



Natural Resources
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Ressources naturelles
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CanmetMINING's Industry Impact through Green Mining Innovation

Magdi Habib, Ph.D.
Director General, CanmetMINING
Lands and Minerals Sector, Natural Resources Canada



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CanmetMINING's Mandate and Vision

Mandate: develop and promote the adoption of technologies and practices to improve the overall competitiveness and environmental performance of the Canadian mining sector

Vision: CanmetMINING is accelerating innovation of Green Mining technologies, tools and processes in collaboration with Canada's mining innovation ecosystem.



Where We Are Located

British Columbia



Ontario and Quebec



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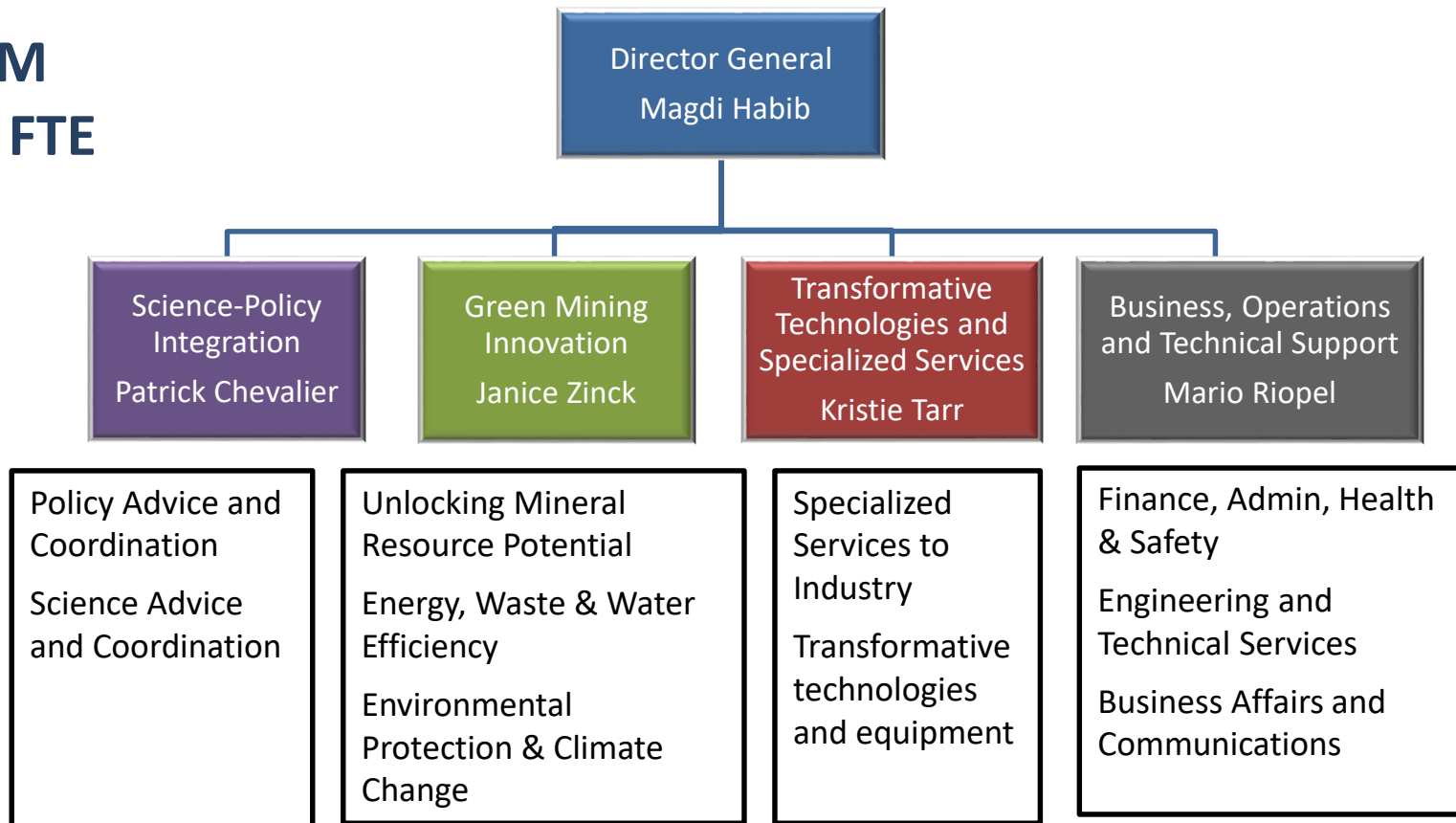
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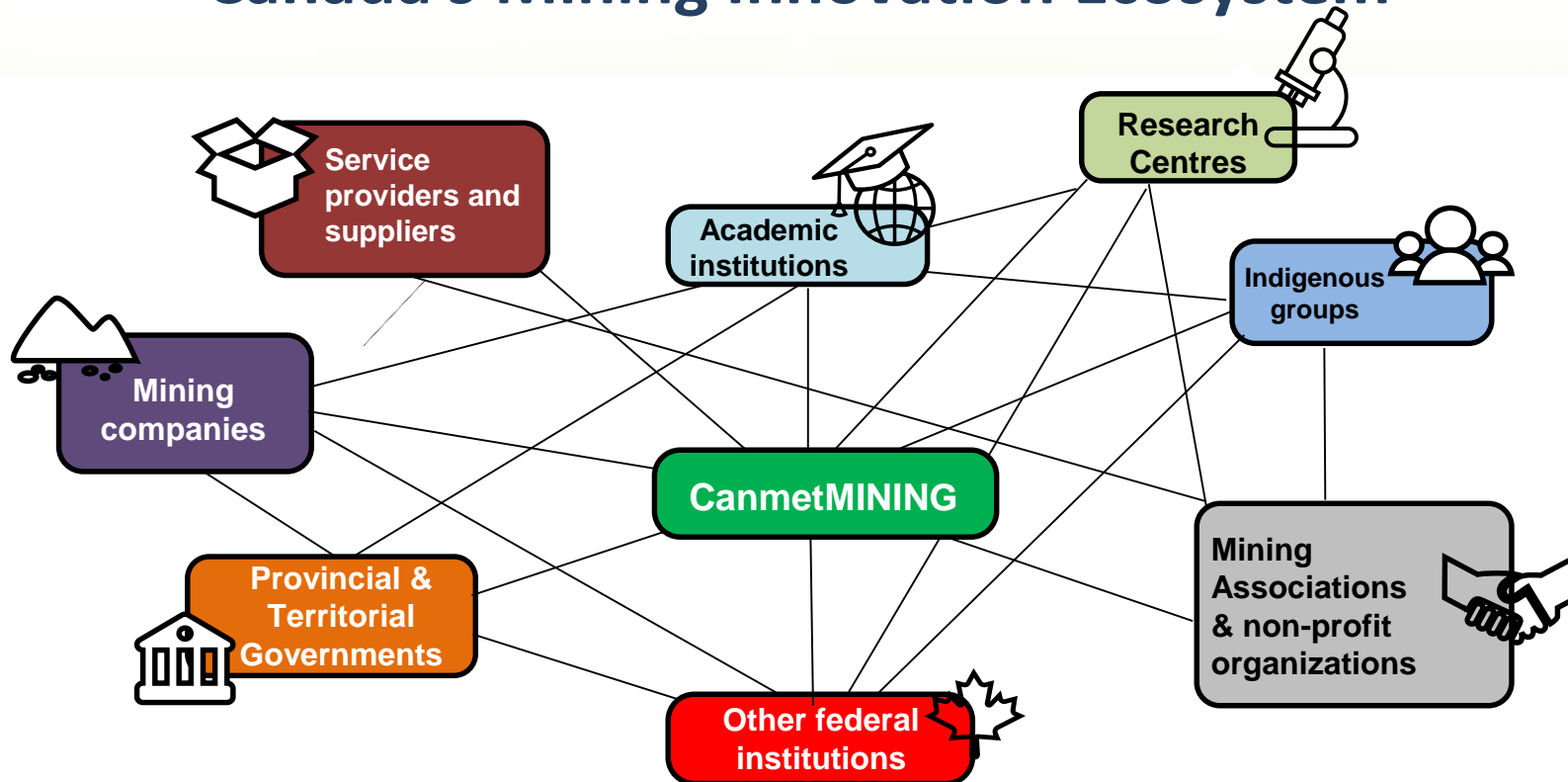
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CanmetMINING's Structure

