Alberta Innovates Technology Futures

AITF Research Funding Programs: status report

July 6, 2011
For Alberta Quantum-Nano Workshop

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State of the Nation 2010

A well-functioning STI system is built on the foundation of a strong talent pool, excellent research, public and private sector institutions that create value from research and development, strong systemic mechanisms for knowledge transfer and application, and successful commercialization of innovation within the private sector. It takes a well-functioning integrated system to move ideas from imagination to innovation to markets.

"Imagination to Innovation: Building Canadian Paths to Prosperity, " Canadian Science, Technology and Innovation Council, 2011

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Alberta Innovates Technology Futures

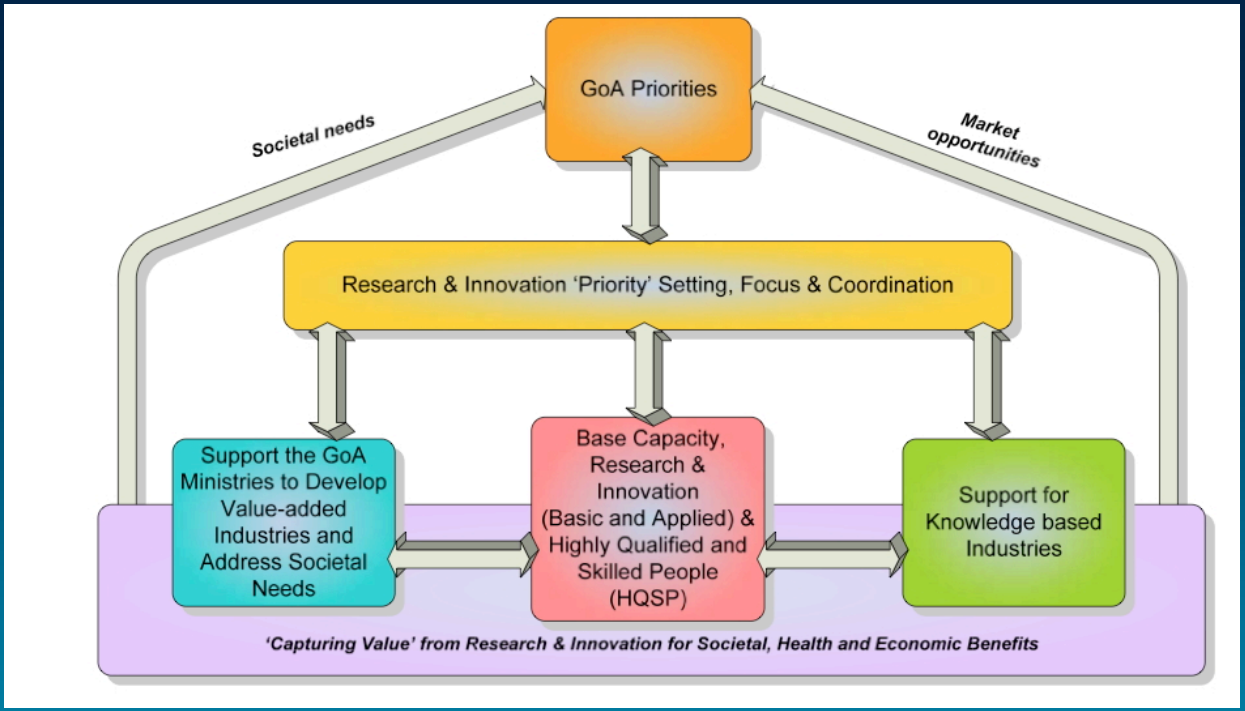
Overview

- Alberta Innovates heritage
- AITF research funding program heritage
- AITF research funding program structure
- AITF research funding status

