes and the academy transforms, so must space needs and requirements.

Though the U of A has recently completed and opened several new and renewed formal learning and research spaces, increased enrolment and demand continue to strain existing academic support space such as fitness facilities, formal and informal collaboration/social space, libraries, collections and storage, housing, and daycares. These spaces help attract and retain students, faculty, and staff because together they form and support an environment conducive to a successful academic outcome and experience. Purpose-built student housing is a key driver leading to successful learner outcomes and strong alumni relations.

The university's ability to meet its own and the province's objectives depends on continued investment for new facilities and for renewal and repurposing, addressing deferred maintenance of older facilities. 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 and 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 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 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 existing 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 and meeting the goals of our sustainability plan.

- Fund pre-design services for strategic institutional capital priorities, creating an inventory of projects that can respond to future funding opportunities and can 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 distinct 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 our capital priorities that address space, program, preservation and renewal needs over the next three to five years, as well as forecasting our anticipated long-term needs over the next 10 years. Through the Capital Plan, the university continues to align with government priorities and goals as identified through the Ministry of Innovation 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. The U of A works with a number of value-added, sustainable construction processes, and consultation with provincial officials is essential as Alberta Infrastructure further develops and implements such directives as achievement of sustainability through LEED®, Green Globes™, and BOMA BEST™ certification; prudent management of capital grant expenditure in capital project implementation; and identification of deferred maintenance.

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 total facility inventory is 1.7 million square metres, and while we realize 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. Our current partnered initiatives include Arena and Academic Sport Centre, Student Residences/Workforce Housing, Galleria (formally Edmonton Downtown Academic and Cultural Centre), Physical Activity and Wellness Centre, Eco House, Students' Union Building addition, and Book and Record Depository (BARD) fit-out and expansion.

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) 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, which in turn provides more refined project scopes and budgets necessary to identifying the most appropriate implementation strategy, including public-private partnership (P3) options. The U of A was able to capitalize on and leverage granting programs, such as KIP, and partnerships, such as with Go Sport and the City of Camrose, all of which aligned with the university's long-term academic vision.

Though the U of A has recently completed and opened several new and renewed formal learning and research spaces, increased enrolment and demand continue to strain existing academic support space such as fitness facilities, formal and informal collaboration/social space, libraries, collections and storage, housing, and daycares. These spaces help attract and retain students, faculty, and staff because together they form and support an environment conducive to successful academic outcomes and experience. Purpose-built student housing is key to successful learner outcomes and strong alumni relations. The university will continue to work with government to explore various delivery models for student housing that minimize initial capital investment and result in housing options that are attractive and supportive for students.

The capital priorities outlined within this plan are in direct response to the measures and goals outlined in the university's academic and research plans. They also address space pressures directly related to differential growth of our graduate programs, differing space requirements for graduate versus undergraduate space, approved and planned program growth, changing pedagogy and program delivery methods, and the need for additional academic support space. While all U of A campuses work together as a whole, each serves distinct and separate constituencies across Alberta and has critical 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 partner 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 2013-2014

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 for methods to assess priorities and understand the scope of conditional and functional problems, and to identify potential funds for remediation. With the reduction of the base Infrastructure Maintenance Program grant, the institution and the province are at risk as the levels of deferred maintenance slowly increase. Through ongoing consultation, government will be re-instituting the preservation category within BLIMS. This will allow for the prioritization of critical deferred maintenance projects that exceed current IMP limits and have been historically displaced against larger, critical renewal projects.
- **Campus Planning:** With the conclusion of the LRDP amendment for South Campus, the university is working with our neighbouring and university communities to prepare an amendment to the LRDP as it pertains to the North Campus. The ministry can expect this plan to come forward in the spring of 2014 in accordance with the terms and conditions outlined in the Post-secondary Learning Act.
- **Envision Program (previously 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, the next generation of the EMP is financed through borrowing and paid back through resulting energy savings. The accumulated impact of our ongoing and significant investment in energy initiatives has aided in reducing greenhouse gas emissions and lowering operating costs.
- **Gathering Place:** The university continues to be engaged in discussion to advance the Gathering Place as an interdisciplinary centre of learning aimed at facilitating high-quality dialogue between Aboriginal students and staff across all academic disciplines of the university.
- **Leveraging/Collaboration:** The U of A continues to provide and explore additional collaboration opportunities with our Campus Alberta peers, with respect to our physical assets, professional staff, and programs and services.
- **Student Housing:** The university continues to develop plans and business cases to house up to 25 per cent of its full-time enrolment in purpose-built, supportive housing. Other activities are also taking place, such as sector planning of Michener Park, articulating student housing need within the General Space Program for Augustana, exploring housing partnerships, ongoing new construction within East Campus Village, and conducting various modernization studies. Collectively, these activities guide us in the creation of a comprehensive housing and residence program.

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 centre of campus. Government has provided much-needed funding 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 has been completed. The Design Development program has identified phasing options for the renewal project. Moving to construction documents for phasing and formalizing the functional program will allow for commencement on the interior design elements.
- **New Access for South Campus off 122 Street:** Engineering is now complete and tenders have been issued for this project. Through the funding received to provide for critical infrastructure improvements at South Campus, the university has been able to partner with the City of Edmonton which provided additional funding to advance a portion of its renewal program of 122 Street, originally scheduled for 2019. This partnership will reduce the impacts of multiple and protracted road construction projects, and eliminate future removals that would have been required if the city's work would have waited to proceed in 2019.
- **Infrastructure Maintenance Program:** Current funding levels of the Infrastructure Maintenance Program (IMP) grant, together with recent one-time project transfers, have allowed the university to maintain its trend in reducing its deferred maintenance liability; however, the recent reduction to the base IMP grant will cause a setback over the longer term. Restoration of IMP funding to 2011-2012 levels is critical for preventing increases in our deferred maintenance liability and reducing the risk of catastrophic failure of some of our buildings systems. Increases to base funding and additional one-time grants for large renewal projects such as Clinical Sciences or MSB are required to limit the growing risk to this liability. (See Figure 18 in the Current State of Assets section.)
- **Preservation Projects:** Projects funded and undertaken in recent years have resulted in reductions in the Facility Condition Index (FCI) of some facilities. (See 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 renewal and backfill has been completed. A number of repurposing and renewal projects have been identified in close collaboration with government, and are being completed.

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

- **Camrose Performing Arts Centre:** This project is the result of strong capital and program partnerships with the city and county of Camrose. Construction of this facility, located on Augustana Campus, started in the fall of 2012 with an anticipated completion date of March 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 10 years (2004-2013), the university has received approximately \$150 million from CFI for major infrastructure purchases, including equipment, renovation, and new construction. This funding has directly leveraged approximately \$225 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 will be used to showcase the city's and university's respective museum collections and the work of local artists. This space officially opened October 1, 2013, with the jointly hosted, inaugural exhibition featuring renowned artist and professor Fan Zeng.
- **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 from His Highness, the Islamic Garden will be moved to a different location within the DBG than originally planned. The design team has completed the schematic design and budget estimate, which, hopefully, will allow the release of the basic infrastructure grant by Innovation and Advanced Education. 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 visitor and tourism support.
- **The Galleria Project (E-DACC):** This proposed project continues to progress and we look forward to government's commitment. Proposed new infrastructure for the departments of Music, and Art and Design, in the Faculty of Arts would satisfy their space program requirements. This downtown revitalization project could also address space needs within the School of Business. The Galleria is an innovative collaboration of private philanthropy, corporate investment, and public funding involving all orders of government.

PROJECT COMPLETION

- **Li Ka Shing Centre:** This year, the capital fit-out of the CGMP (current good manufacturing practice) area was completed, which concludes the remaining major fit-up for this facility. The extensive commissioning process will continue throughout 2014 and final certification granted for 2014-2015.
- **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 for program space in the Faculty of Engineering. ICE will support the faculty's focus on providing space for increased access for graduate programs and associated faculty and staff. Construction of the base shell and core of this facility is nearly complete and fit-out of the facility is scheduled to proceed in the spring of 2014.
- **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, and School of Public Health. This space has attracted world-leading researchers in the areas of soil reclamation and water research.
- **Student Housing:** In September 2013, the university opened two new student residences located within East Campus Village. These facilities provided an additional 240 beds and increased our ability to provide on-campus housing to just over 13.75 per cent of full-time students. These new residences provide housing for undergraduate, international, and graduate students, and support the university's goal of providing purpose-built housing for up to 25 per cent of its full-time student population.
- **Medical Isotope and Cyclotron Facility:** The partnered project on South Campus for the redevelopment of the old Balmoral Curling Club into a state-of-the-art cyclotron facility was completed in late 2012. The university and its partners (Alberta Health Services, Natural Resources Canada, and Advanced Cyclotron Systems) will be moving into the space through 2013 and into 2015. University operation of the cyclotron and use of the space commenced January 2013.

MAJOR FUNDED CAPITAL PROJECTS UNDERWAY

- **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 space 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.
- **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 the Edmonton Clinic Health Academy, and provides needed space for the dean's office, student services, and teaching and research. Scheduled completion is September 2014.
- **Innovation Centre for Engineering Fit-Out:** Due to the critical need to accommodate the demand and planned growth of our Engineering programs, the university has approved funding for the fit-out of this facility. Notwithstanding the self-funding of the entire project to date, the university continues to seek government support for a portion of the fit-out, which is highlighted in Table 3 – Highest New and Expansion Priorities.
- **Students' Union Building Expansion:** The SUB renovation project is intended to address current weak spots in how the building has developed over time. The project is designed to achieve two important long-term goals: ensuring that the building continues to be kept up to date and well maintained, and encouraging student involvement in campus groups, events, and volunteer opportunities. This project is funded through a ACFA mortgage and backed by fees collected by the Students' Union.
- **St. Joseph's Women's Residence:** This residence expansion project aims to introduce 282 beds to the U of A's on-campus housing inventory. An extension of St Joseph's College, the new, all-female residence will operate in a collaborative manner with the rest of the university's residence system. This project is funded through the support of St. Joseph's College funding and an AFCA mortgage that is supported through rent.
- **Saskatchewan Drive Residence:** This residence expansion project will add 144 beds to our on-campus housing inventory. The new residence will be part of the larger Peter Lougheed Leadership Initiative, a joint initiative between The Banff Centre and the U of A, focused on leadership development for undergraduate students.

