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SNOLAB Status and Updates

Jodi Cooley

Executive Director | SNOLAB

Professor of Physics | Queen's University

Adjunct Research Professor | SMU



Welcome EAC and SEF!

Outline



- 2023-2029 Strategic Plan Highlights
- New Organizational Structure
- SNOLAB Underground Science Institute Pilot Program
- Response to SEF/Collaborations Needs

2023-2029 Strategic Plan

Reaching New Heights, Deep Underground

2023-2029 Strategic Plan

Our Vision:

To be the leading international laboratory in deep underground science, hosting the world's most advanced experiments that provide insight into the nature of the universe.

Core Pillars:



Excellent science



Cutting-edge research
infrastructure



Skilled people

Our Mission:

- Enable world-class underground science
- Spearhead R&D
- Catalyze scientific collaboration
- Promote Innovation
- Inspire the next generation

Our Core Values:

- Safety
- Accountability
- Diversity
- Excellence
- Teamwork



1

Excellent science

Drive breakthrough discoveries at the frontiers of underground science.

Expected outcomes:

- Cementing of Canada's leadership in deep underground science
- A stronger, more competitive Canada in scientific discovery
- More Canadian researchers positioned as global leaders

Science Strategy



The science at SNOLAB is focused on increasing our understanding of the particles and forces that have shaped the universe.

- What is the nature of dark matter?
- What is the nature of the neutrino?

SNOLAB will continue to collaborate in scientific research required deep underground facilities.

- Neutrino observatories (solar, supernovae, geo, reactor, etc.)
- Effects of radiation on biological systems
- Environmental monitoring (nuclear non-proliferation, aquifers, etc.)

SNOLAB will pursue new collaborations and opportunities in emerging areas of underground science

- Effects of radiation on quantum technologies



Science Strategy

Become an intellectual hub that fosters collaboration and connection.

- Assign dedicated staff to assist domestic and international users in the navigation of logistical and cultural aspects of their long-term stay;
- Create a formal user support system that users can rely on;
- Provide dedicated physical space to encourage collaboration and connection;
- Promote equity, diversity, and inclusivity.





2

Cutting-edge infrastructure

Continuously improve our research infrastructure to remain state of the art.

Expected outcomes:

- Attraction of the most advanced international experiments to Canada
- Greater global impact and enhanced reputation of Canada's underground science infrastructure

Infrastructure Strategy

Explore the full potential of cryogenics systems, building on our previous cryogenics successes for research and develop future infrastructure, operational capacity, and expertise.

- Scale up our underground production capacity for liquid nitrogen.
- Develop innovative testing facilities for quantum computing and technologies.

Innovate new technologies and tools for ultra-low background experiments.

- Expand our ultra-low radiogenic background program by developing innovative tools and techniques for screening.



Infrastructure Strategy

Continue upgrading our operational systems.

- Support and use new techniques and technologies to further improve the automation of experiments and remote operability.

Deepen our focus on safety and sustainability.

- Maintain our excellent safety record and standards and incrementally reduce our environmental footprint.

Export our underground infrastructure expertise around the world.

- Seek to increase our collaborations with new and existing underground laboratories.



<https://www.snolab.ca/facility/underground-facilities/>

3

Skilled people

Foster and develop diverse talent in an inclusive environment.

Expected outcomes:

- Canadian leadership in advancing EDI in research facilities
- A new generation of HQPs prepared to discover and innovate in a global economy
- Greater access to STEM skills and opportunities in Northern Ontario

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Skilled People



- **Embed equity, diversity, and inclusivity into everything we do.**
- Working towards gender parity and significant representation of equity-deserving groups, both in our staff and Board of Directors
- Create multi-purpose wellness spaces in the surface building and underground labs.
- Create a standing EDI committee that reports directly to the Executive.



Skilled People



Increase professional development and training opportunities.

- EIT and skilled trade apprentice programs
- SNOLAB student training (internship and coop programs)
- Institutional support of community E&O and professional development efforts (summer schools, conferences, workshops, CASST competition, etc)

Skilled People



Public engagement and focused efforts on K-12 students

- In partnership with the Ontario Association of Physics Teachers, develop educational resources for K-12 classrooms
- Collaboration with Science North to create an interactive exhibits.
- Leadership in organizing international events, such as the annual International Dark Matter Day.