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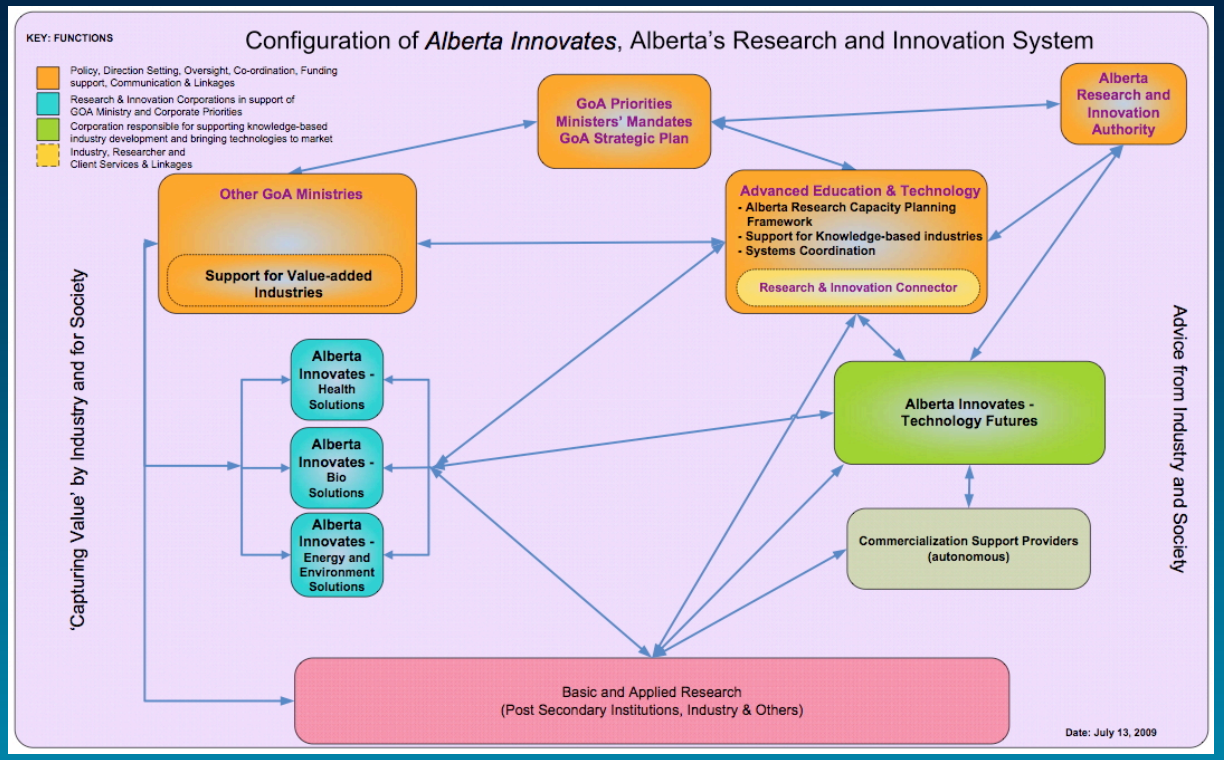
Innovation System Roles & Mandate



Roles and Mandates Framework for Alberta's Provincially Funded Research and Innovation System: Focusing and Accelerating Innovation, November 4, 2008

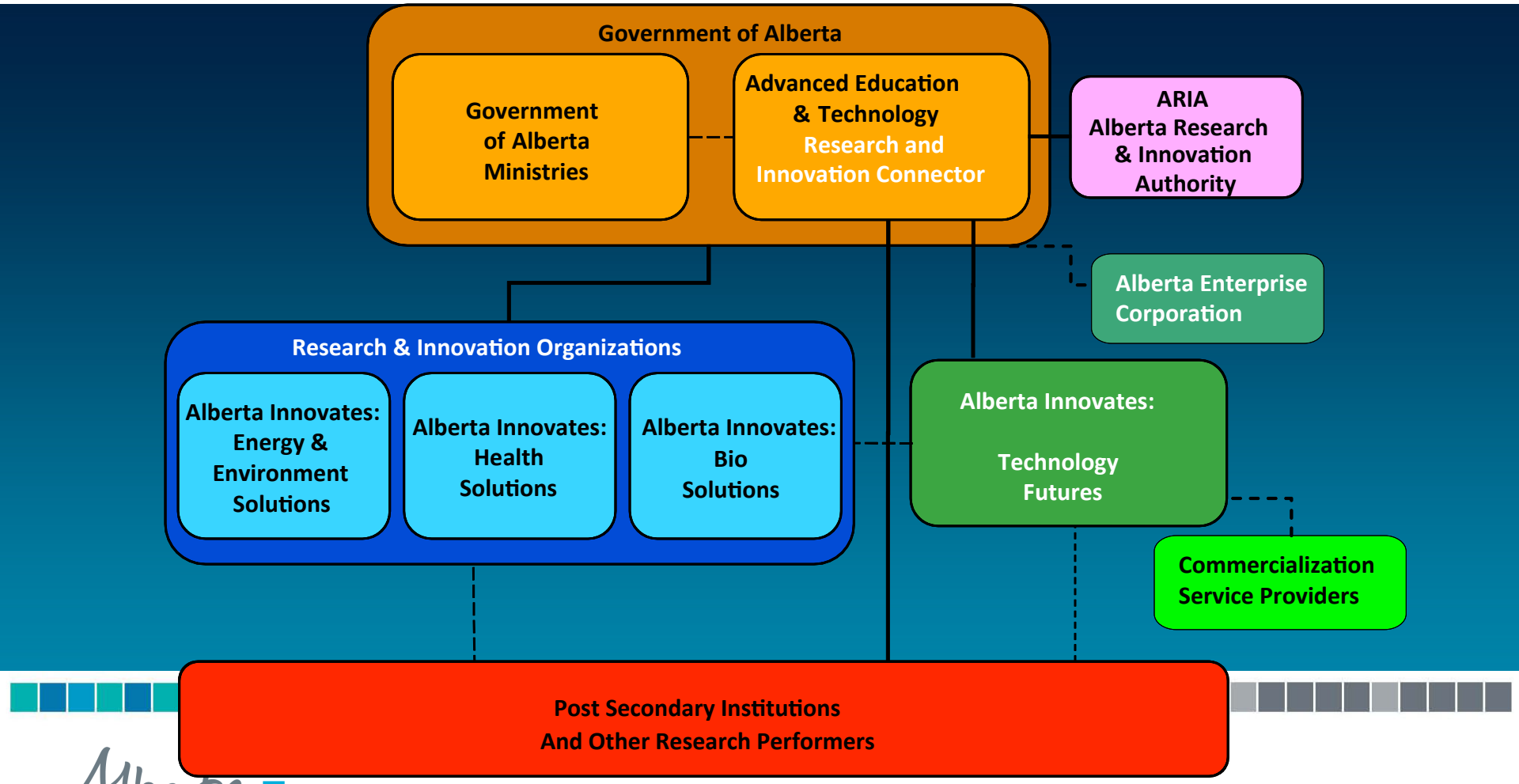
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Innovation System Functional Blocks