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 most recent BLIMS submission. Project cost estimates are reviewed and updated annually and adjusted as required. 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: CONTINUED REDUCTION IN DEFERRED MAINTENANCE LIABILITY

Infrastructure Maintenance Program (IMP) funding remains critical, especially as a source of funding that continues to be leveraged in partnership 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 2013 updated audit values. Last year, the estimated total liability of recognized deferred maintenance on supported and unsupported university facilities was \$822 million: \$689 million for supported facilities and \$133 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 currently recognized by government in the deferred maintenance tracking tool. As government migrates its current software (ReCAPP) to a new tool (VFA), we understand that the intention is to track building code, hazmat, universal access, horizontal infrastructure, and other elements. While we fully support adding these elements in the values for deferred maintenance, it should be noted that this change will likely further increase the institution's current recognized liability by more than \$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. The institution's deferred maintenance liability has shown a gradual reduction (with facilities

over 40 years of use showing the most improvement) as a result of grants and a strategic approach to addressing critical deferred maintenance. We anticipate that, if the previous funding levels are not restored, the recent trend of a reduction in deferred maintenance will be reversed. The university continues to strategically invest in our aging infrastructure, and the FCI for these targeted buildings has improved significantly as reported in the annual "Good News Stories" issued to the government.

ASSUMPTIONS

The university 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 that could affect life safety or result in building closures.
- Identify and proactively address deferred maintenance in a sustainable manner and in collaboration with government. In this way we can jointly 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. For the next update, the university will be working through CAUBO on a national benchmarking initiative for deferred maintenance. As the western co-ordinator, we are working towards all Campus Alberta institutions participating, and sharing the outcome of the report with government.
- 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 or repurposing requirements. This plan, which must be data driven, will break new ground regarding the process for funding requests, and provide another tool for a sustainable review of our assets.

- Preservation - “Good News Stories”: Since 2010, the university has prepared a trio of “Good News Stories” 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’s overall carbon footprint, reduce our demand on 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.” Initial projects are showing significant reductions in consultant costs, reductions in contractor premiums, and quicker turnaround on the certifications. Projects that are targeted for sustainable construction certification are listed in the quarterly report.

KEY ISSUES

- Sustainability: Through recommissioning and sequenced renewal of 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.
- Increased Liability: Current and previous IMP funding levels alone do not provide adequate funds to address current and trending levels of deferred maintenance. Stable, long-term funding will be essential, and the university will work with government to develop funding strategies that could support increased funding in the order of \$25-35 million annually.
- 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 such increased functional and operational demands. Therefore, the coupling of functional and physical renewal projects through backfill projects provides a best-value model for 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

- **Renewal:** With the shift of focus to renewal of aged facilities, a methodical, planned approach has been developed to address various aspects of renewing older buildings that remain occupied.
- **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 U of A, 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.

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 with the cost of a comparable new green field building.
- **Space Utilization:** The university is reviewing space utilization to determine how underused space could provide logical and comprehensive swing space during renewal or repurposing projects.
- **Renewal and 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 with 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 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 cases in which up-front 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, which suggested an annual planning envelope in the range of \$2-3 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; 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 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. Up-front 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, the U of A is faced with 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:** Though new construction has accommodated the planned growth of the institution, the university must continue to respond to its learning goals. There are a number of targeted buildings for which planning work must be completed: Dentistry/Pharmacy, the Medical Sciences Building, the Clinical Sciences Building, and the South Academic Building (formerly 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

that they are fully aware of the impacts of development. Critical to meeting these expectations is our ability to continue to work alongside these communities and ensure that the consultation process is maintained through the development of sector plans, as well as project-specific siting, pre-design, and preliminary design efforts.

- **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. Given the recent amendments to our north and south campuses, the university will be working to repackage its LRDP document so that each of our five geographically distinct campuses will have individual plans that properly reflect the unique and varied programming and community considerations associated with these campuses.

FOCUS AREA 4: STUDENT AND WORKFORCE HOUSING

ASSUMPTIONS

The university continues to respond to pressures for additional student residences, faculty and staff housing, and accommodation for visiting researchers. Research indicates that the quality of housing facilities and the academic programs correlate with academic performance and the success of students. These facilities are also a key tool in the university's ability to attract and retain 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 Innovation and Advanced Education, other ministries, and stakeholders to develop creative housing solutions that are sustainable and 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: This study 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, 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 reserves 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 and Michener Park.
- 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 assessments 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 to 35 per cent of the gross area is being used 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.

- Michener Park Redevelopment: Available and supportive family housing is essential for recruiting and retaining graduate students and post-doctoral fellows. Ancillary Services is undertaking community and business planning with a view toward advancing this important project. Phase one of this project will see an approximate doubling of our current married student housing units and the creation of a community that can seamlessly integrate with the surrounding communities. This project will also serve to eliminate the existing deferred maintenance liability at the Michener Park site.
- Modernization Studies of Lister Hall and HUB: Lister and HUB are two communities that support undergraduate and international undergraduate students. Their modernization is critical to the university's ability to continue to meet the needs of these important cohorts.
- East Campus Village (infill and new residence development): It is the university's intention to continue to develop East Campus Village as a vibrant and supportive student community. There is an opportunity to develop creative and appealing infill housing projects that meet the needs of the students and are respectful of the community's architectural heritage. The university plans to expand its successful cohort living and learning spaces by developing further residences in East Campus Village.

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 Augustana campus; a new School of Business building to accommodate growth within the faculty; a new School of Music and Art & Design facility within the Faculty of Arts; fit-up of the Innovation Centre for Engineering; and relocation and a new arena and metabolic unit replacement on South Campus.

There are also a number of critical academic support facilities that have been identified for expansion, including the Book and Record Depository [BARD]. 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 of students is supported.

- 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 advance 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 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 maximize and leverage limited government resources.
- Lack of Adequate Academic Support Space: Over the past 10 years, there has been a concentrated focus on funding projects that lead directly to much-needed increases 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 (e.g., Book and Record Depository, curatorial research facilities, and student housing). There is also an opportunity to leverage the operational and administrative skills (e.g., project management, cost control, sustainability, procurement) within the Campus Alberta model to the advantage of the various institutions and the ministry.

FINANCIAL STRATEGIES TO SUPPORT CAPITAL

There is a significant need for long-term funding certainty to facilitate institutional initiatives. While there will likely always be a need for traditional provincial investment through one-time grants, the university is committed to seeking other opportunities and avenues that minimize this dependency through a number of funding strategies.

- **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. The university recently completed a briefing to Innovation and Advanced Education that outlined possible sinking fund scenarios that could be used to support these efforts and take advantage of high market returns and low long-term fixed borrowing rates.

- **Alternate Financing Arrangements:** Along with pursuing innovative partnerships for property development, the university also looks for alternative financing arrangements (e.g., 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 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 whether 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, failure to provide funding that bridges the difference between the lower historic funding associated with V-wing and today's funding requirements will result in a significant operational shortfall to the institution. This will directly affect overall operational service levels across our campus for existing facilities. As buildings are repurposed to accommodate additional

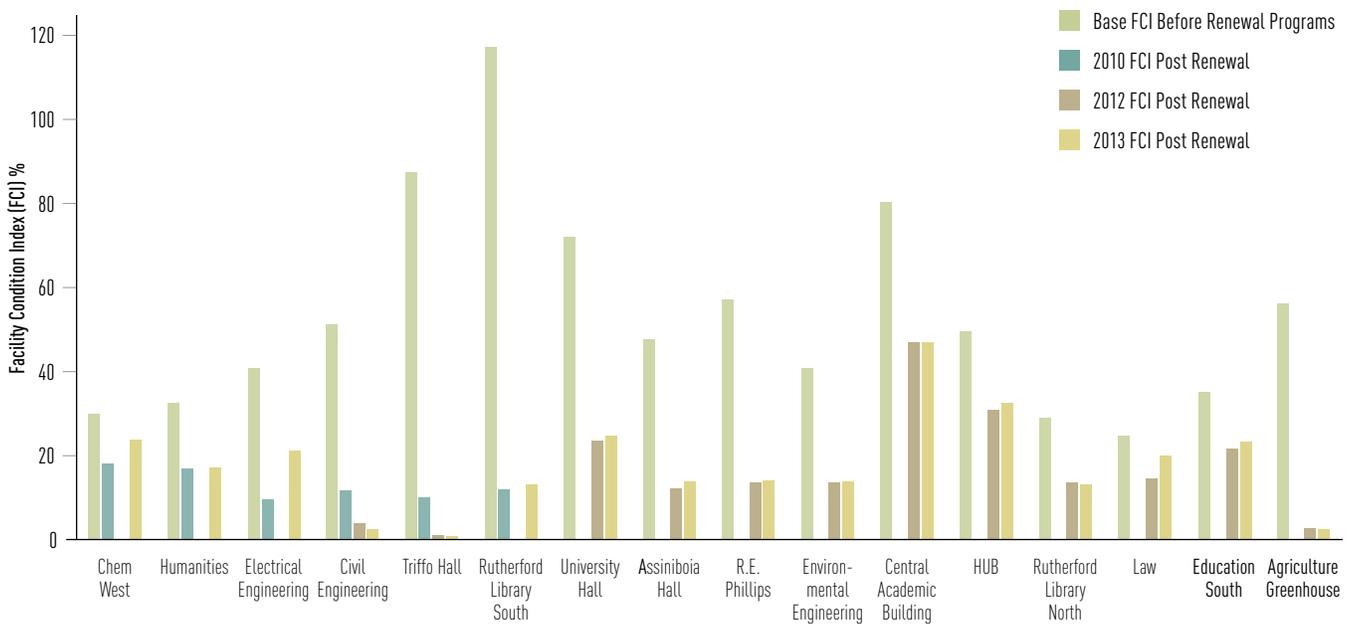
research-intensive programming, there may also be a need to review operating costs and associated funding requests for differential lights-on funding to accommodate program change within a building.

- The deferred maintenance liability cannot be significantly reduced unless an increase in annual grant funding 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 are not readily available.
- The lack of available and affordable child care 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 is fully committed to sustainable construction and operations, 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.
- The university is considering how it might monetize land assets that are surplus to its academic and research needs.

