

# Alberta Innovates

**Guidance for Graduate Student Scholarship Applicants/Review**

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**March 6, 2023**



## AGENDA

1. Alberta Innovates
2. Post Secondary Investments & Emerging Technologies (PSIET) & Talent
3. The University and Alberta Innovates
4. Guidance for Graduate Student Scholarship (GSS) Applicants
5. Q&A

# Alignment – Technology & Innovation (T&I) , Alberta Innovates (AI) , Investments, PSIET

Funder to AI, overall direction and ensuring programs are achieving outcomes.

Arms length crown corp. Funder of projects and programs. Connector of stakeholders.

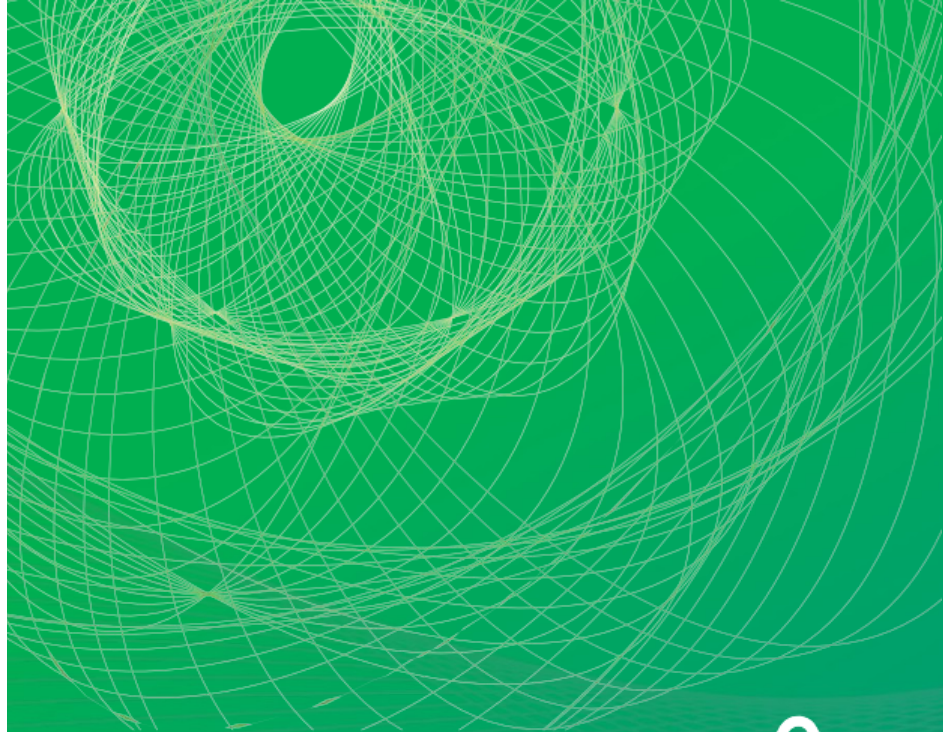
Post-secondary investments and emerging technology. TRL 1-5.



\* Advanced Education is also a key strategic partner/funder

Path forward document from JEI detailing overall strategy and key goals to achieve.

Group consisting of PSIET, EI, Scale-up & GAP, IA.



2021-22

# ALBERTA INNOVATES

We are Alberta's innovation engine.

We are working to solve today's challenges, create new opportunities and forge a healthy, sustainable and prosperous future for Albertans.



## About us

1,320 active projects  
across business lines and sectors

Total portfolio value under management  
(project investment)

**\$1.2 B**

Operating budget **\$250 M**



**11** locations

**1 million+** sq feet of lab space

**600+ acres** of research farmland



**589** Employees (full-time)

**2** subsidiaries

InnoTech Alberta & C-FER Technologies

2021-22

# By the numbers

We are where innovation happens, and we touch every corner of the province.

We provide funding programs, advice, connections, technical expertise and applied research services.



Learn how Alberta Innovates

\*Small and medium enterprises with fewer than 500 employees



2,373

New innovations by clients supported directly and indirectly by Alberta Innovates



\$58.5 M

Additional funding raised by researchers and trainees supported by Alberta Innovates



1,415

Clients supported by Alberta Innovates (students/trainees, researchers, companies, entrepreneurs and others)