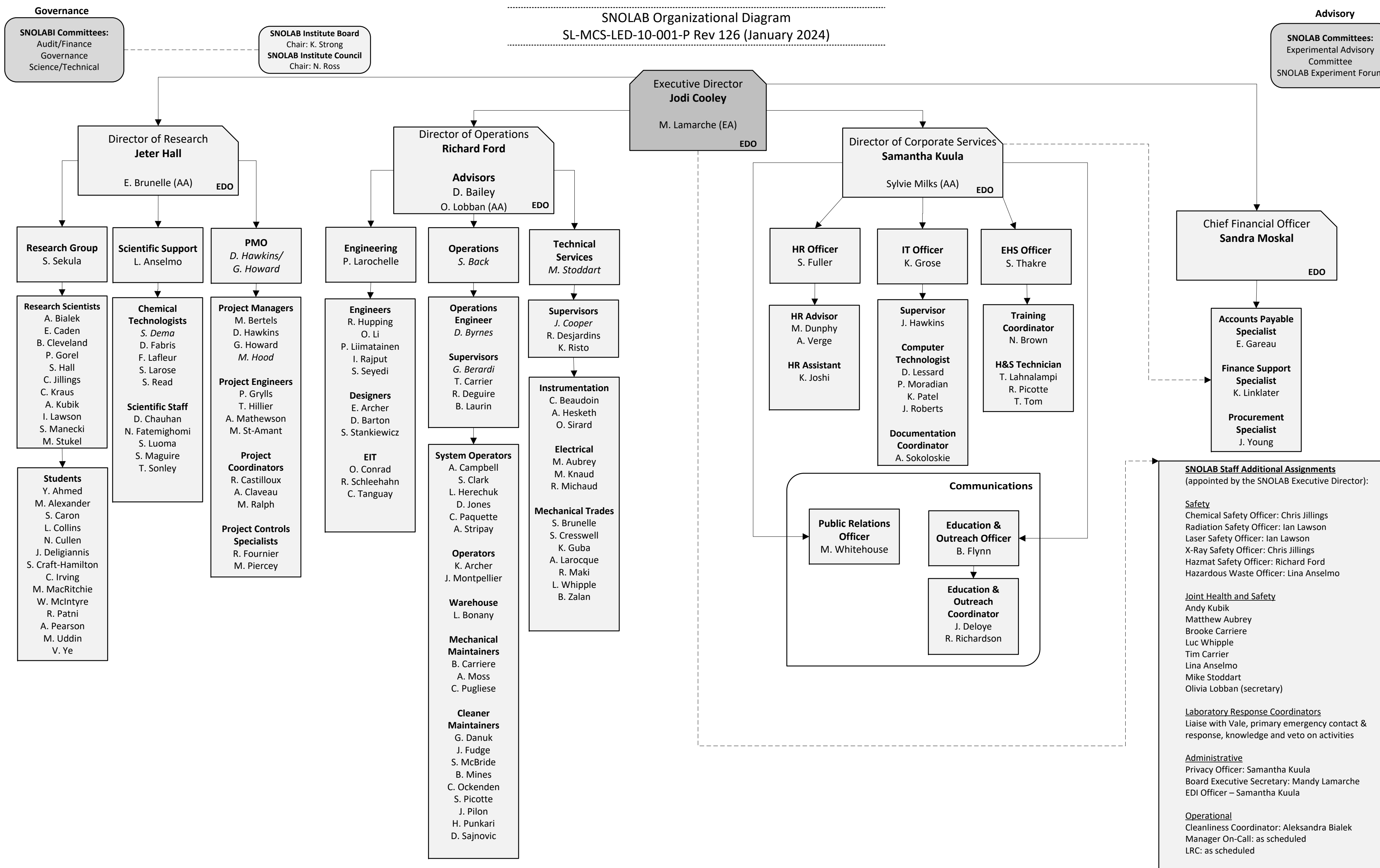
<https://www.snolab.ca/outreach/>

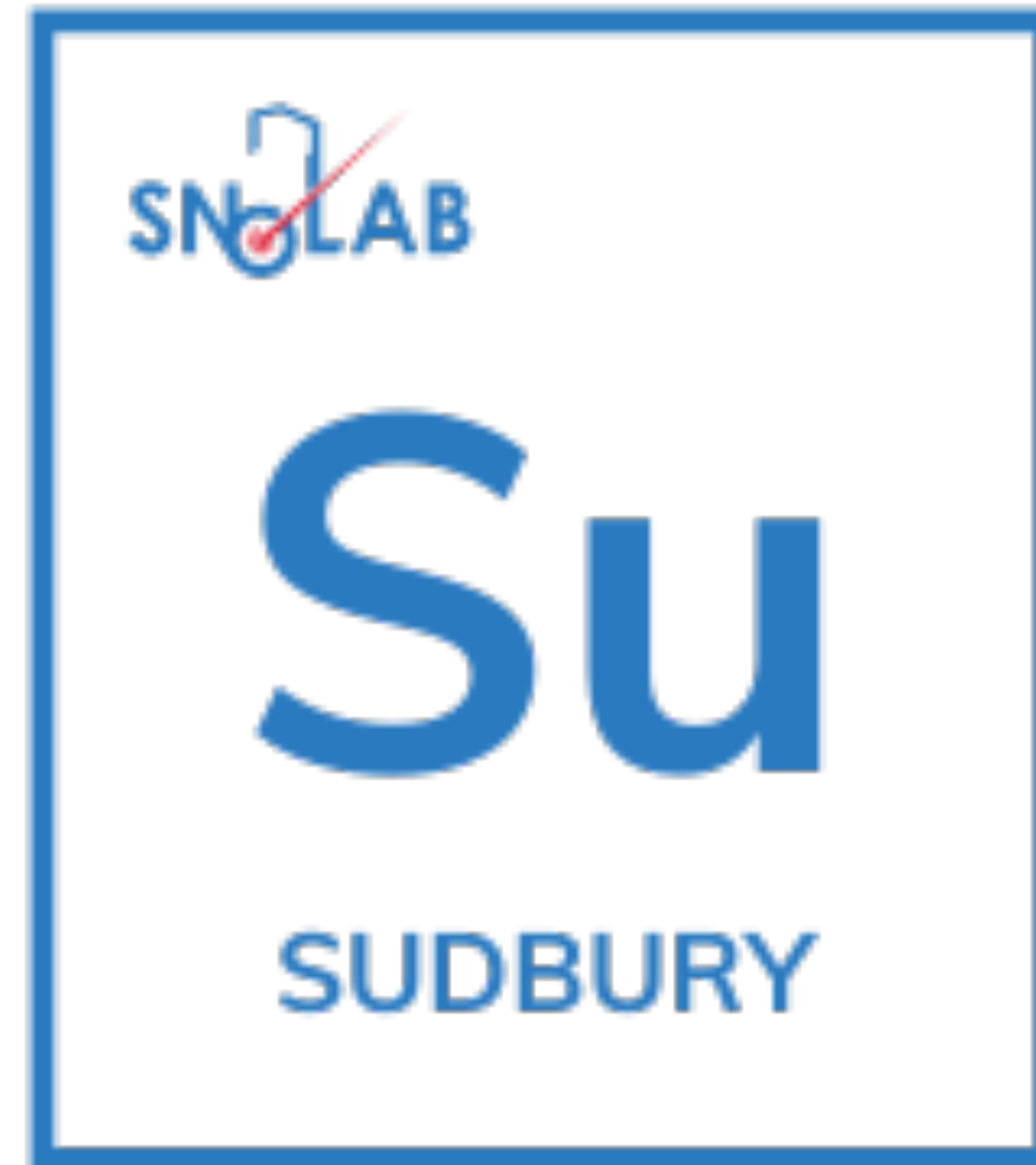
The Implementation Plan for this strategic plan will be made public soon!

New Organizational Structure



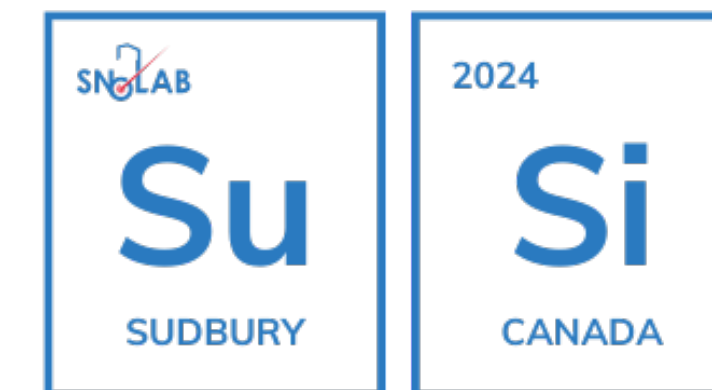
SNOLAB Organizational Diagram
 SL-MCS-LED-10-001-P Rev 126 (January 2024)





SNOLAB Underground Science Institute

Summer at SNOLAB



SNOLAB Underground
Science Institute

Become an intellectual hub that fosters collaboration and connection.

- Pilot a program designed around experimentalists at SNOLAB, **June 24 – August 16.**
- Three core thematic lecture periods (aimed at graduate students and postdocs, all invited)
 - The Dark Cosmos
 - Neutrino Science
 - Quantum Technology
- SNOLAB events around the lecture period:
 - User Meeting: June 26-27
 - TRICEP: July 8-19
 - Collaboration meetings: SNO+, SuperCDMS, ...
- More information and application details:

Each period is two weeks in length and has 5 lectures.



<https://indico.snolab.ca/event/3/>

New Process for Additional Engineering and Technical Support

Response to SEF/Collaboration Needs

Issue: SNOLAB often receives requests from collaborations for additional engineering or technical support, beyond what we have the capacity to provide.

- Experiments often have funds to hire additional engineering or technical support for term positions but have difficulty filling those positions due to a variety of factors, including the need to relocate those persons to Sudbury.

Solution: SNOLAB has set up a process by which collaborations can be charged for additional engineering support.

- **IMPORTANT NOTE:** SNOLAB will still provide baseline engineering, project management, and technical support as agreed upon with collaborations through the life-cycle process.
- Details on this new capability will be discussed in the talk by Jeter.



Thank you! Questions?