Current State of Assets

The university manages a portfolio of facilities totalling 1.7 million gross square metres over more than 500 buildings, of which 50 per cent are more than 40 years old and 80 per cent are more than 20 years old. 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.

FIGURE 14 FACILITIES WITH SIGNIFICANT MEASURED FACILITY CONDITION IMPROVEMENTS



DEFERRED MAINTENANCE PROGRAM

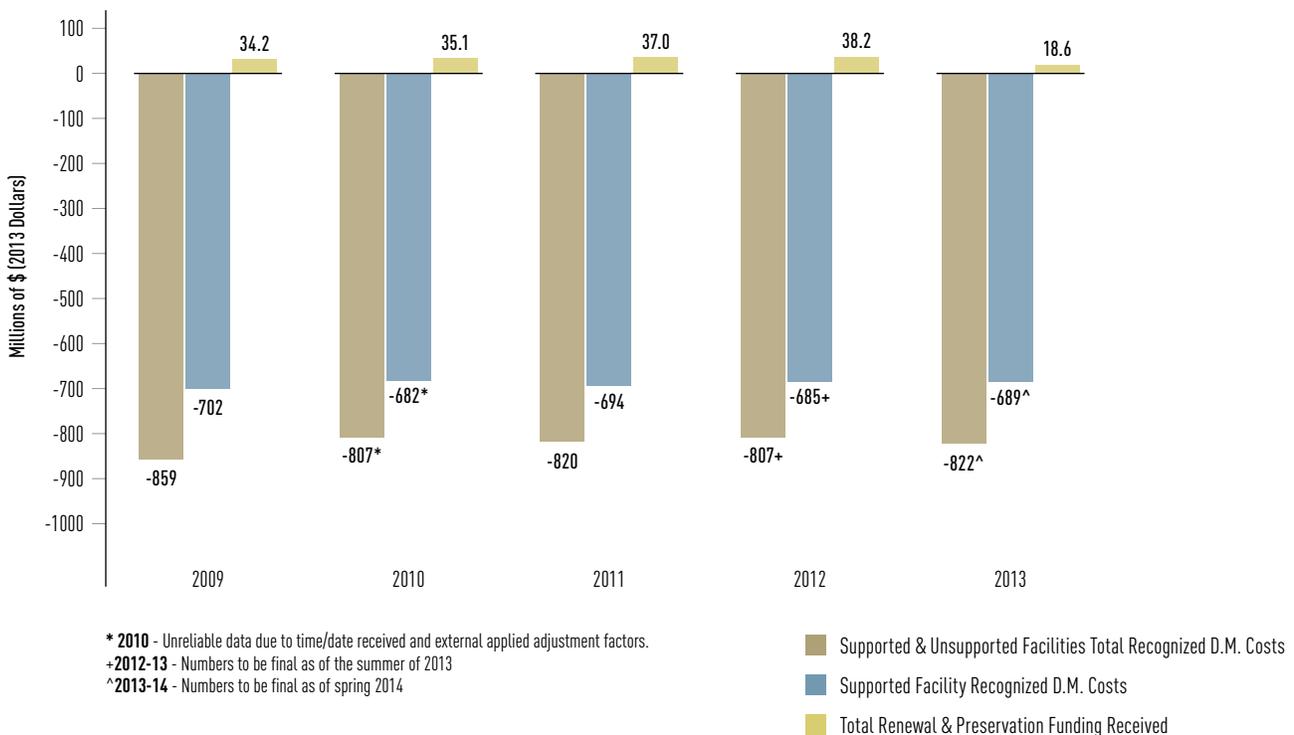
Funding cuts to the Infrastructure Maintenance Program, coupled with the loss of one-time grants for preservation and deferred maintenance projects, will reduce our ability to address deferred maintenance liabilities. As we work to renew our 10-year strategic plan in 2014-2015, we will work with government to articulate these impacts and develop a new plan that is balanced and responsive to these new realities, while outlining our needs and specific strategies to continue to aim at proactively managing these risks.

Notwithstanding the impacts and risks associated with these funding changes, the U of A, with assistance from the Government of Alberta, continues to make progress in

reducing the overall Facility Condition Index for buildings that have been strategically targeted for investment as they are critical to the delivery of our academic and research mission and priorities. (see Figure 16).

Current funding is inadequate to eliminate the backlog of infrastructure renewal required without supplementary one-time grants for large, high-priority projects, such as Clinical Sciences and Cameron Library exterior skin replacement or the renewal of the Medical Sciences Building and the Clinical Sciences Building. Should the pull-back on continuous and one-time funding assistance for preservation projects continue, the recent trend of

FIGURE 15 5 YEAR REPORTED FACILITY DEFERRED MAINTENANCE TREND VS. IMP AND ONE-TIME FUNDING



slightly decreasing the deferred maintenance liability will reverse and revert back to the trends experienced between 2000 and 2005.

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 for both supported and unsupported (ancillary) facilities.

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 residences do not. Strategic funding for the renewal of some of these older facilities is necessary to prevent unintended closures.

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.

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 we can maintain access and minimize the risk of shutting down teaching, learning, and research space.

Capital Funding Requests

This section outlines the University of Alberta's current listing of highest priority capital and planning projects to ensure the institution can meet its mandate over the next three to five years. The projects listed within provide the foundation of our BLIMS submission for 2014-2015.

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 renewal, 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 have not been included within the Capital Plan but will be identified in the 2014-2015 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.

TABLE 1 PRE-DESIGN / DESIGN PROJECTS REQUIRING FUNDING (LISTED IN ALPHABETICAL ORDER)

PROJECT	DESCRIPTION
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.
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.
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.
Campus Space Planning *	In response to the CIP, increased growth in Graduate and post graduate programming, and increased utilization, the university continues to refresh faculty space needs and maximize repurposing and minimize new and/or expansion demands.
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.
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 the researchers 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.
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.
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.
Long Range Development Plan (LRDP) Updates	The University will 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.
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. Refer also to EDACC initiative
School of Music/Art and Design	Development of a building that could house the School of Music and the Department of Art and Design in partnership with a private sector developer. Concept pre-design, business case development to facilitate fund development, building schematics and delivery strategies. Refer also to EDACC initiative
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.

TABLE 2 HIGHEST PRESERVATION PRIORITIES (LISTED IN ALPHABETICAL ORDER)

PROJECT	DESCRIPTION
Agriculture Forestry Lab * (P)	Upgrade base building infrastructure to allow for full functional renewal of laboratory spaces. This will permit increased program use in the facility.
Biological Sciences Renewal Program – Phase 1 (R)	Phase 1 of renewal program for Biological Sciences. Significant upgrades to mechanical and electrical base building infrastructure to support current and future needs.
Cameron Library Information Pavilions Phase 1 * (R)	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.
Campus Saint-Jean Electrical Distribution * (P)	Upgrade the existing site electrical distribution and main service to effectively manage the aging infrastructure issues and to facilitate future expansion objectives.
Campus Wide Fire Alarm Modernization *(P)	Replace/retrofit/renew fire alarm infrastructure in university buildings.
Campus Wide Fire Suppression Upgrade *(P)	Replace/retrofit/renew fire suppression infrastructure in university buildings.
Chemical and Materials Engineering Building – Renewal (Phase 2) (R)	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.
Chemistry West – Phase 3 of Renewal – Building Envelope Perimeter Heating and Interior Upgrades (R)	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.
Chemistry West – Floor Renewal *(P)	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.
Chemistry West & Chemistry East – Electrical Vault / Emergency Power Upgrade * (P)	Electrical services for the facility are at capacity; no emergency power is available for building life safety systems. New electrical room and generator required.
Clinical Sciences Building: Phase 1 Design and Renewal (R)	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.
Clinical Sciences Building: Phase 2 Renewal and Repurposing (R)	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.
Convocation Hall Renewal (P)	Renewal of hall stage, front lobby and interiors; all timed to coincide with building's Centenary.
Dentistry/Pharmacy Building – Renewal (R)	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. This project restores and reuses and historically significant building to the campus, allows for greater administrative efficiencies with the co-locating of many of our central services, reducing demand for outside leases, and most importantly builds a new front door for our campus to the community of prospective students, current students, and our alumni. The university is also preparing a phasing plan, that while increasing the costs, will allow for the project to continue advancing as funding becomes available.

PROJECT	DESCRIPTION
Earth Science Building – Central System Upgrade * (R)	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.
Heating Plant – Boiler #7 (P)	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.
Medical Sciences Building: Phase 1 Renewal *(R)	Select building renewal and repurposing/backfill to occur once the Edmonton Clinic Health Academy is complete.
Medical Sciences Building: Phase 2 Building Upgrade (R)	Full facility renewal program and backfill.
Replacement of Remote Control Monitoring System (RCMS) * (P)	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.
Roofing Program * (P)	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.
Universiade Pavilion: Building Envelope Upgrade * (P)	Renewal of building envelope to replace failing panels.
Van Vliet East & West – Upgrade of Mechanical Systems * (P)	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.
Various Facilities – Electrical Vault Upgrades * (P)	Campus-wide upgrades of electrical vaults currently in poor condition and close to failure.

TABLE 3 HIGHEST NEW AND EXPANSION PRIORITIES (LISTED IN ALPHABETICAL ORDER)

PROJECT	DESCRIPTION	NEW SPACE (M ²)
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
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.	6,592
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.	
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
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
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
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
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
Housing – East Campus Village	Development of up to 600 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
Housing – Michener Park	Complete redevelopment of buildings and supporting infrastructure doubling the current density in Phase 1. Assumes a 30 per cent equity component.	N/A
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

PROJECT	DESCRIPTION	NEW SPACE (M ²)
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. See Arena project	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)	
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.	27,900
School of Music/Art and Design	Development of a building that could house the School of Music and the Department of Art and Design in partnership with a private sector developer. The budget represents the potential equity required within the partnership arrangement.	32,500
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
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
TEC Edmonton Expansion	The success of TEC Edmonton in assisting start-up companies through mentorship and business planning calls for a need to fit-up additional space within ESQ as per original vision. Next expansion of 20,000 sq.ft.	
Arena and Academic Sport Centre	The Arena Project is part of the long range plan of moving all varsity programs to South Campus and having these buildings serve not just the university but the community at large. This facility will provide needed space for our Hockey, wrestling and Golf program and will provide needed admin, learning, and research space associated with our varsity programs. The Project assumes a partnered which would see this \$55-60 Million project being funded through partnership, philanthropy, borrowing and Government Support. As well, this facilities the replacement and relocation of our aging and antiquated metabolic facility	TBD



BRIDGES OF KNOWLEDGE: COMMUNITY SERVICE-LEARNING

A GROUP OF PEOPLE—MEN AND WOMEN OF EVERY AGE AND BACKGROUND—MEET TOGETHER IN A ROOM IN EDMONTON'S DOWNTOWN. THEY SIT IN A CIRCLE, LOOK TO THE INSTRUCTOR TO BEGIN THE CLASS, AND SOON ARE ENGAGED IN DISCUSSION OF A NOVEL OR PHILOSOPHICAL IDEA OR ABORIGINAL SPIRITUALITY.