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Innovation System Functional Blocks



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AITF Research Funding Heritage

- Alberta Informatics Centre of Research Excellence, iCORE, established in 1999
- Alberta Heritage Fund for Science and Engineering Research, AHFSER, established jn 2000 later known as Alberta Ingenuity Fund, or “AIF”

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iCORE Programs 1

- **Research Chairs**: World Class Researchers.
- **Research Professorships**: Leading Researchers earlier in their Careers.
- **Industrial Chairs**: Leading Researchers partnering with Industry.
- **Scholars**: Young emerging first class researchers both with or without industry participation.

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iCORE Programs 2

- **Graduate Student Scholarships**, run in conjunction with AIF, intended to attract bright young students to Alberta.
- **Visiting Professorships** intended to foster world wide collaboration.
- **Support for ICT Conferences and meetings** held in Alberta, and for teams competing in ACM world programming competitions.

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iCORE's Achievements & Legacy

- iCORE-funded Researchers delivered research results, trained skilled workers, and commercially valuable technology into Alberta's economy.
- 33 research teams
- Over 1300 researchers
- ≈756 graduates, ≈56% remaining in Alberta
- 10 spinout companies
- An average leverage of every research dollar of 3 to 1

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Alberta Ingenuity Fund

- Established as an arm's length foundation of the Government of Alberta to address gaps in provincial support for science and engineering research and commercialization.
- Aimed to improve Alberta's innovation capacity by establishing leading research hubs, supporting innovative companies, and attracting and recruiting exceptional researchers

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AIF Programs 1

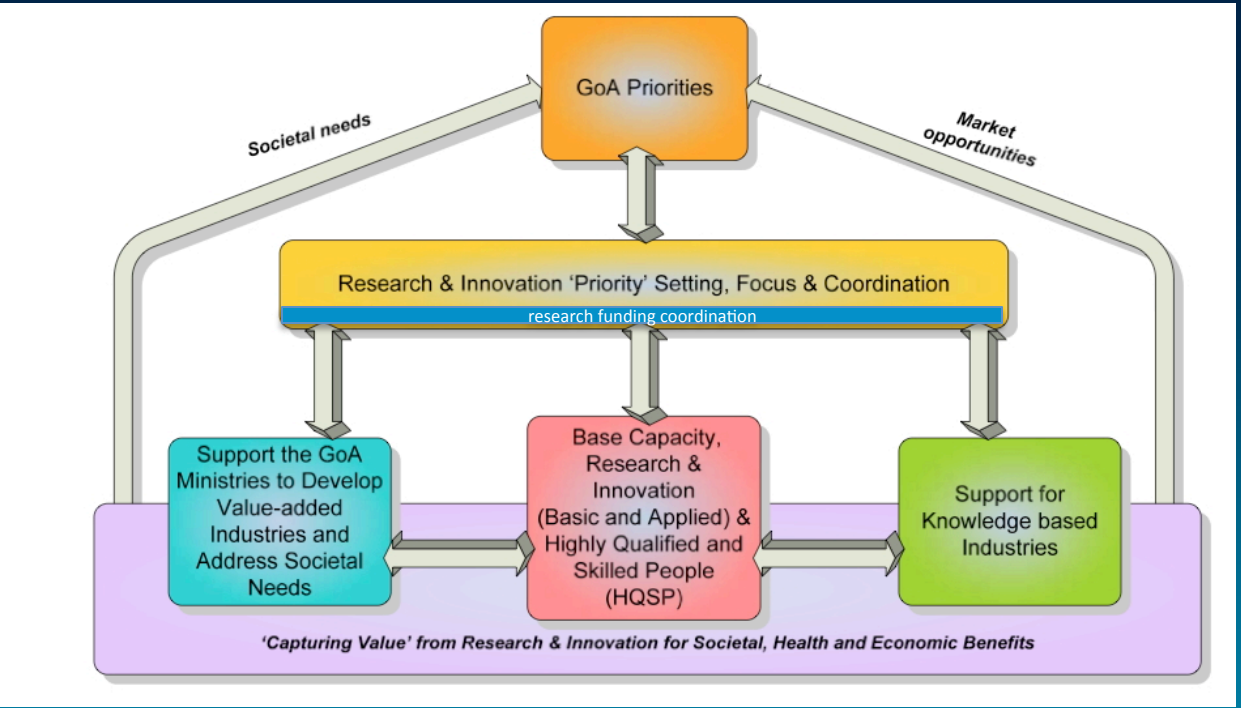
- Scholars: World Class Researchers (≈5)
- New Faculty Awards: designed to attract the very best new faculty to Alberta Universities (≈46)
- Graduate Student Scholarships run in conjunction with iCORE (≈$5M/year)
- Named Chairs & Scholarships, e.g. The Libin Chair, the Bolger Scholarship
- Special programs such as iGEM