995

Clients supported by C-FER Technologies and InnoTech Alberta



Revenue

\$1 → \$6.58

\$1 from Alberta Innovates > \$6.58 in SME\* revenue growth

\$1.00



Alberta Innovates Funding to SMEs



\$25.64



Follow-on Investment

86% Private Funding  
14% Public Funding



Exports

56%

of AI-supported SMEs exported goods

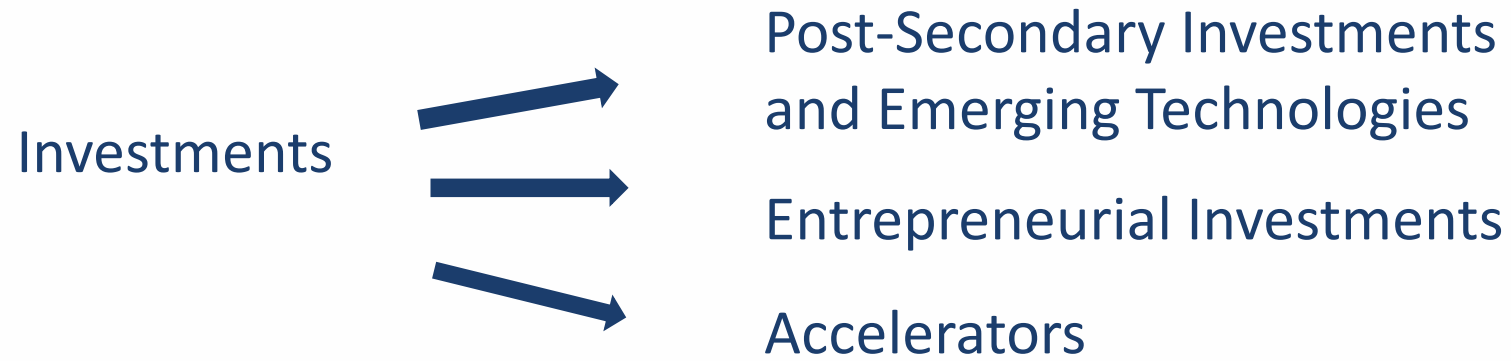


Jobs

3,197

Net new jobs were created by SMEs funded by Alberta Innovates 88% full time

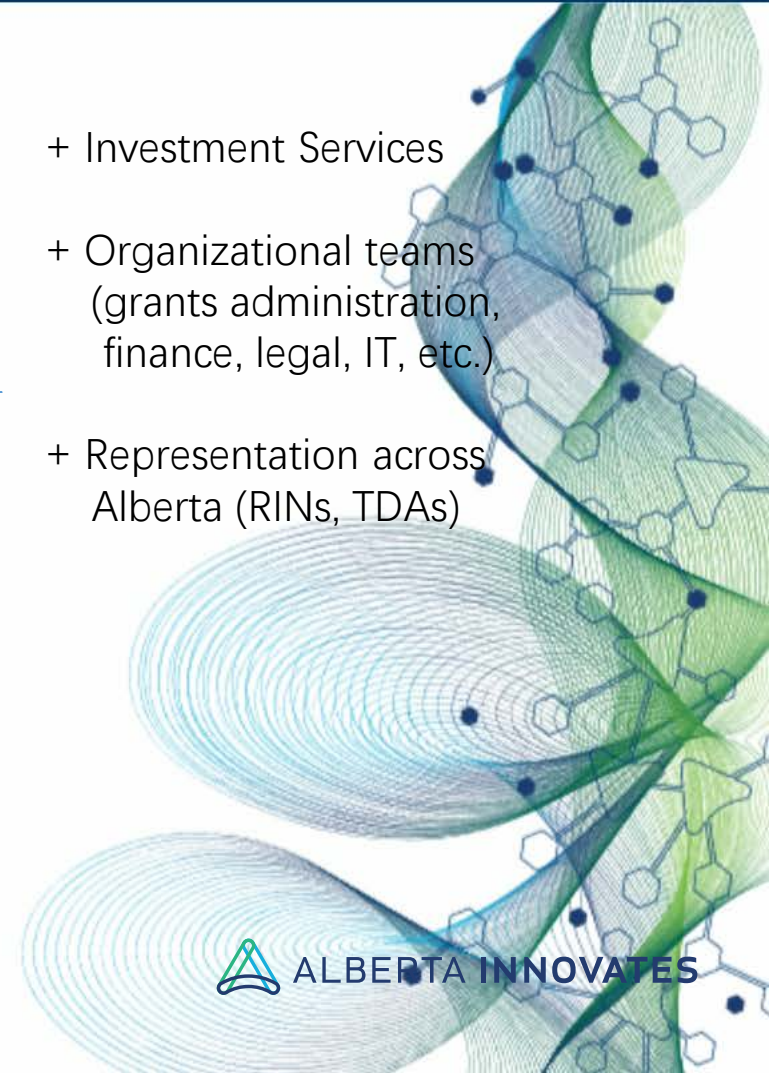
# Alberta Innovates Business Lines



Clean Resources  
Health Innovation

**SUBSIDIARIES**  
CFER    Innotech

- + Investment Services
- + Organizational teams (grants administration, finance, legal, IT, etc.)
- + Representation across Alberta (RINs, TDAs)