The possibilities are as diverse as the members of this unusual university course called Humanities 101, a program devoted to bringing liberal arts learning and knowledge to those whose personal economic, social, or academic circumstances are compromised. Offered through the University of Alberta's Community Service-Learning Program, Humanities 101 is only one example of how CLS bridges campus and community, theory and practice, student life and so-called "real" life.

CLS connects students with community organizations related to their areas of study. Combining classroom and community-based learning, students undertake projects of about 20 hours as part of an academic course. Relevant to both the community organization's need and the goals of the course, these projects integrate classroom concepts with real-world experience, helping student develop the skills needed to translate great ideas into effective and applicable solutions and models.

Placements range widely, creating opportunities for students in majors as diverse as English and Rural Economy. Students might provide much needed tutoring to new immigrants, assist in writing successful grants, or create distribution networks for locally produced food. They might study the impact of major industry on fast-growing urban centres such as Fort McMurray.

Highly motivated students can earn a certificate in community engagement and service learning or complete a Non-Profit Board Student Internship. The experiences gained prepare them for a wide range of careers in non-governmental organizations, the volunteer sector, business and government and academic institutions.

Through the multiple avenues offered by CSL, students become more informed and engaged citizens who continue to give back throughout their lives, doing great things to make our communities better places to live.

OUTCOMES AND BENEFITS

- Eight faculties at the U of A offer 64 courses in 25 disciplines with a community service learning component.
- More than 3,400 students have participated in the CSL program since 2003. In 2013, 81 percent of students said they would recommend CSL to other participants.
- Some 164 community organizations in Alberta work with the university to educate students about the many social challenges communities face.
- Engaged students become engaged alumni. A recent survey shows more than 77 percent of University of Alberta alumni volunteer locally. Among CSL students, however, that number is even higher—89 percent volunteer locally, a quarter of whom continue to volunteer with their CSL placement.

INSTITUTIONAL BUDGET, 2014-2015

Although the University of Alberta continues to face significant budget challenges in 2014-2015, it is looking forward to a period of greater budget stability, helped by the government's decision to begin reinvesting in post-secondary education late in 2013-2014. As the university moves into 2014-2015, it will advance on the vision and academic priorities as laid out in *Dare to Discover* and this Comprehensive Institutional Plan.

With a positive consolidated budget and moving toward a structurally balanced operating fund, the university will leverage government's reinvestment strategically in 2014-2015. A major thrust of the reinvestment will be stimulation of new revenue (net) that will help to mitigate the impact of budget cuts planned for 2014-2015. All of this will be accomplished within the context of the university's four-point action plan focused on academic transformation, sustainable financial models, ongoing administrative effectiveness, and internal culture change.

As noted in last year's CIP, the university has been transitioning to Public Sector Accounting Standards (PSAS) incorporating required accounting adjustments and modifying budget tables to better align with the standards. This transition will continue over the next several years as the university receives further clarification from the provincial government on the application of standards.

In the 2014-2015 consolidated budget table, the 2013-2014 budget has been restated to reflect further PSAS adjustments. In particular, Amortization of Deferred Capital Contributions is no longer budgeted as a separate line item but distributed to the revenue source to which the deferral applies. This has resulted in an increase of \$98 million in provincial government revenue, an increase of \$9 million in federal government revenue, and an increase of \$13 million in investment income revenue. The net effect of this change on the total revenue budget is zero, as these revenue increases are directly offset by the elimination of the revenue line for the Amortization of Deferred Capital Contributions.

For 2014-2015 the university has also begun reporting the consolidated budget by fund, which offers a greater level of transparency and understanding of the university's budget, in particular the activity within the operating fund, the key teaching and learning budget.

Consolidated Budget

Prepared under Public Sector Accounting Standards (PSAS), the U of A's 2014-2015 consolidated budget (see Table 4) 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 operations is fully unrestricted within the consolidated budget. Funding for ancillary operations remains within those operations, while the majority of research revenues, philanthropic sources of revenue, and capital project funding are fully 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 advance the institution's enterprise, whereas restricted funds can only be used for the purposes for which they were received. To further enhance the university community's understanding of the budget, a budget primer document was developed and is publicly available on the university's website, along with a supporting animated budget primer video.

Over the last year, the university has implemented plans that will realign the budget within a new funding context. For 2014-2015, the university has developed detailed plans and strategies that will achieve a consolidated balanced position for 2014-2015 and made limited strategic investments to advance the institution. Although the mid-year 2013-2014 2.6 per cent base funding increase to the Campus Alberta grant helped to reduce negative impacts,

and the university has advanced efforts to generate new sources of revenue, cuts across the institution will still need to be implemented in 2014-2015 to realign the university's expenditures with its budgeted and forecast revenues.

For 2014-2015, the consolidated budget reflects an excess of revenue over expense of \$9.5 million on total revenue of \$1,749 million. This represents less than one per cent of the university's budgeted consolidated revenue. The \$35-million change between the 2013-2014 preliminary actuals and the 2014-2015 proposed budget is driven by a number of factors. First, there was the specific decision by the Board of Governors to approve a consolidated budget deficiency in 2013-2014 and phase in budget cuts over two years in an effort to plan effectively and limit the impact of the cuts on the institution. Second, in 2013-2014 the university booked the full impact of the Voluntary Severance Program along with other one-time severance payments associated with 2013-2014 budget cuts. Finally, and based on current assumptions of no increase to the Campus Alberta grant, the 2014-2015 consolidated budget has factored in seven per cent budget cuts to the academic units and eight per cent budget cuts to the administrative units in order to bring the university's consolidated budget into a balanced position.

The Statement of Operations (consolidated budget) under the PSAS, and the Statement of Cash Flows are presented in tables 8 and 9 on pages 168 and 169.

TABLE 4 CONSOLIDATED BUDGET, 2014-2015 (\$,000)

	2013-14		Budget	Projections		
	Approved Budget ¹	Prelim. Actuals	2014-15	2015-16	2016-17	2017-18
Revenue:						
Provincial Government	851,069	864,804	861,492	872,003	868,350	871,773
Federal and Other Government	191,394	186,358	188,670	194,005	204,245	210,118
Tuition and Related Fees	301,630	304,356	313,594	322,177	329,290	340,028
Grants and Donations	127,688	122,663	133,247	129,672	127,306	130,584
Investment Income	48,870	56,610	58,900	64,807	67,920	70,485
Sales of Services and Products	184,023	185,515	192,917	196,841	202,599	205,837
Total Revenue	1,704,674	1,720,306	1,748,821	1,779,504	1,799,709	1,828,826
Expense:						
Salaries	885,029	896,356	875,530	885,737	884,691	892,597
Employee Benefits	179,957	181,062	177,093	181,743	188,319	193,894
Materials, Supplies and Services	299,406	289,930	292,172	300,426	298,150	303,636
Utilities	43,143	50,338	48,506	50,567	53,563	52,902
Maintenance	72,102	72,006	84,259	80,596	72,893	71,339
Scholarships and Bursaries	93,170	87,141	85,158	87,644	90,279	93,060
Amortization of Capital Assets	176,555	169,461	176,605	180,571	182,068	183,367
Total Expense	1,749,363	1,746,293	1,739,323	1,767,285	1,769,963	1,790,795
Excess of Revenue Over Expense	(44,689)	(25,988)	9,498	12,220	29,746	38,031
Transfer from Endowment	10,000	10,000	10,000	10,000	10,000	10,000
Investment in Capital Assets	(17,709)	(6,754)	(73,856)	(29,643)	(18,318)	(292)
Increase (decrease) for the Year	(52,399)	(22,742)	(54,358)	(7,423)	21,427	47,739
Unrestricted Net Assets, Beginning of Year	(76,132)	(76,130)	(98,872)	(153,230)	(160,653)	(139,226)
Unrestricted Net Assets, End of Year	(128,531)	(98,872)	(153,230)	(153,230)	(139,226)	(91,487)

¹ Budget revenue distribution restated under PSAS. Amortization of deferred capital contribution has been re-allocated to revenue sources - there is no change to the revenue total.

CONSOLIDATED REVENUE

Budgeted revenue for 2014-2015 is \$1,749 million. As illustrated in Figure 16, 49 per cent or \$860 million comes from the Government of Alberta, mostly through the Campus Alberta grant, sponsored research funding, and capital funding. Of the \$861 million, \$591 million represents the Campus Alberta Grant, the primary source of unrestricted funding for the university's day-to-day operating activity. The 2014-2015 budget has been prepared on the assumption that there will be no increase to the Campus Alberta grant. If there is an increase to the Campus Alberta grant, the university is committed to applying that increase, dollar for dollar, to reducing the planned budget cuts factored into the budget.

The federal and other government revenue of \$189 million largely reflects the funding received by the university in support of its research mandate. This revenue is budgeted to be marginally greater than the 2013-2014 preliminary actuals. Any change in this revenue source is driven 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 number and quality of faculty, the research environment, and administrative support the university provides them.