\$18M
140 FTE



Canada's Mining Innovation Ecosystem



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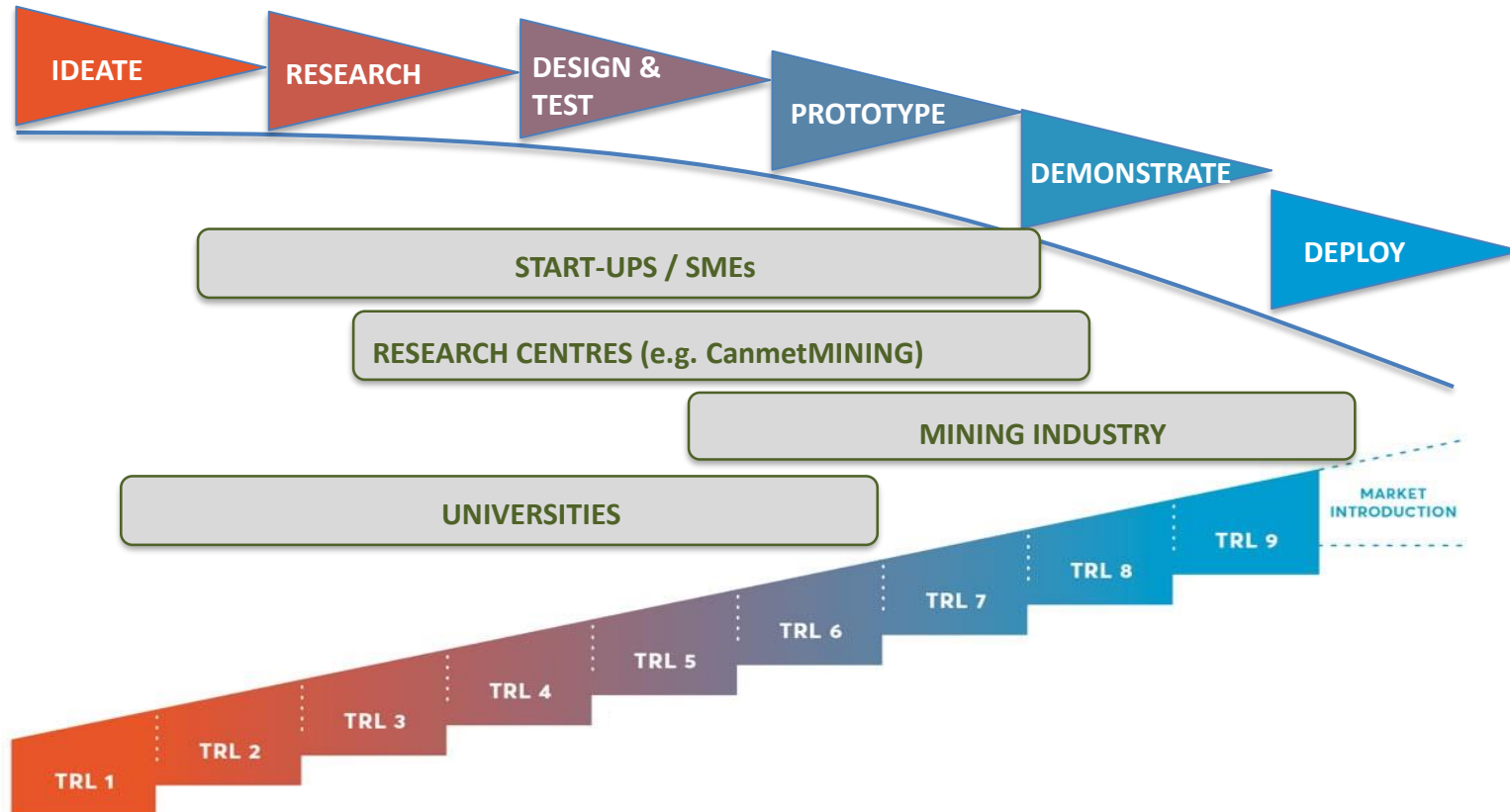