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AIF Programs 2

- Industry Associates – r&D Associates and Commercialization Associates provide funding directly to companies (≈39, ≈21, for 2010)
- nanoWorks – supports research and industry partnerships with the support of nanoAlberta (≈$4M over 5 years)
- Centres for Research and Commercialization – foster collaborative research groups to solve industry relevant challenges (≈9, 2010, 4 within AITF)
- Accelerator – large scale investment to support research and commercialization in the nanotechnology priority. Sector (1 only, in Nano, ≈$37M over 7 years)

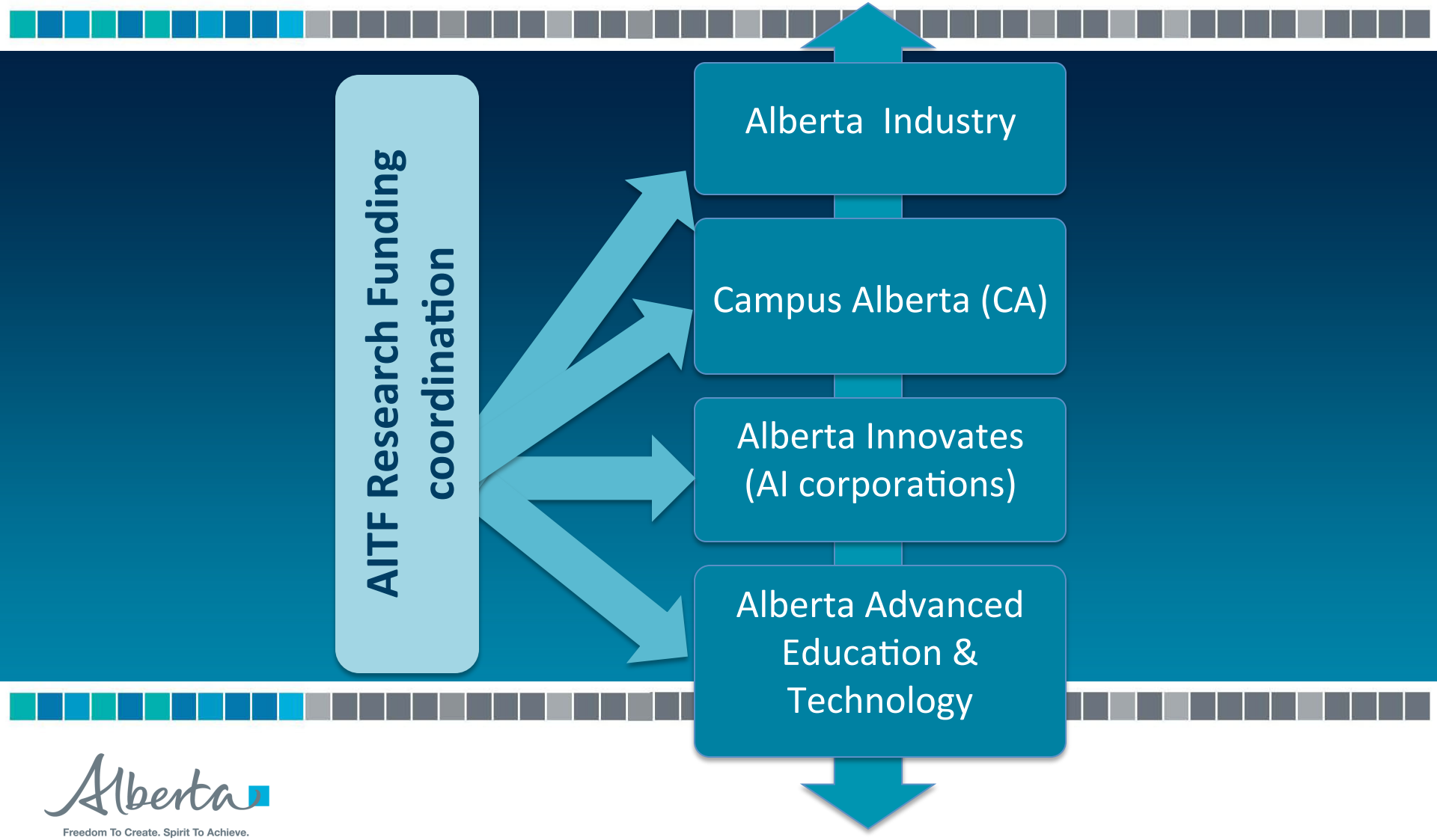
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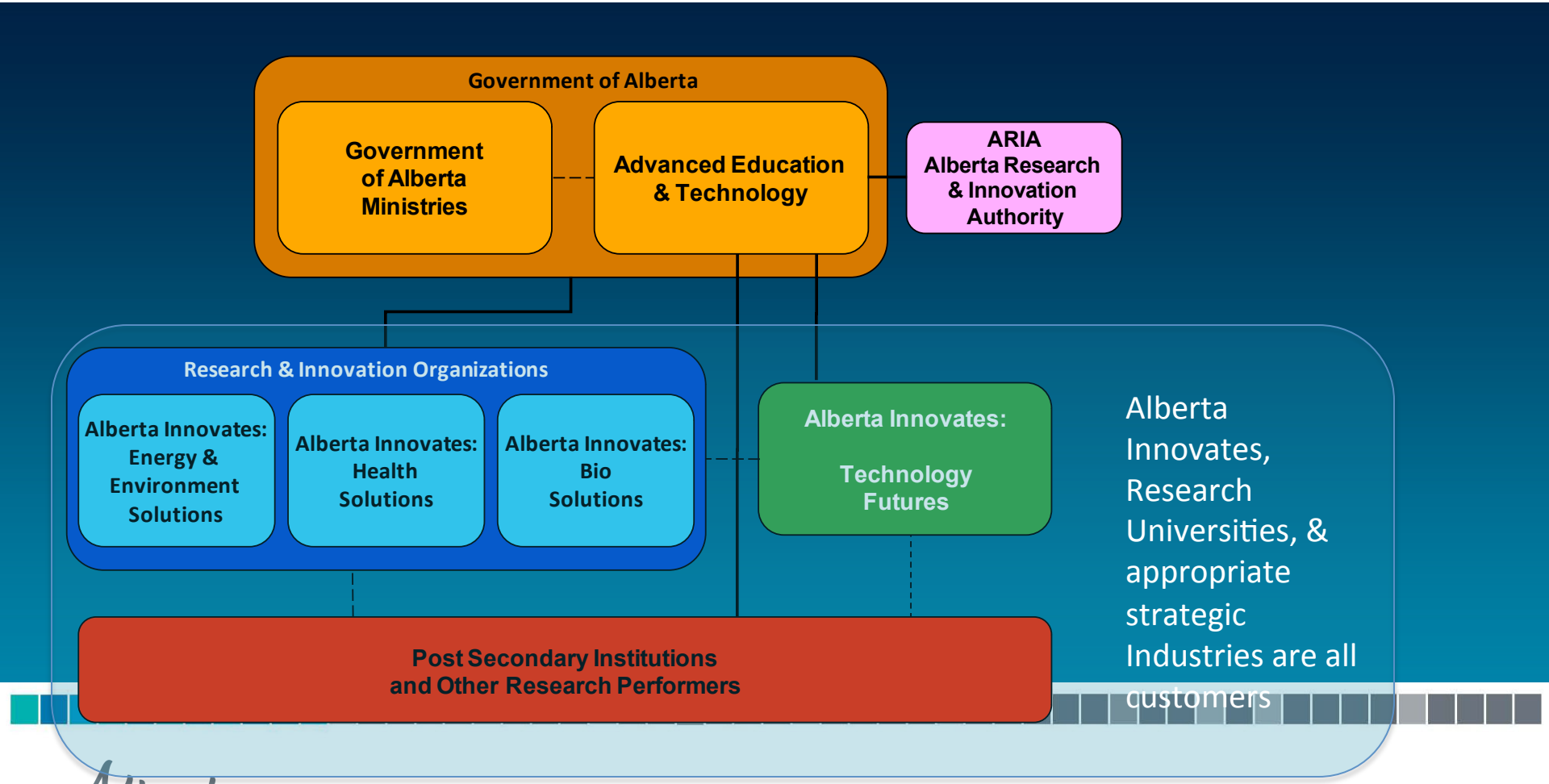
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AITF Research Funding