Tuition and related fees are budgeted at \$314 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 2013, pursuant to the provincial tuition fee regulation, the Board of Governors approved a one per cent increase to general tuition fees, program fee differentials, and market modifiers, and an effective five per cent increase in undergraduate international tuition fees including international program differentials, course differential and market modifiers. The one per cent increase applies to 2012-13 general tuition fee levels due to government's 2013 decision to freeze tuition at 2012-13 levels. The budget has factored in a one per

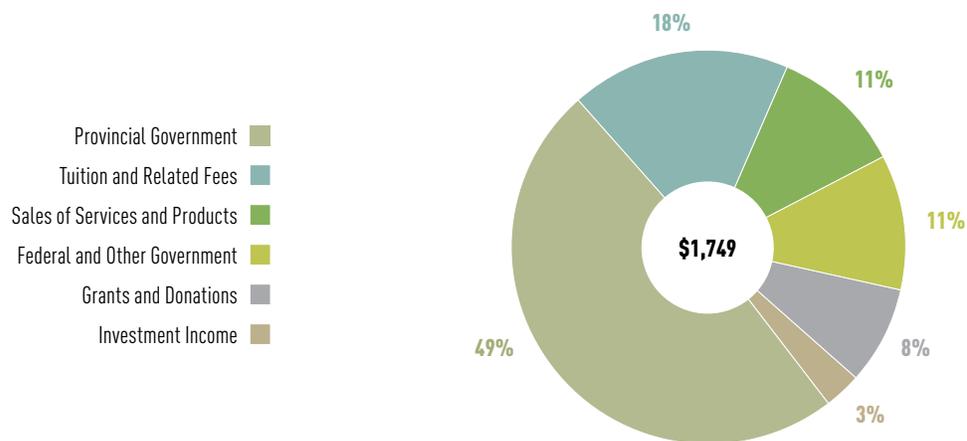
cent increase to all mandatory non-instructional fees with the exception of the athletics and recreation fee. Through a comprehensive student consultation process, the Faculty of Physical Education and Recreation has proposed an increase of \$16.38 per term to the athletics and recreation fee. The non-permanent CoSSS fee is budgeted to generate \$12 million of revenue in 2014-2015. For 2013-2014 the government provided the university with one-time funding of \$4 million to make up the revenue shortfall as a result of the tuition freeze. For 2014-2015, the university has assumed that it will receive a one-time base adjustment of \$4 million to replace the lost tuition revenue on a permanent basis. This assumption reflects a \$4-million risk to the university's budgeted revenue.

The fourth-largest source of revenue comes from sales of services and products, representing 11 per cent of

total consolidated revenue, or \$193 million. This revenue is primarily derived from ancillary operations such as residence services, the bookstore, parking, and food services. For 2014-2015, these revenues were adjusted based on a board-approved weighted increase to residence fees of 3.76 per cent at all campuses, with a base increase of 1.75 per cent to most products, and adjustments to parking rates of 1.14 per cent. 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.

The other sources of consolidated revenue for 2014-2015 include grants and donations of \$133 million, and investment income of \$59 million.

FIGURE 16 CONSOLIDATED REVENUE BUDGET, 2014-15 (\$MILLION)



CONSOLIDATED EXPENSE

For 2014-2015, consolidated expense is budgeted at \$1,739 million. The budgeted expense for 2014-2015 reflects expenditure reductions of \$56 million in the operating fund including a seven per cent budget cut to the faculties and an eight per cent budget cut to administrative units. These cuts have been distributed throughout the various expense categories based on previous trends on where cuts have been applied. The expenditures also reflect further one-time severance payments of approximately \$14 million in response to the faculty and administrative unit budget cuts.

As Figure 17 illustrates, investments in salaries and benefits to maintain teaching, research, and other critical activities account for 60 per cent of total expense. The salary and benefit expense lines reflect a combination of the implementation of the contractually agreed to salary and merit adjustments (1.65 per cent and two per cent respectively), the inflationary costs of benefits as well as that portion of the budget cuts that have been applied to positions. The net effect of these changes is an overall \$25-million reduction in salary and benefit expense from the 2013-2014 preliminary actuals.

Of significant concern to the university is the rate of increase to the university's benefit program costs including its pension plan contribution rates. Although total benefit expense is budgeted to decline in 2014-2015 from 2013-2014 due to the reduction in staff, benefit program costs continue to escalate. For example, the university's 2014-2015 benefit plan costs are budgeted to increase by 7.2 per

cent from the 2013-2014 estimated actuals. At the same time, with continuing uncertainty in the equity markets, historically low interest rates, unfunded liabilities and actuarial reviews, the university is forecasting continuing increases in pension plan contribution rates. Although a relatively small increase in pension plan contributions is budgeted for 2014-2015, over the following three years, pension plan contributions are forecast to increase 22 per cent. The Universities Academic Pension Plan board undertook negotiations to address this challenge, but to date those efforts have not come to fruition.

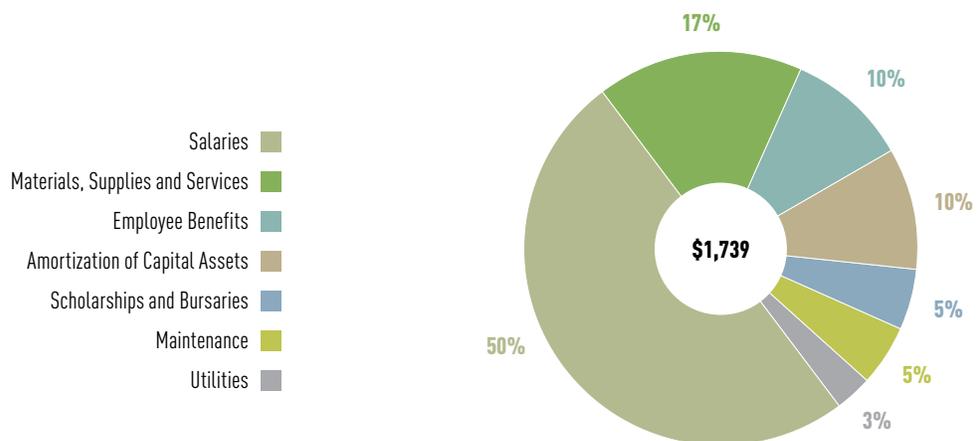
The university's next largest expense is materials, supplies, and services. Budgeted at \$292 million, these expenses provide essential support across the campuses, including information systems and technology, research expenditures, library resources, maintenance, and day-to-day operations such as insurance premiums, communications, and classroom support. This expense line also includes the costs of goods sold and recovered. In budgeting for these expense items, the university continues to face the challenge whereby inflation within higher education significantly exceeds general inflationary pressures. Examples of this include library collections increasing by 6.9 per cent, information technology licences increasing by 6.1 per cent, waste removal increasing by four per cent, a broad range of industrial supplies increasing by five to eight per cent, and various health and safety maintenance contracts increasing in the range of 2.2 to 2.7 per cent.

On a continuous basis, the university implements plans and strategies that maximize administrative efficiencies in delivering vital services in direct support of the university's core mission. In fact, the university is required to track and report to the provincial government the proportion of operating expenditures directed toward administrative purposes over a two-year cycle. The provincial government establishes the criteria for the specific expenditures that must be included in the calculation and sets five per cent as the benchmark for administrative expenditures as a proportion of operating expenditures. Based on the ministry's own criteria, for the 2010-11 to 2011-12 cycle, the university allocated only 3.8 per cent of its expenditures for administrative purposes versus the maximum target allocation of five per cent.

A further significant expense in the consolidated budget is \$177 million for the amortization of capital assets. Under PSAS, amortization is an annual expense that 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 2014-2015, scholarships and bursaries expense are budgeted at \$85 million, marginally less than the 2013-2014 preliminary actuals. The 2014-2015 scholarship budget reflects reductions that were applied in 2013-2014, plus an adjustment based on a lower than anticipated uptake of scholarships and bursaries by students. Going forward, the university is committed to growing its scholarships and bursaries through advancement activities.

FIGURE 17 CONSOLIDATED EXPENDITURE BUDGET, 2014-15 (\$MILLION)



Operating Fund

In an effort to increase the transparency of the budgets, in addition to the consolidated budget, for 2014-2015 the university has included budgets by fund including the operating fund (see Table 5).

As noted, the operating fund is unrestricted and is used to support the primary teaching and learning activities of the university. To ensure alignment of the operating fund with the consolidated budget, this fund is presented using PSAS and therefore includes the amortization of capital assets.

For 2014-2015 the university has budgeted total operating fund revenues of \$998 million and total operating fund expense of \$1,011 million for an operating fund deficiency of \$13 million. The operating fund has been prepared based on the core assumptions of no increase to the Campus Alberta grant, along with the implementation of budget cuts to the faculties and administrative units. In the event of any increase in the Campus Alberta grant, those dollars will be used to offset and reduce the impact of the planned budget cuts. For every one per cent increase in the grant, the university will be able to reduce budget cuts across the institution by 0.7 per cent.

The two primary sources of revenue within the operating fund are the Campus Alberta grant, and tuition and related fees totalling \$903 million or 90 per cent of the operating fund revenue. The remaining 10 per cent of revenue is derived from federal and other government funding, donations and investment income, and sales of services and products.

Within the operating fund, 76 per cent of expenses are associated with salaries and benefits. Ten per cent of expenses are associated with the materials, supplies, and services that support teaching and learning, with the remaining 14 per cent of expenses associated with utilities, maintenance, amortization expense, and scholarships and bursaries.

In November 2013, the provincial government announced a 2.6 percent or \$14.4-million increase to the university's 2013-2014 base Campus Alberta grant. Because the funding was received late in the fiscal year, the university did not make any base allocations in the 2013-2014 budget. Instead, the university will make one-time investments of \$14.4 million to address immediate budget pressures, and will also make permanent base allocations of \$14.4 million in the 2014-2015 budget, for a total investment in the academy of \$28.8 million.

One-time investments will mitigate the impact that 2013 provincial budget cuts have had on the teaching and learning enterprise of the U of A. A total of \$2.6 million was immediately reinvested in the 2013-2014 budget for graduate assistantships to maintain expected graduate student support, and ensure that labs, tutorials and courses led by graduate students are maintained to the greatest extent possible. In 2014-2015, this one-time investment will become a permanent base allocation.

