Advancing Commercialization and Talent (in research)

The report of the Research Commercialization Working Group

Alberta

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The Research Commercialization Working Group (RCWG)

Background

Post-secondary research is a critical element of an innovation ecosystem, driving economic diversification and growth through talent attraction and development, and through discovery and mobilization of new knowledge, ideas and products. Innovation happens in a system with post-secondary institutions (PSIs) creating new ideas and developing talent; businesses turning ideas into products and jobs; and governments setting priorities, establishing guidelines and metrics, and making targeted investments. Each is part of a comprehensive ecosystem that performs best when individual elements are strong and the links among them are vibrant.

The Government of Alberta is undertaking numerous initiatives to strengthen Alberta's research and innovation ecosystem. These include implementation of the Alberta 2030: Building Skills for Jobs (Alberta 2030) post-secondary system strategy; the development of an Alberta Technology and Innovation Strategy (ATIS); and creation of an Intellectual Property (IP) Framework, among other initiatives.

Mandate

The Research Commercialization Working Group was established in August 2021 to implement Goal 3 of the Alberta 2030 strategy and deliver an action agenda that contributes to Alberta's innovation capacity by supporting Alberta's post-secondary research and its commercialization potential to help drive economic diversification and growth through the discovery and commercialization of new knowledge, ideas and solutions.

The objectives of the RCWG included:

- Increasing commercialization of post-secondary research and addressing barriers that stand in the way of commercialization.
- Creating opportunities to convene post-secondary institutions, industry and potential investors to advance cutting-edge research and innovation as well as grow federal and industry investment in priority areas.
- Strengthening research and innovation planning, and work across entities to align provincial contributions for post-secondary research to promote commercialization to meet economic diversification priorities.
- Working with ecosystem partners to establish and fund a central entity to build and provide first-rate commercialization and entrepreneurship capabilities system-wide
- Supporting implementation of an intellectual property framework for Alberta, which will include fostering industry/institutional collaboration and adoption of faculty promotion and tenure policies to incentivize faculty to pursue entrepreneurial activities.

Membership

The Research Commercialization Working Group was composed of 19 members, including leaders from industry, post-secondary and other government and research organizations with expertise in smart agriculture, energy, emerging technologies and health. A list of working group members is attached as Appendix B.

The action agenda

The working group recognized Alberta's world-class research strengths and leading-edge expertise across four key globally competitive sectors: sustainable energy, smart agriculture, life sciences and health technologies, and emerging and enabling technologies. These priority research sectors were identified by the working group as areas where Alberta has a competitive advantage and where the province is positioned to be a national and global leader as well as preferred partner. The working group identified eight priority actions and 16 supporting actions for further consideration by government (see Appendix A: Action Agenda at a Glance)

Key Considerations

Change takes commitment. Momentum established by the working group on research commercialization must be maintained. Working group members emphasized the following considerations be reflected in tandem with the action agenda:

- We must continue to build stronger partnerships between industry, post-secondary institutions and government. We must build on strategic research that advances Alberta's diversification and economic competitiveness, and reduces barriers to research partnerships and collaboration between industry and academia.
- Long-term, stable investment is key to translating research into marketable products and attracting investment from all sources, including venture capital.
- A unified "Team Alberta" approach is essential to attracting federal research investment and talent to the province.

Shared responsibilities/shared investment and efforts for collective impact

The actions identified in the action agenda were developed collaboratively and are a collective responsibility of industry, post-secondary institutions (that are research organizations), research support agencies and government. The collaboration of all players is essential to ensuring the success of research commercialization in Alberta.

Next steps

The working group members emphasized the need to maintain momentum to leverage Alberta's existing and future research commercialization opportunities. Working group members are beginning implementation for immediate results. This will lead to more opportunities for the commercialization of post-secondary research and help attract more highly qualified research talent to the province.