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Alberta Research & Innovation System



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Strategic Investigation Sectors

- Human Health
- Bio-industrials
- Environment
- Energy



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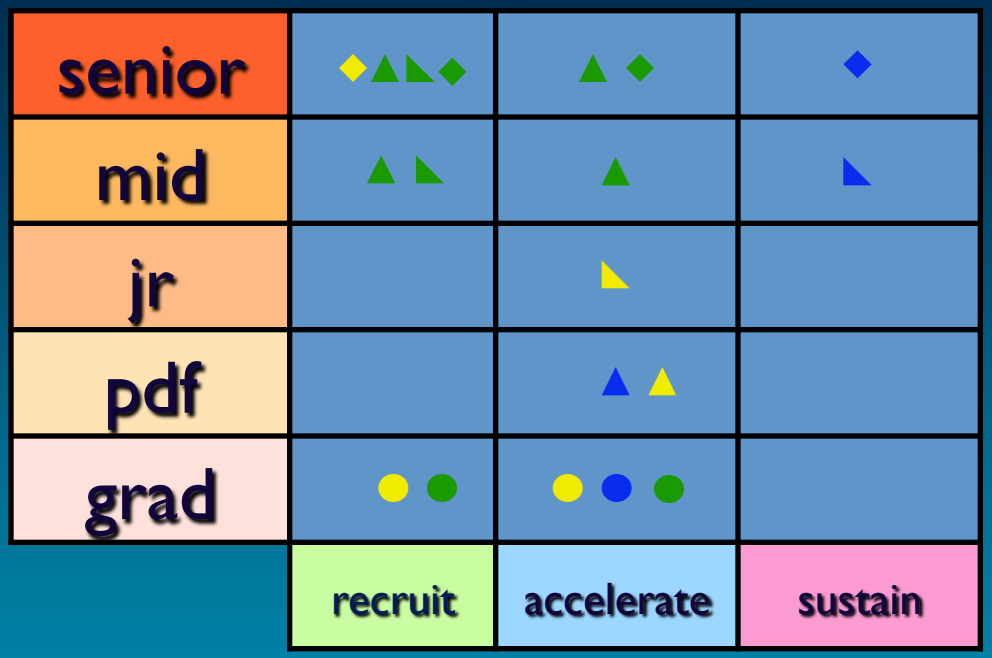
Strategic Investigation Platforms

- *Human Health*
- *Bio-industrials*
- *Environment*
- *Energy*
- *ICT*
- *Nano*
- *Omics*



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Map of existing research programs



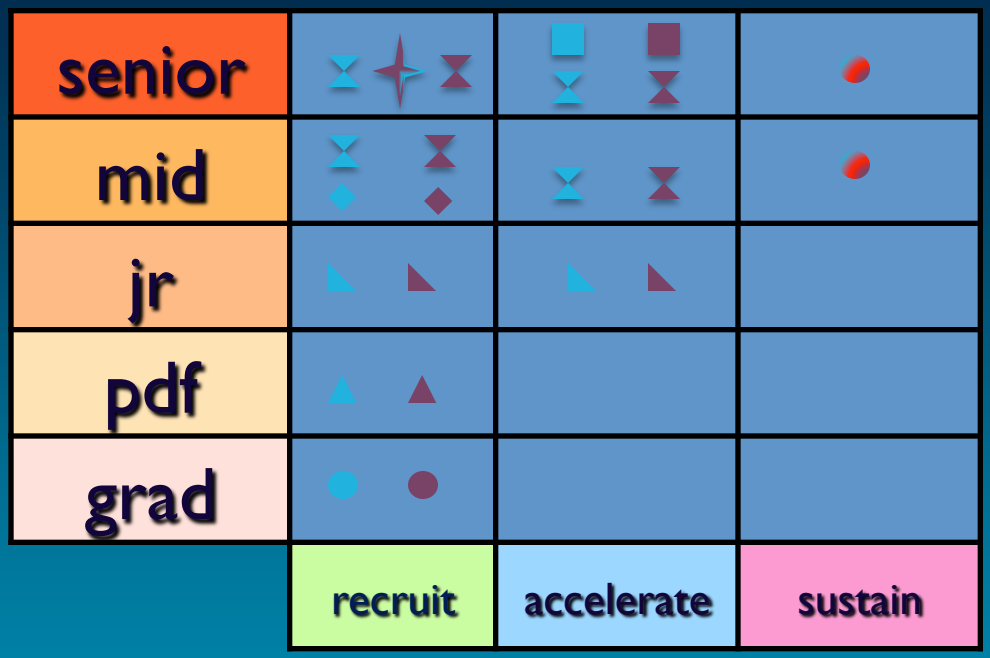
AHFMR
- grad
- pdf
- scholar
- scientist