One-time funding of \$3 million will also be distributed to faculties in 2014-2015 to seed revenue generation projects that will assist in easing enrolment pressures, maintaining access, and enabling strategic faculty and staff renewal. New revenue streams will, in future, increase faculties' ongoing capacity to hire faculty and staff needed to maintain student access to programs and provide a high-quality educational experience to all enrolled students. A further one-time investment of \$5.1 million will be allocated over a three-year period to fund continuing efforts to develop and offer high-quality digital learning options for students in both blended and massive online open course formats. The balance of the one-time funding (\$3.7 million) will be allocated to various academic and administrative initiatives that will assist the

TABLE 5 CONSOLIDATED BUDGET 2014-15 BY FUND (\$'000)

	2013-14		Consolidated Budget by Fund, 2014-15					
	Approved Budget ¹	Prelim. Actuals	Operating	Ancillary	Research ²	Capital ²	Special Purpose	TOTAL
Revenue:								
Provincial Government	851,069	864,804	591,100	-	100,990	110,272	59,131	861,492
Federal and Other Government	191,394	186,358	5,544	-	173,708	8,966	452	188,670
Tuition and Related Fees	301,630	304,356	311,624	1,970	-	-	-	313,594
Grants and Donations	127,688	122,663	8,788	-	87,463	28,802	8,194	133,247
Investment Income	48,870	56,610	15,741	2	24,883	-	18,273	58,900
Sales of Services and Products	184,023	185,515	65,265	102,681	20,671	-	4,300	192,917
Total Revenue	1,704,674	1,720,306	998,062	104,653	407,715	148,039	90,351	1,748,821
Expense:								
Salaries	885,029	896,356	624,202	24,660	185,409	-	41,259	875,530
Employee Benefits	179,957	181,062	139,575	5,090	23,982	-	8,446	177,093
Materials, Supplies and Services	299,406	289,930	97,409	41,869	134,782	-	18,112	292,172
Utilities	43,143	50,338	40,457	6,002	2,048	-	-	48,506
Maintenance	72,102	72,006	29,977	22,106	3,537	28,498	140	84,259
Scholarships and Bursaries	93,170	87,141	33,467	-	41,697	-	9,994	85,158
Amortization of Capital Assets	176,555	169,461	46,386	10,677	-	119,542	-	176,605
Total Expense	1,749,363	1,746,293	1,011,474	110,404	391,454	148,039	77,951	1,739,323
Excess of Revenue Over Expense	(44,689)	(25,988)	(13,411)	(5,751)	16,261	-	12,400	9,498
Transfer from Endowment	10,000	10,000	-	-	5,800	-	4,200	10,000
Investment in Capital Assets	(17,709)	(6,754)	34,882	3,892	(1,579)	(111,052)	-	(73,856)
Increase (decrease) for the Year	(23,342)	(41,139)	21,471	(1,859)	20,482	(111,052)	16,600	(54,358)
Unrestricted Net Assets, Beginning of Year	(76,132)	(76,130)	(218,056)	46,700	49,862	22,621	-	(98,872)
Unrestricted Net Assets, End of Year	(128,531)	(98,872)	(196,585)	44,841	70,345	(88,431)	16,600	(153,230)

¹ Budget revenue restated under PSAS. Amortization of deferred capital contribution has been re-allocated to revenue sources - there is no change to the revenue total.

² Research and Capital funds includes both restricted and unrestricted activity.

university to maintain and manage current and predicted levels of student enrolment. This includes investments in information technology infrastructure, the Registrar's Office, libraries, and other areas that provide vital support to the core teaching and research activities of the institution.

Base allocations, totalling another \$14.4 million, will also be made in the 2014-2015 budget. As already mentioned, the first priority is funding for graduate assistantships, and thus, the one-time allocation of \$2.6 million to support graduate assistantships will become a permanent base allocation. A further \$5 million will be allocated by the Provost's Office to faculties to provide continued assistance in the hiring and retention of professors and other faculty costs associated with delivering excellence in research and teaching. \$1 million will be allocated for core supports for students, researchers, and faculties.

The U of A recognizes that public funding models for universities are shifting and that new financial realities demand that all post-secondary institutions seek multiple sources of revenue to support their core mission. Stimulating ideas for revenue generation has been a major priority of university senior leaders over the last year. Turning ideas into reality is, in many cases, a long-term endeavour requiring dedicated seed funding. As such, \$6 million will be available to faculties to help implement revenue generation initiatives. Another \$6-million fund can be accessed by faculties as an internal loan to be repaid as new revenue streams come online. With \$3 million in one-time funding, plus \$6 million base allocation and access to a further \$6 million in a repayable loan, faculties will have access to \$15 million in funding to strategically plan for and generate new

revenue. The proposed objective is that faculties will raise \$2 of new net revenue for every \$1 provided as seed money. If successful, the university will generate \$30 million of new net revenue over time that will be used to increase faculty numbers, reduce student-to-professor ratios, and continue strengthening the overall academy.

Finally, a further \$6.1 million in base funding will be transferred to the faculties in 2014-2015 as a result of changes to the revenue-sharing formula for international differential fees and the indirect costs of research for grants and contracts. Previously that \$6.1 million in revenue flowed to the centre to support core administrative services. However, in an effort to further mitigate budget cuts in the faculties and to provide them with additional incentives to generate new revenues, this base funding has been transferred to them.

The approach that the university has taken will enable it to achieve three primary goals: one, address 2013-2014 enrolment pressures; two, mitigate the impact of the 2014-2015 budget cuts; and three, leverage the government's reinvestment to increase the university's capacity to raise revenues and continue to provide high-quality educational experiences.

The university has taken significant steps in 2013-2014 and 2014-2015 in an effort to move toward a structurally balanced operating fund. However, the ability to sustain a structurally balanced position will be subject to the university's capacity to generate these new and ongoing revenue streams while continuing to manage ongoing operating expenditures.

Operating Fund 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.

2014-2015 BUDGET ASSUMPTIONS

Key highlights of the university's revenue assumptions include:

- a zero per cent adjustment to the Campus Alberta grant. Any increase in the grant will be used to offset budget cuts.
- an estimated \$4-million base increase to the Campus Alberta grant to replace tuition revenue following government's decision to freeze tuition at 2012-13 levels
- a one per cent increase in general tuition fees and graduate student international differential fees and an effective five per cent increase to undergraduate international student tuition fees
- continued phased approach to full implementation of market modifier tuition
- a one per cent increase to all mandatory non-instructional fees with a proposed \$16.38 per term increase to the athletics and recreation fee
- marginal growth in investment income

Key highlights of the university's expenditure assumptions include:

- salary increases driven by negotiated salary settlements (1.65 per cent across the board increase and an average two per cent increase for merit)

- employer-paid non-statutory benefit cost increases averaging 7.2 per cent
- a seven per cent overall average cut to faculties and eight per cent to administrative units
- one-time severance costs associated with budget cuts
- marginal decline in utility expenditures
- stable scholarship funding

2014-2015 BUDGET SENSITIVITIES

Revenue Approximate Value

- one per cent on Campus Alberta grant: \$5.8 million
- 0.25 per cent on short-term interest rate: \$1.3 million
- one per cent increase on credit tuition: \$2.5 million

Expense Approximate Value

- one per cent increase in salary settlements: \$5.5 million
- one per cent increase in benefits: approximately \$1.4 million
- \$1/gigajoule increase in natural gas: \$2.3 million (ancillary budget)
- one per cent operating budget reduction: \$7 million

FORECAST BUDGET ASSUMPTIONS

The university has used the following forecast budget assumptions.

Revenue assumptions:

- There will be no increase in the Campus Alberta grant for each of 2015-2016 to 2017-2018.
- Regulated tuition will increase annually by Alberta CPI (approximately two per cent per year) as confirmed by the ministry.
- All non-regulated tuition are forecast to increase annually at rates more closely associated with the actual cost increases in the delivery of the university's academic programs. (approximately 3 to 5 per cent)

- All mandatory non-instructional fees will increase by a minimum of Alberta CPI.
- Interest income will remain at historically low levels.

Expenditure assumptions:

- There will be a revenue gap of one per cent per year between 2015-2016 and 2017-2018.
- Changes to ATB salary increases, merit and benefit costs will be subject to collective agreement negotiations for 2015-2016 and beyond.
- All other expenditures are forecast to increase in the range of two to seven per cent.

Institutional Budget Risks

As a result of the current market conditions, government funding levels, and uncertainty around key government policy decisions, the budget risks to the university are substantial.

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

- **Campus Alberta Grant.** Although greatly appreciated, the 2.6 per cent mid-year increase to the Campus Alberta will not eliminate the need for budget cuts in 2014-2015. A return to multi-year grant increases of two to four per cent is required to avoid ongoing disruption to the institution. Further risks are associated with the current funding model review by government and any changes that may bring to the university's Campus Alberta grant.
- **Tuition revenue.** The university has budgeted for \$4 million in base replacement funding associated with the 2013-2014 tuition freeze. This source of funding is at risk. Tuition policy is currently under review by government. Subject to the outcome of this review, the results could negatively affect the ability of the university to responsibly manage tuition and fee levels in response to costs, competition, and market conditions.
- **Interest Rates.** Interest rates in the immediate to mid-term are forecast to remain at historically low levels.
- **Exchange Rates.** In recent months, the Canadian dollar has declined against the U.S. dollar. Although a lower Canadian dollar benefits the provincial government in terms of revenue and reduces some international students' cost of tuition, a declining Canadian dollar also increases the costs of library and lab materials.
- **Alternative Revenue.** The university must increase its capacity to generate alternative sources of revenue to offset changes to grant funding, tuition revenue limitations, and historically low investment income returns. However, these strategies will take several years to fully implement and may be subject to significant fluctuations.
- **Compensation.** Compensation levels including negotiated changes to ATB increases and the cost of merit must be negotiated in the context of new levels of government funding support and the capacity of the university to generate new sources of revenue. The long-term financial sustainability of the university is at risk if an alignment between compensation expenditures and revenue cannot be achieved.
- **Benefit Costs.** The current rate of benefit cost increases is unsustainable given the university's limited ability to increase revenues. There is a need to examine the level of employer contributions to the staff benefit programs.
- **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 become unsustainable.