Government
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Collaboration to Drive Innovation



New Ways of Connecting Science:

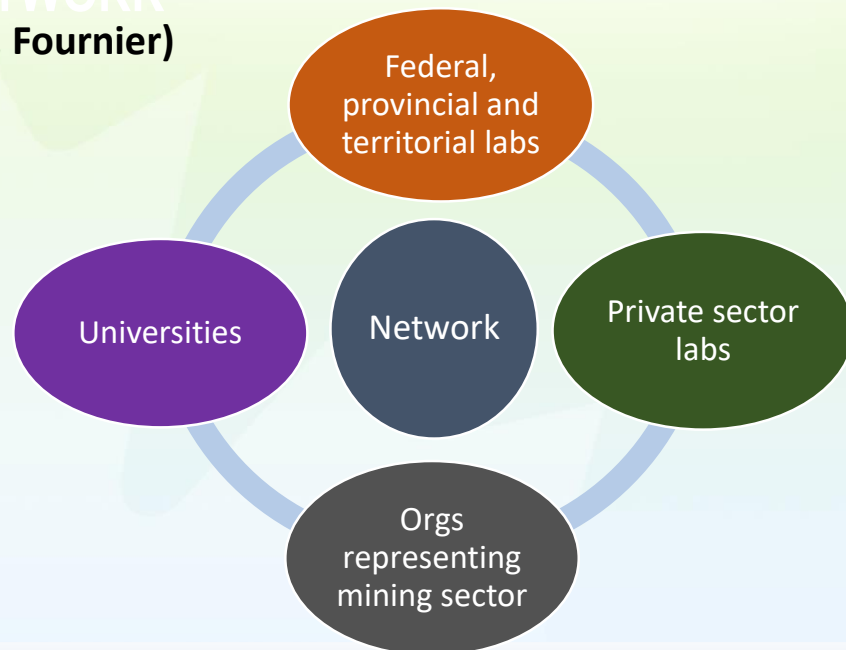
The Canadian Science and Engineering Laboratory Network

Co-Chaired by CanmetMINING (M. Habib) and COREM (F. Fournier)

The laboratory network will provide a forum for mining and minerals laboratory leaders to:

- share knowledge
- leverage resources (people = \$)
- create a culture of sharing (facilities & expertise) and open communication

to develop and address the strategic priorities of the sector



- ✓ Enhance information-sharing and communication
- ✓ Reduce potential for overlap and duplication on R&D projects

- ✓ Accelerate R&D
- ✓ Improve overall efficiencies in use of human and financial resources

Relevance

Economically Competitive and Environmentally Sensitive



Addresses Industry Priorities and Challenges

- Improving energy efficiency and reducing greenhouse gases
- Minimizing wastes
- Increasing productivity
- Expanding mineral resource potential
- Providing specialized services

Aligned with the Government of Canada's Agenda

- Clean technology
- Climate change
- Watershed protection
- Economic competitiveness of the natural resources sector

Contributes to the Public Good

Supports:

- Environmental assessments
- Scientific evidence for regulatory development
- Water quality
- Tailings management

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How CanmetMINING Delivers Impact

Novel methods and
processes

Contribute to codes and
standards development

New technologies

Software and Tools

De-risking technologies
through demonstration

International –
supporting green mining
opportunities for
Canadian businesses

Convenor to address
important issues to
Canada

Scientific evidence for
regulatory development

Development of HQP

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Measuring CanmetMINING's Impact

Examples

Cost savings 10-30% for nickel producers for shipping materials no longer over-classified as harmful

Prevention of environmental damages \$8.5M/year through microseismic monitoring

↑ energy efficiency ↓ GHG emissions & air contaminants (benefits of \$5.5M/year) through more efficient use of diesel engines

More efficient bolting systems (benefits \$13.7M/year) through testing ground control elements

\$16M/year in revenues and cost savings at Kupol mine site from process to reduce cyanide for gold and silver extraction

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CanmetMINING's Impact – Key Performance Indicators