AIF
- grad
- pdf
- new faculty
- scholar

iCORE
- grad
- industry chair
- professor
- chair

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Map of existing research programs



Alberta Innovates – Health Solutions
- grad
- pdf
- scholar
- scientist
- industry scientist
- senior scientist

Alberta Innovates
- Polaris

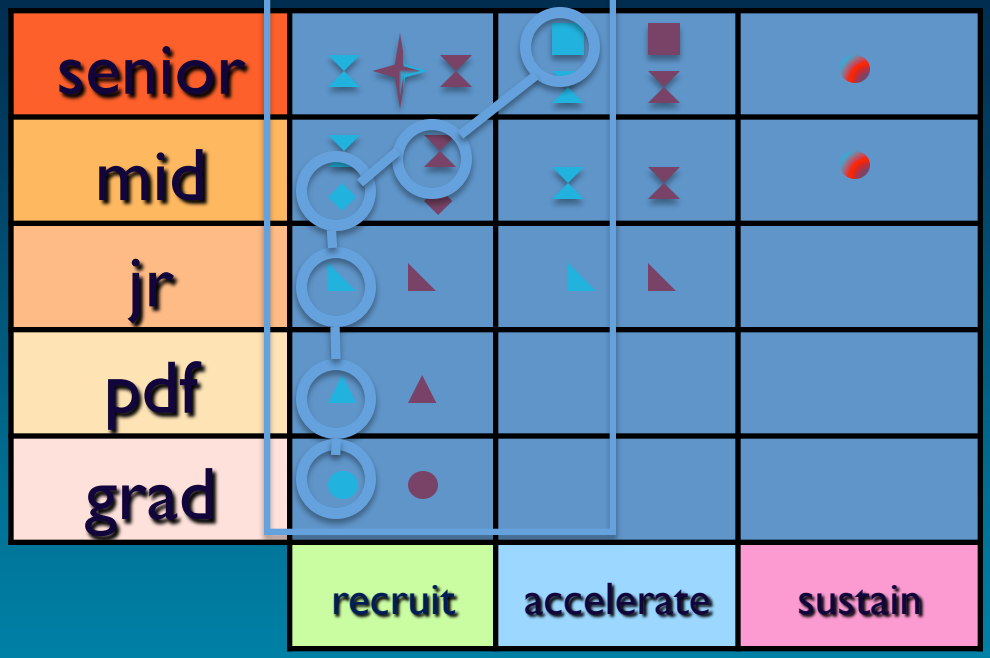
Alberta Innovates - Technology Futures
- grad
- pdf
- scholar
- professor
- industry chair
- chair

Alberta Research Universities

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Possible Connection to Centres?

E.g., AICML



Alberta Innovates – Health Solutions
- grad
- pdf
- scholar
- scientist
- industry scientist
- senior scientist

Alberta Innovates
- Polaris

Alberta Innovates - Technology Futures
- grad
- pdf
- scholar
- professor
- industry chair
- chair

Alberta Research Universities

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Alberta Innovates Technology Futures