Capital and Ancillary Budgets

CAPITAL

While the university received nominal new one-time funding grants, positive project variances, along with borrowing, internal funding, and partnerships, has allowed the university to continue an active capital program. For 2014-2015, the university's capital budget reflects \$176 million in capital projects and a further \$19 million in capital program spending, for a total capital budget of \$195 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 aligned with the goals and objectives within this 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 2014-2015. The major capital projects at various stages of construction for the fiscal year include ongoing construction and fit-up of the Innovation Centre for Engineering, construction of the Physical Activity and Wellness Centre, and continued residential development within East Campus Village and St. Joseph's College. These projects account for \$120 million of the \$176 million in capital projects. The capital budget also includes just over \$19 million in capital program spending. This includes \$17 million in funding from the provincial infrastructure maintenance program (IMP), which is \$5 million less than the \$22 million previously budgeted for IMP funding.

Detailed information on the university's capital plan can be found on pages 117 to 146.

TABLE 6 CAPITAL BUDGET 2014-2015

	Prior Years Actuals	Forecast to Complete			Total Estimated Final Cost
		2013-2014 Preliminary	2014-2015	Future Years	
Capital Projects (underway or proceeding):					
Agricultural Research Infrastructure - St Albert / Kinsella / Mattheis	8,080	3,610	500	-	12,190
Medical Isotope and Cyclotron Facility	28,135	865	-	-	29,000
Dentistry Pharmacy Redevelopment	3,878	610	1,212	-	5,700
Devonian Botanic Garden - Infrastructure Upgrades ¹	-	-	5,000	8,000	13,000
Leadership Residence	-	750	25,950	9,000	35,700
East Campus Village Infill Housing Phase I	9,139	15,387	500	-	25,026
East Campus Village Infill Housing Phase II	-	500	5,000	-	5,500
St Joseph Women's Residence	-	3,000	27,500	4,500	35,000
Edmonton Clinic Health Academy	370,565	2,196	6,950	9,300	389,011
Federal Building (BARD replacement)*	-	6,000	12,000	16,650	34,650
HM Tory - Phase 2 Building Systems Upgrade	6,020	2,021	400	-	8,441
HRIF Project (Li Ka Shing / Katz Group) Base Bldgs	234,546	75	-	-	234,621
HRIF Project (Li Ka Shing / Katz Group) Fit Outs	105,563	1,956	6,800	3,500	117,819
HRIF Project (CTRIC cGMP Fit Out - Li Ka Shing Level 7)	12,600	3,097	100	-	15,797
Innovation Centre for Engineering (ICE) Shell and Core	52,506	18,178	45,025	18,691	134,400
Pharmacy Fit Up	32,751	12,260	2,130	49	47,190
Physical Activity & Wellness Centre (PAWC)	8,012	24,530	21,458	4,000	58,000
Scientific Support Facilities	45,956	15	-	-	45,971
South Campus Infrastructure - Phase I	4,639	814	-	-	5,453
South Campus - Intersection 63 Ave / 122 Street	39	-	3,889	-	3,928
South Campus Parkade	-	-	-	41,000	41,000
Students Union Building	-	6,000	7,000	-	13,000
Other Capital Projects	541,140	5,232	4,404	6,729	557,505
Total	1,463,569	107,096	175,818	121,419	1,867,902
Annual Capital Programs:					
Infrastructure Maintenance Program ¹			17,405		
Envision Program**			2,000		
Total			19,405		
TOTAL			195,223		

¹ Infrastructure Maintenance Program had ongoing funding *still pending formal GOA approval to proceed ** Envision programs overlap, therefore, no prior years amount is included
 NB: The Capital Budget was finalized on October 10, 2013, and contains values which may not align with or may not include projects identified in the CIP.

ANCILLARY OPERATIONS

The university runs several ancillary operations: Ancillary Services (Residence Services, Hospitality Services, Parking, Real Estate and Commercial Property Management Services, ONEcard) the Bookstore, Enterprise Square, 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.

Ancillary Services

Ancillary Services provides services to the university's campuses in support of the vision and mission. In 2013-2014, Ancillary Services completed a number of major initiatives, including the opening of 244 new bed spaces in East Campus Village, commencement of Lister residence operations as a first-year and transition student-only community, and completion of Lister dining hall renovations. The ONEcard office was relocated to HUB Mall in partnership with the Students' Union Infolink service. For 2014-2015, residence rates will be increased by a weighted average of 3.76 per cent at all campuses, with a base increase of 1.75 per cent to most products. Annual parking rates were increased by 1.14 per cent. Several

challenges facing Ancillary Services include deferred maintenance, particularly within Michener Park and the older units within East Campus Village; inflation rates of some operating costs; the anticipated reduction on parking demand; the difficulty of fully funding the Transportation Demand Management programs; and the fact that residence and parking rates are nearing market rates, which will reduce revenue generation opportunities.

Bookstore

The Bookstore underwent significant restructuring and reorganization in 2013-2014 in an effort to reduce costs and respond to continuing market pressures. These steps are beginning to achieve the desired results; however the Bookstore continues to face a number of substantive challenges. These include the need for store refurbishment and updating, the impact of the SUB renovations on Bookstore space, and the need for a new point-of-sale system, all of which have capital cost implications. As well, there is the continuing pressure from the growth of e-books and their impact on gross revenues and overall operating costs within the different branches of the Bookstore. Bookstore management is continuing to develop strategies 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. The majority of the building is occupied, with the exception of approximately 9,000 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. Enterprise Square has the cash flows to maintain the necessary operating and capital reserves. Challenges going forward include the renewal of the Rogers lease in 2015 and the impact on the Faculty of Extension if classroom space in the adjoining 102 St. Centre is lost due to proposed office space development for that site.

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

Utilities 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. Going forward major priorities for the Utilities ancillary include adding a co-generation unit to provide power and steam capacity in the Heating Plant located on North Campus and continuing investigation of a district energy plant for South Campus.

Ancillary Budgets, 2014-2015

TABLE 7 ANCILLARY BUDGET 2014-2015 (\$'000)

	2013-14		Budget 2014-15	Projections		
	Budget	Forecast		2015-16	2016-17	2017-18
Augustana: Residence, Conferencing, and Food						
Revenue - Internal	50	53	54	56	57	58
Revenue - External	2,956	3,059	3,133	3,200	3,265	3,331
Total Revenue	3,006	3,112	3,187	3,256	3,322	3,389
Reserve Balances:						
Operating Closing Balance	822	808	808	808	808	808
Capital/Maintenance Closing Balance	3,629	3,737	3,786	3,829	3,875	3,989
Bookstore						
Revenue - Internal	3,162	2,196	1,647	1,680	1,714	1,748
Revenue - External	22,855	22,157	22,600	23,052	23,513	23,983
Total Revenue	26,017	24,353	24,247	24,732	25,226	25,731
Reserve Balances:						
Operating Closing Balance	(2,925)	(3,120)	(3,345)	(3,396)	(3,419)	(3,409)
Capital/Maintenance Closing Balance	(315)	(315)	(315)	(315)	(315)	(315)
Ancillary Services*						
Revenue - Internal	7,662	11,655	11,856	12,072	12,249	12,444
Revenue - External	53,796	49,855	52,264	54,273	56,360	58,348
Total Revenue	61,458	61,510	64,120	66,345	68,609	70,792
Reserve Balances:						
Operating Closing Balance	1,716	1,511	1,821	2,395	2,987	3,666
Capital/Maintenance Closing Balance	20,542	18,934	21,516	25,586	11,462	17,403

	2013-14		Budget 2014-15	Projections		
	Budget	Forecast		2015-16	2016-17	2017-18
University Health Services						
Revenue	5,677	6,220	6,345	6,437	6,522	6,608
Reserve Balances:						
Operating Closing Balance	353	377	229	103	8	1
Capital/Maintenance Closing Balance	200	200	200	200	200	191
Utilities						
Revenue - Internal	72,949	53,516	50,857	53,236	56,737	55,179
Revenue - External	21,507	21,799	20,311	21,373	23,153	22,495
Total Revenue	94,456	75,316	71,168	74,610	79,890	77,674
Reserve Balances:						
Operating Closing Balance	9,566	4,365	3,065	1,765	1,765	1,765
Capital/Maintenance Closing Balance	19,147	20,203	14,503	8,803	8,803	8,803
TOTAL REVENUE	186,716	170,510	169,067	175,379	183,569	184,194
Reserve Balances:						
Operating Closing Balance	8,693	3,942	2,579	1,675	2,150	2,831
Capital/Maintenance Closing Balance	35,408	42,758	39,689	38,102	24,024	30,070
Total	44,101	46,700	42,268	39,778	26,174	32,902

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

Statement of Operations and Statement of Cashflows

TABLE 8 STATEMENT OF OPERATIONS BUDGET FOR THE YEARS ENDING MARCH 31, 2015 TO 2018 (IN THOUSANDS OF DOLLARS)

	Estimated Actual 2014	Budget March 31, 2015	Forecast March 31, 2016	Forecast March 31, 2017	Forecast March 31, 2018
Revenue:					
Government of Alberta grants	864,803	861,492	872,003	868,350	\$871,773
Federal and other government grants	186,358	188,670	194,005	204,245	210,118
Student tuition and fees	304,356	313,594	322,177	329,290	340,028
Sales of services and products	185,515	192,917	196,841	202,599	205,837
Donations and other grants	122,663	133,247	129,672	127,306	130,584
Investment income	56,610	58,900	64,807	67,920	70,485
Total Revenue	1,720,305	1,748,820	1,779,505	1,799,710	1,828,825
Expense:					
Instruction and non-sponsored research	1,004,285	996,711	1,011,447	1,011,900	1,017,819
Sponsored research	409,463	421,698	436,153	451,222	466,933
Facility operations and maintenance	117,607	126,853	124,176	118,589	115,300
Special purposes	109,863	83,656	82,017	80,511	81,845
Ancillary enterprises	105,074	110,404	113,492	107,741	108,899
Total Expense	1,746,292	1,739,322	1,767,285	1,769,963	1,790,796
Operating surplus (deficit)	(25,987)	9,498	12,220	29,747	38,029
Transfer from endowments	10,000	10,000	10,000	10,000	10,000
Change in accumulated surplus	(15,987)	19,498	22,220	39,747	48,029
Accumulated surplus, beginning of year	386,101	370,114	389,612	411,832	451,579
Accumulated surplus, end of year	370,114	389,612	411,832	451,579	499,608