Appendix A: Action Agenda at a Glance

OUTCOME STATEMENTS	PRIORITY ACTIONS	SUPPORTING ACTIONS
Alberta has long-term, stable research funding in place that supports and grows key RCWG priority research sectors	Establish/implement small business innovation research grants and accelerators to support Alberta small and medium-enterprise-driven research and development (and help attract additional follow-on funding and venture capital)	Focus on 3-4 key working group priority research sectors to advance through long-term funding (e.g., establish a pilot network of excellence)
Alberta has focused and coordinated research funding (a one government approach)	Coordinate government funding on RCWG priority research sectors (Funding is coordinated across Ministries toward stated outcomes)	Establish (pilot) networks of excellences in working group priority research sectors with near-term commercialization potential (e.g., bio-tech, animal and human health, hydrogen and smart ag) and emerging areas with mid-term commercialization potential (e.g., quantum, space tech, genomics) Promote Alberta's research and commercialization strengths through regular in-person Alberta missions to Ottawa Ensure that all applications for government funding, where appropriate, (includes producers/end user public sector, and private sector partnerships
Alberta has established mechanisms to increase research partnerships and coordinate industry-PSI collaboration	Convene ecosystem players regularly and often to enhance research partnership potential	Develop a "play to win" framework for working group research priority research sectors to enhance Alberta's competitive advantages Establish "living labs" and other 4P opportunities (start with agriculture)
Alberta has an Intellectual Property framework that helps to increase commercialization for post-secondary institutions and other innovators	Develop an intellectual property framework that aligns policies, raises awareness of intellectual property (when/where/how) and collaboration/hand-off opportunities to industry for market pull potential. Must be flexible to recognize sector specific requirements	Fund patent development processes based on jurisdictional best practices Create training / workshops and awareness for graduate students/faculty

OUTCOME STATEMENTS	PRIORITY ACTIONS	SUPPORTING ACTIONS
Alberta's research and innovation ecosystem is efficient and effective	Establish a central entity, with an integrated governance approach that includes rotational representation from all relevant stakeholders (government, post-secondary institutions, industry). Entity has functions for licensing and supporting the creation/usage of IP	Track research funding and programs for commercialization impact, reduce duplication in funding like projects, keeping line of sight between projects approved and overall funding objectives Identify leading and lagging indicators for the innovation ecosystem to track and grow commercialization Catalogue Alberta's research expertise along priority research sectors to maximize competitive advantage and "double down" on research partnerships and commercialization
	Government adopts a "Customer zero" approach where possible and appropriate for new made in Alberta technologies/innovations	
Alberta is a global hub for high quality skilled research talent	Create new experiences with industry for graduate students in emerging priority research sectors	Create opportunities for graduate students to participate in real life research at networks of excellence (e.g., Hydrogen Centre of Excellence)
	Attract global researchers and research teams in priority research sectors with an "Alberta advantage" approach (e.g., promote research successes, top infrastructure, teams and opportunities)	Create a provincially funded long-term research chair program in key working group priority research sectors Create new standards to attract top global researchers Create a concierge service for settlement "services" for research recruits and their families Create a "Return to Alberta" international alumni attraction strategy

Appendix B: Members of the Research Commercialization Working Group

Co-Chairs:

- Katherine White
  Deputy Minister of Jobs, Economy and Innovation[1]
- Lora Pillipow
  Deputy Minister of Advanced Education

Alberta Post-Secondary Representatives:

- Dr. Andrew Perrin
  Associate Vice-President, Athabasca University
- Dr. Aminah Robinson Fayek
  Vice-President Research and Innovation,
  University of Alberta
- Dr. William Ghali
  Vice-President Research and Scientific Director of the O'Brien Institute for Public Health, University of Calgary
- Dr. Dena McMartin
  Vice-President Research, University of Lethbridge
- Dr. Olle Lagerquist
  Vice-President Industry Solutions,
  Northern Alberta Institute of Technology (NAIT)
- Patrick Machacek
  Senior Representative Fundraising and Government Relations, Olds College
- Dr. Craig Kuziemsky
  Associate Vice-President Research, MacEwan University

Industry and Sector Representatives:

Energy

- Joy Romero
  Vice-President Technology,
  Canadian Natural Resources Ltd. (CNRL)
- Grant Strem
  Chairman and CEO, Proton Technologies Inc.

Smart Agriculture

- Jim Slevinsky
  Director Technology and Innovation, TELUS
- Dr. Mark Redmond
  CEO, Results Driven Agriculture Research (RDAR)

Health

- Rohit Joshi
  CEO, Brightsquid Secure Communications
- Dr. Michael Houghton
  Director, Li Ka Shing Applied Virology Institute

Emerging Technology

- Cam Linke
  CEO, Alberta Machine Intelligence Institute (Amii)
- Cory Janssen
  CEO and co-founder, AltaML

Advisory Representatives:

- Laura Kilcrease
  CEO, Alberta Innovates
- Andrew MacIsaac
  CEO and Board Member, Applied Pharmaceutical Innovation
- Alison Sunstrum
  Founder and CEO, CNSRV-X
- Kristina Williams
  President and CEO Alberta Enterprise Corporation
- Keith Jones
  Former GM and CFO of Rowland Seeds Inc.
- Alice Reimer
  Site lead, CDL-Rockies

[1] The Ministries of Advanced Education (AE) and Technology and Innovation (TI) share oversight for this report. AE shared oversight with Jobs, Economy and Innovation (JEI) but following reorganization of government departments in October 2022, JEI was split into different ministries including TI.