Funding, enabling and matchmaking  
emerging technology inventors  
to increase the volume of commercial outcomes  
for Alberta's future prosperity

### Emerging Technology

- Nascent technologies and related talent

### Inventors

- Multiple persona types
- Solve, build, research, create, iterate, tinker, do

### Volume

- Quality
- Breadth
- Diversity

# Post Secondary Investments & Emerging Technology (PSIET)

# PSIET along the Alberta Innovates Client Journey



TRL:	1	2	3	4	5	6	7	8	9	10+
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Graduate Students Scholarships (GSS)

Strategic Research Program (SRP)

NSERC Alliance AI (Advance)

Ecosystem Development Program (EDP) – Technology Hubs (pilot)

Institutional Support for Entrepreneurial Education (ISEE)

Strategic Networking & Development (SND)

Campus Alberta Small Business Engagement (CASBE)



# TECHNOLOGY READINESS LEVELS (TRL)

- Level 1** **Basic principles of concept are observed and reported.** At this level scientific research begins to translated into applied research and development. Activities might include paper studies of a technology's basic properties.
- Level 2** **Technology concept and/or application formulated.** At this level invention begins. Once the basic principles are observed, practical applications can be invented. Activities are limited to analytical studies.
- Level 3** **Analytical and experimental critical function and/or proof of concept.** At this level active research and development is initiated. Activities might include components that are not yet integrated or representative.
- Level 4** **Component and/or validation in a laboratory environment.** At this level basic technological components are integrated to establish that they will work together. Activities include integration of "ad hoc" hardware in the laboratory.
- Level 5** **Component and/or validation in a simulated environment.** At this level the basic technological components are integrated for testing in a simulated environment. Activities include laboratory integration of components.
- Level 6** **System/subsystem model or prototype demonstration in a simulated environment.** At this level a model or prototype is developed that represents a near desired configuration. Activities include testing in a simulated operational environment or laboratory.
- Level 7** **Prototype ready for demonstration in an appropriate operational environment.** At this level the prototype should be at planned operational level and is ready for demonstration of an actual prototype in an operational environment. Activities include prototype field testing.
- Level 8** **Actual technology completed and qualified through tests and demonstrations.** At this level the technology has been proven to work in its final form and under expected conditions. Activities include developmental testing and evaluation of whether it will meet operational requirements.
- Level 9** **Actual technology proven through successful deployment in an operational setting.** At this level there is actual application of the technology in its final form and under real-life conditions, such as those encountered in operational test and evaluations. Activities include using the innovation under operational conditions.

# PSIET

## Talent

- Graduate Student Scholarships (\$12k-\$31k/year)

## Research

- Campus AB Small Business Engagement (\$150k/year)
- NSERC Alliance (\$150k/year)
- Strategic Research Projects (\$250k/year)

## Ecosystem Development

- Technology Hubs (not specified)
- Strategic Networking and Development (up to \$25k)

# Investments

# PSIET Emerging Technologies (ET) Priority Target Areas\*

## Information and Communication Technologies (ICT)

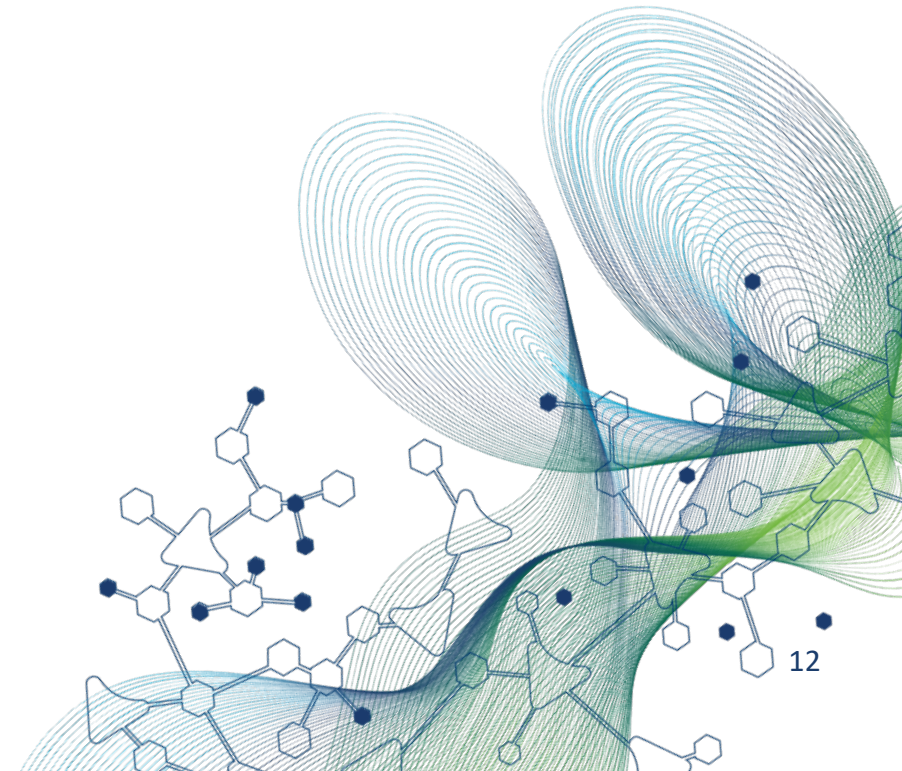
- Communication Networks and Services
- IoT/Machine-to-Machine systems
- Advanced Data Management and Analytics, AI/ML
- Cybersecurity
- Human Interaction with Digital Media
- Quantum Computing