TABLE 9 STATEMENT OF CASH FLOWS BUDGET FOR THE YEARS ENDED MARCH 31, 2013 TO 2016 (IN THOUSANDS OF DOLLARS)

	Actual 2013	Estimated Actual 2014	Budget 2015	Forecast 2016
Operating Transactions				
Operating surplus (deficit)	25,412	(25,987)	9,498	12,220
Add (deduct) non-cash items:				
Amortization of capital assets	166,387	169,461	176,605	180,571
Expended capital recognized as revenue	(112,697)	(114,669)	(119,542)	(123,427)
Losses (gains) on disposal of capital assets	964	-	-	-
Inventory writedown	300	-	-	-
Increase in employee future benefits	9,252	5,149	3,091	1,337
Total non-cash items	64,206	59,941	60,154	58,481
(Increase) decrease in accounts receivable	41,135	15,480	13,527	11,821
(Increase) decrease in inventories and prepaid expenses	(32)	268	262	257
Increase (decrease) in accounts payable and accrued liabilities	(25,050)	(8,048)	(7,715)	(7,396)
Increase (decrease) in deferred revenue, less expended capital recognized as revenue	31,820	22,434	37,762	15,621
Cash provided by operating transactions	137,491	30,134	43,836	20,303
Capital Transactions				
Acquisition of capital assets	(171,889)	(196,851)	(256,777)	(173,167)
Proceeds on sale of capital assets	163	-	-	-
Cash provided by (applied to) capital transactions	(171,726)	(196,851)	(256,777)	(173,167)
Investing Transactions				
Sales of investments, net of purchases	9,052	31,883	66,855	17,311
Endowment investment earnings (loss)	(1,191)	21,998	23,090	24,261
Cash provided by (applied to) investing transactions	7,861	53,881	89,945	41,572
Financing Transactions				
Endowment donations	30,096	31,693	33,752	35,946
Debt - new financing, net of repayments	(7,491)	48,256	24,700	(6,658)
Cash provided by (applied to) financing transactions	22,605	79,949	58,452	29,288
Increase (decrease) in cash and cash equivalents	(3,769)	1,067	5,108	(11,303)
Cash and cash equivalents, beginning of year	20,925	17,156	18,223	23,331
Cash and cash equivalents, end of year	\$17,156	\$18,223	\$23,331	\$12,028

RESOURCE AND RISK IMPLICATIONS

In November of 2013, the provincial government announced \$50 million in reinvestment in Alberta's publicly funded post-secondary institutions of which \$14.4 million was reinvested at the University of Alberta. As outlined in the budget chapter, the university will invest this money strategically in 2014-2015.

Notwithstanding this reinvestment, the university remains concerned about its capacity to realize its bold vision and at the same time contribute to the province's vision of an Alberta powered by innovation, ingenuity, and an entrepreneurial spirit. What is needed is a commitment to a long-term funding model that recognizes the unique aspects of a comprehensive academic research institution including the funding of graduate students, the research enterprise and the facilities that support not only the university's mandate, but also much of Campus Alberta.

COMMITMENT TO LONG-TERM SUSTAINABLE FUNDING

The 2013-2014 budget year was challenging, affecting all aspects of the university including its students, staff, faculty, alumni, donors, and strategic partners. In addition to dealing with the unanticipated cut to the Campus Alberta grant, there has been the uncertainty in government policy and funding support going forward. This has made all aspects of planning extremely difficult and any type of long-term strategic planning almost impossible. This lack of certainty affects the university's capacity to recruit and retain the brightest students and world-leading faculty. This uncertainty hinders the

ability of the university to attract new resources through donors, international consortia, and governments. The university is committed to expanding its resource base and generating new sources of revenue; however, stability in its base funding and an understanding of matching fund opportunities is critical in achieving this goal. Long-term predictability in the level of government funding will also help facilitate greater co-operation and co-ordination of activities within Campus Alberta.

❖ **The University of Alberta seeks from government three-year rolling commitments of increases to the Campus Alberta grant enabling all of Campus Alberta to more effectively plan and fulfil their post-secondary education mandates.**

INVESTING IN ALBERTA'S INNOVATION ENGINE

The university must continue to attract increasing 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.

Top universities in North America and around the world strive to achieve specific critical minimum target ratios including 1:3 graduate students to undergraduate students and 1:4 faculty members to graduate students. If the University of Alberta is to achieve these target ratios and position itself to compete internationally and meet the growing demands of the Alberta economy, new resources must be invested in post-doctoral fellows, graduate students, and new faculty positions.

❖ **The University of Alberta seeks government's commitment to the development of a funding envelope that supports and appropriately funds growth in the number of graduate students, post-doctoral fellows, and the required professorial positions.**

DIRECT COSTS OF THE RESEARCH AND INNOVATION ENTERPRISE

The university develops, acquires, and works to sustain core infrastructure and services for Alberta's research and innovation enterprise. Examples of this infrastructure include green houses and growth chambers; animal care facilities, which enable innovation and discovery related to human and livestock health; research stations that support sustainable agriculture and environment; highly specialized equipment for advanced imaging; and specialty fabrication labs for the design and manufacture of unique research equipment. In addition, there are core costs associated with the increasingly complex areas of intellectual property regulation, external research grant and contract negotiation, financial management, and accounting standards along with the critically important health, safety, and regulatory functions. 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 the university. Pre-commercialization development and testing for medical, health, and drug innovations could not be done without the provision of the facilities provided at the University of Alberta. These facilities are required for the discovery, translational, and pre-commercialization activities that we undertake internally and with private sector partners.

The current funding models and previous contributions to these costs are no longer sufficient to sustain the university's direct costs of the research and innovation enterprise. The university and CARI sector requires a long-term funding model that acknowledges and funds these critically important costs.

❖ **The University of Alberta seeks government's commitment to the provision of new targeted resources to fund the direct costs of the research and innovation enterprise.**

INVESTING IN THE DIGITAL ENVIRONMENT

The information and computing technologies infrastructure at the university is complex. It includes networks to connect buildings and campuses, wireless services, and additional specialized local networks. This infrastructure is the foundation of the university'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. There are many examples across the university, notably digitally supported programs in physical therapy and medicine. At the same time, the opportunities for the university to leverage digital technologies to enhance its efficiency and reduce administrative costs are substantial. These digitally supported academic programs as well as the opportunities to reduce administrative costs through the leveraging of technology, not only benefit the university but can also benefit Campus Alberta.

The government has several examples of the benefits associated with sharing the cost of various technologies. The university strongly supports this approach and believes that it should be expanded.

❖ **The University of Alberta seeks government's commitment to the provision of matching dollars in support of digital technologies that will enhance the learning and research environments and achieve efficiencies within the university while bringing benefits to Campus Alberta.**

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, advance projects that address the university's deferred maintenance liability, and repurpose space to address changes in pedagogy and increase research intensity. Going forward, the university has identified five priority areas for infrastructure investment, including deferred maintenance funding, renewal and repurposing, planning and development dollars, student and workforce housing, and capital funding for critical projects on each of the university's distinct campuses.

While the university has built a number of sustainable and leading-edge teaching and research buildings over the past 10 years, the university continues to maintain a number of buildings more than 40 years old (over 50 per cent of total buildings). Adequate funding to protect against infrastructure operational failures and safety concerns is vital for the university to avoid risks such as building closures and envelope failures. The university has modified its deferred maintenance priorities in response to the 2013-2014 cut that was made to the Infrastructure Maintenance Program. This reduction has put increased pressure on the need for additional long-term envelope funding of \$25 million to \$35 million per annum to address the university's renewal needs and does not account for reducing the current deferred maintenance liabilities.

We appreciate that government has had to limit new capital funding over the past few years, and the university has responded by seeking out alternate funding opportunities through strategic partnerships. To effectively develop, explore, and respond to partnership opportunities, significant planning and pre-design work is required. This pre-design work is critical in enabling the university to properly scope, budget, vet, and respond to 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.

Given continued fiscal constraint, the opportunity of leveraging the low cost of long-term borrowing, higher rates of investment returns, and a relatively stable construction market, the university has completed a white paper outlining the benefits of the creation of a sinking or revolving fund as a potential mechanism to provide stable, long term funding for various capital priorities. We will continue to work with government on further developing this model to assist in meeting the capital needs across the entire sector and freeing up budget dollars for other provincial priorities.

To address critical constraints in the U of A'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:

North Campus

- Innovation Centre for Engineering Fit-Out (\$42.7 M)
- Dentistry-Pharmacy Repurposing (\$250 M)
- Heating Plant Expansion (\$40 M)

Campus Alberta/Partnership

- BARD Fit-Out and Expansion (\$28.65 M)
- Edmonton Downtown Arts Campus (\$30 M/year operating lease: Lease term of 30 years)

South Campus

- Twin Arena (\$30 M)
- District Energy Plant - Phase 1 (\$127 M)

Augustana Campus

- Augustana Science Building (\$50 M)

Campus Saint-Jean

- Campus Saint-Jean Science Lab Renovation (\$15 M)

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.**

COMPLETING THE ACCESS TO THE FUTURE PROGRAM

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 help 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 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 that the remaining balance of the Access to the Future funds be paid out.

❖ **The university is seeking a payout of approximately \$400 million in yet unmatched donations within the Access to the Future Fund. Completing the match of donations in the program will 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, have required 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 university striking the right balance of undergraduate to graduate students to position the university as an internationally competitive research-intensive institution. In order to grow its graduate student numbers, the university needs the necessary funding support for graduate students and the capacity to grow its professoriate.
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. Previous and planned budget reductions may negatively affect the capacity of the university to attract and retain the appropriate number and type of staff.
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. Previous and planned budget reductions may negatively affect the capacity of the university to make the required investments in information technology.
5. 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 its strategic goals 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. At the same time, the university must have the capacity to sustain its core research and innovation infrastructure. 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, and permanent base funding to support core research infrastructure.

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 has increased. 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 attend the university arrive with their own expectations, abilities, talents, experiences, and levels 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. Previous and planned budget reductions may negatively affect the capacity of the university to provide the programs and services required for students to meet their potential.

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 its ability to fulfil its strategic objectives.



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— HENRY MARSHALL TORY, FOUNDING PRESIDENT, 1908

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