Career Stage

early — mature

Aggregation Stage

individuals — teams

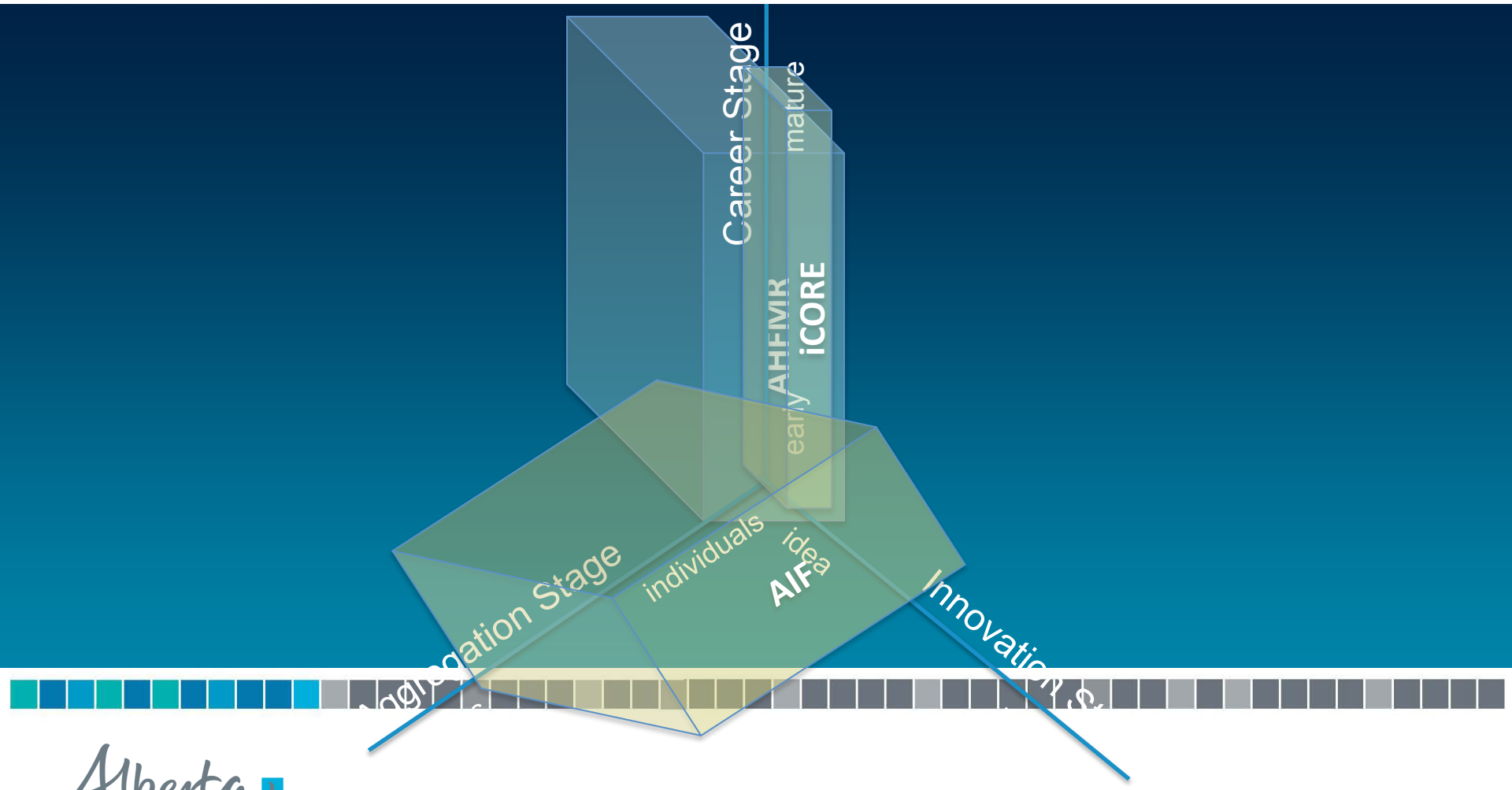
Innovation Stage

idea — product

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Existing map of programs



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AITF Research funding mandate

- Main goal is to improve Alberta's competitiveness and to support economic diversification
- Main principle is that exceptional people achieve exceptional results
- Aimed to preserve the strengths of AIF and iCORE, with stronger more effective programs
- A portfolio of scientists and engineers embedded in Alberta's post-secondary research institutions and Alberta industry
- Improved performance of Alberta Industries and the creation of new and relevant industries

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Tentative Program Structure

- **AITF Chairs**
  - **Strategic Chairs**
    - Designed to be long term, up to 5 +5 years in order to develop future industries and to address the aims and goals of outlined above
  - **Industry Chairs**
    - Shorter term, up to 5 years, intended to be *directly relevant* to industry needs
    - These will require a significant financial commitment from industry sources
  - **Industry Practice Chairs**
    - Shorter term, up to 5 years, intended to be *broader in discipline*, and able to facilitate entrepreneurial development in collaboration with chair teams

Chair/professor funding levels

- Tier 1: for internationally exceptional people (up to $1M/year for 5 years)
- Tier 2: for excellent mid-career people, who have exceptional promise (up to $500K/year for 5 years)
- Tier 3: for early emerging stars (up to $150K/year for 3 years)

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Support funding

- Chairs will form teams
- Additional programs to support
  - Graduate students (CDN & International)
  - Postdoctoral Fellows,
  - Visiting scientists and engineers,
  - Technical staff
- Ad hoc allocations for emerging strategic opportunities

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Collaborative Centres/Teams

- 4 of 9 former Ingenuity centres and the Nano Accelerator also fall within AITF (AICML, AICCS, Tecterra, Biovantage)
- Centres will be restructured and modified to better serve Industry and Academia to meet achievements and goals but with new assessments and cycles
- This process has only just begun

AITF Research Funding Result

- A simpler more transparent and effective set of programs
- Designed to improve coordination and collaboration with academia and industry, to accelerate industrial impact

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