## Advanced Materials and Manufacturing Technologies (AMM)

- Automation (including robotics)
- Lightweight materials and technologies
- Additive Manufacturing
- Nanotechnology
- Quantum Materials

# Role of the University and Alberta Innovates

- Graduate Student Scholarships (GSS):
  - administered by the University
  - oversight and guidance from Alberta Innovates' PSIET group
- Adjudication Process
  - University adjudication committee
    - Emerging Technology Scientific and Technical Expertise
    - Ranked list
  - Alberta Innovates
    - Emerging Technology Alignment & Business Expertise





# Tips for Scholarship Applicants

- What **Alberta Innovates** is looking for:
- Alignment to the Emerging Technology Areas
- Benefit to Alberta
- Industry

# Alignment to AB Innovates' Emerging Technologies

- Does your project align with the emerging technology area described in the Graduate Student Scholarships (GSS) Emerging Technology Areas document?
- <https://albertainnovates.ca/app/uploads/2020/10/GSS-Emerging-Technology-Areas-October-28-2020.pdf>

# Benefit to Alberta

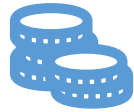
What do you hope to achieve from your research and how does that benefit Alberta?



Environmental



Health



Economic



Social



Other Impacts

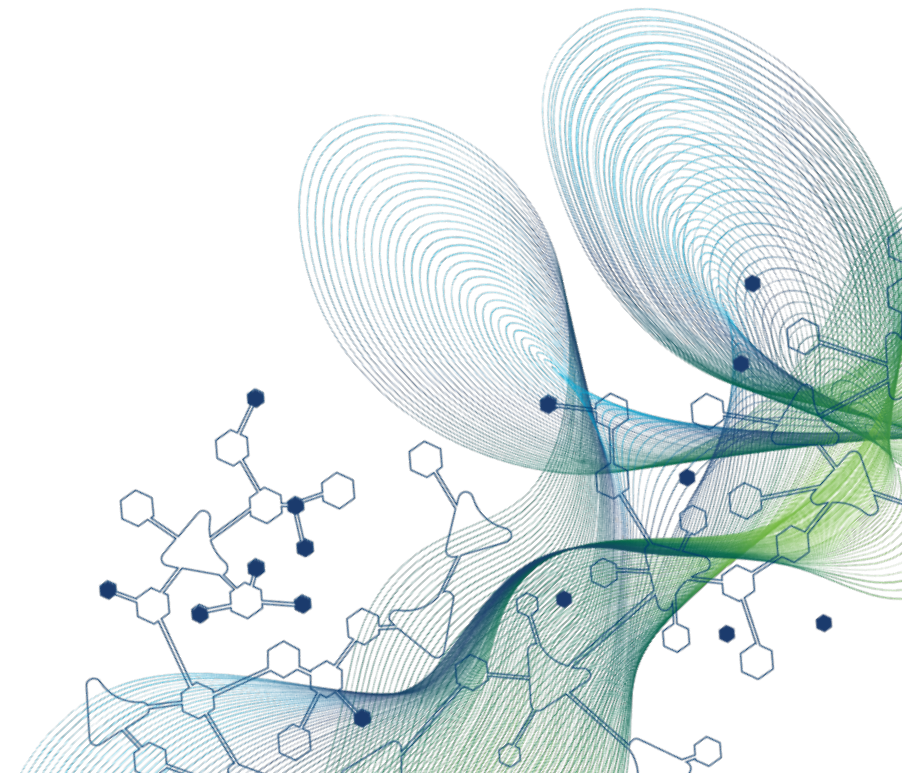
What is the potential for your technology/proposed solution to be adopted in Alberta and beyond?

# Industry

- Relevant Industry experiences
  - Involvement of industry
  - Industry partnerships
  - Likelihood of work being published, IP produced, commercialization?
  - Applicant working on a project that is directly for an industry client?



# THANK YOU



# Questions

## Talent

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## Research

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