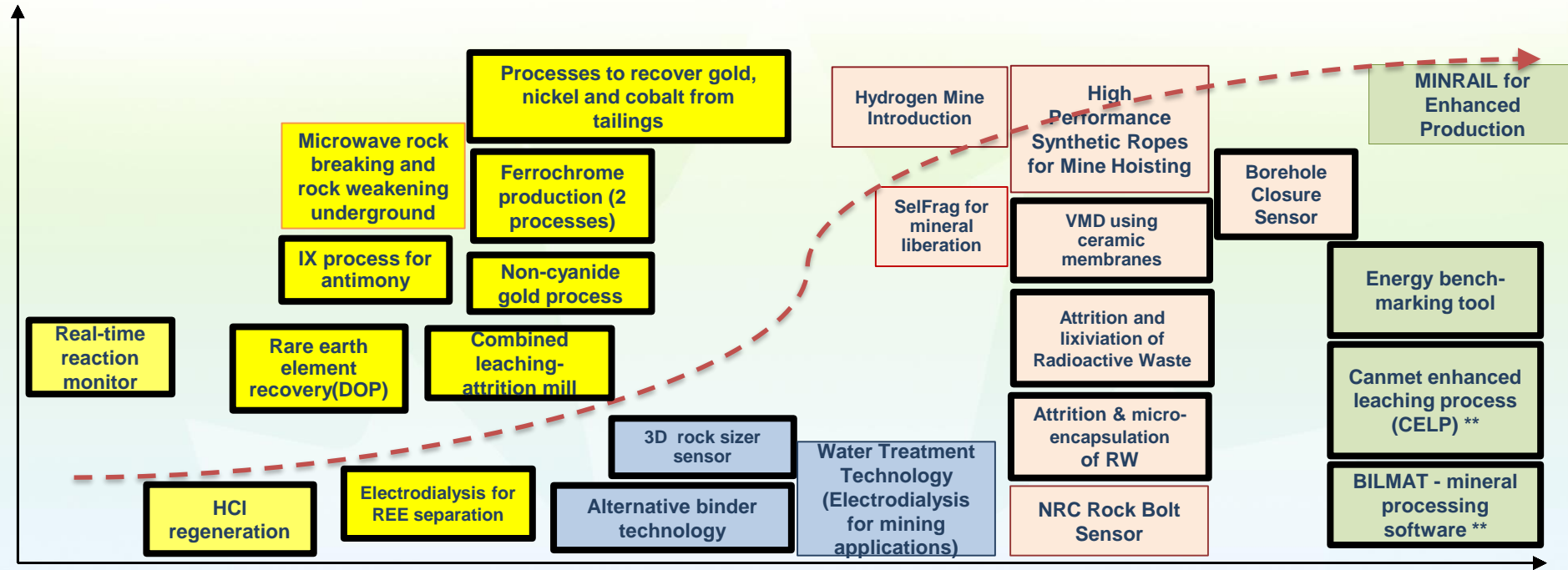
Patents & Licenses

Type	Number
Licenses	4
Patents and Software	17

Publications

Key Performance Indicator	Fiscal Year 2018/19	Fiscal Year 2017/18
Cost Recovery Reports	10	22
Journal Article	4	16
Proceedings	16	21
Other Including Internal Reports and Consultant Reports	19	59
Totals	49	118

Advancing Technologies, Tools and Processes Along the S-Curve ⁴²



Technology Maturity (Time)

Pre-concept Refinement			Concept Refine-ment	Technology Development		System Development & Demonstration		Production & Deployment	
TRL 1	TRL 2	TRL 3	TRL 4	TRL 5	TRL 6	TRL 7		TRL 8	TRL 9

Breakout Group Discussion

We welcome your input on how we can increase our impact. In smaller groups, we will be asking you to provide frank feedback and advice on the following topics.

- Are you seeing the impact of CanmetMINING's work on your organization?
- In your opinion, what should CanmetMINING do more of? Less of?
- How can CanmetMINING increase the adoption of its technologies?
- Are there initiatives you are involved in or aware of, where you think CanmetMINING might have value to add?



For additional information, please contact:



Magdi Habib, Ph.D.
Director General, CanmetMINING
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Magdi.Habib@Canada.ca