2025/04/29
Future Projects Workshop

Future Project Workshop – SNOLAB Introduction

Jeter Hall
Director of Research

Land Acknowledgment

SNOLAB is located on the traditional territory of the Robinson-Huron Treaty of 1850, shared by the Indigenous people of the surrounding Atikameksheng Anishnawbek First Nation as part of the larger Anishinabek Nation.

We acknowledge those who came before us and honour those who are the caretakers of the land and the waters.

Introducing SNOLAB

- SNOLAB hosts rare event searches and measurements. It's located 2 km underground in the active Vale Creighton nickel mine near Sudbury, Ontario, Canada.

- SNOLAB is operated jointly by University of Alberta, Carleton University, Laurentian University, University of Montreal, and Queen's University.

- SNOLAB operations are funded by the Province of Ontario, and the Canada Foundation for Innovation.

- Experiment and research funding provided by many Canadian and international partners

Future Projects Workshop

This workshop is part of our strategic planning process

The workshop has a number of goals:

- Bring together the user community to look at the future
- Get a pulse on the future directions of the science
- Discuss current/future SNOLAB developments to help planning
- 5- to 15- year outlook (see Jodi's talk)

The workshop is ***not*** part of the project proposal/approval process.

That is the project lifecycle process with the Experimental Advisory Committee.

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 collaborates with scientific research requiring deep underground facilities.

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

SNOLAB is interested in pursuing new collaborations and opportunities in emerging areas of underground science

- Effects of radiation on quantum technologies

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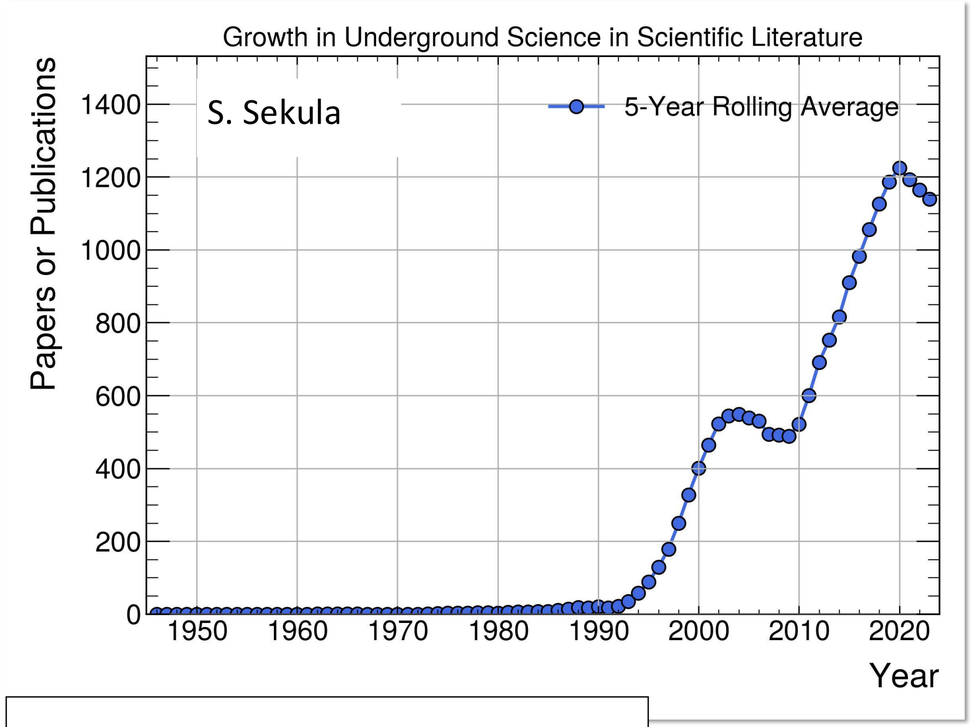
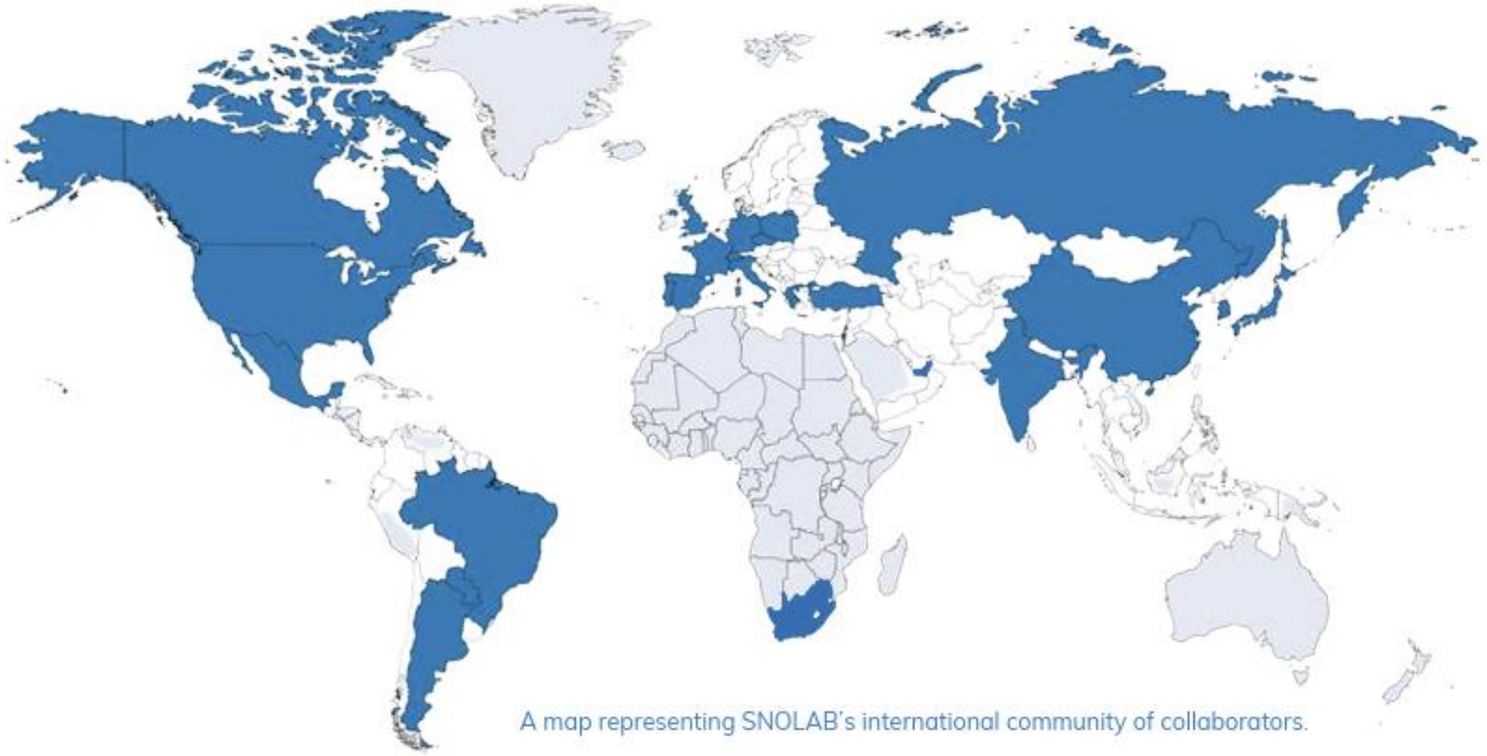


Publications in underground science.
Includes all underground labs.

The SNOLAB user community is international



A map representing SNOLAB's international community of collaborators.

1000+ annual academic users/collaborators

25% of those users/ collaborators are Canadian researchers

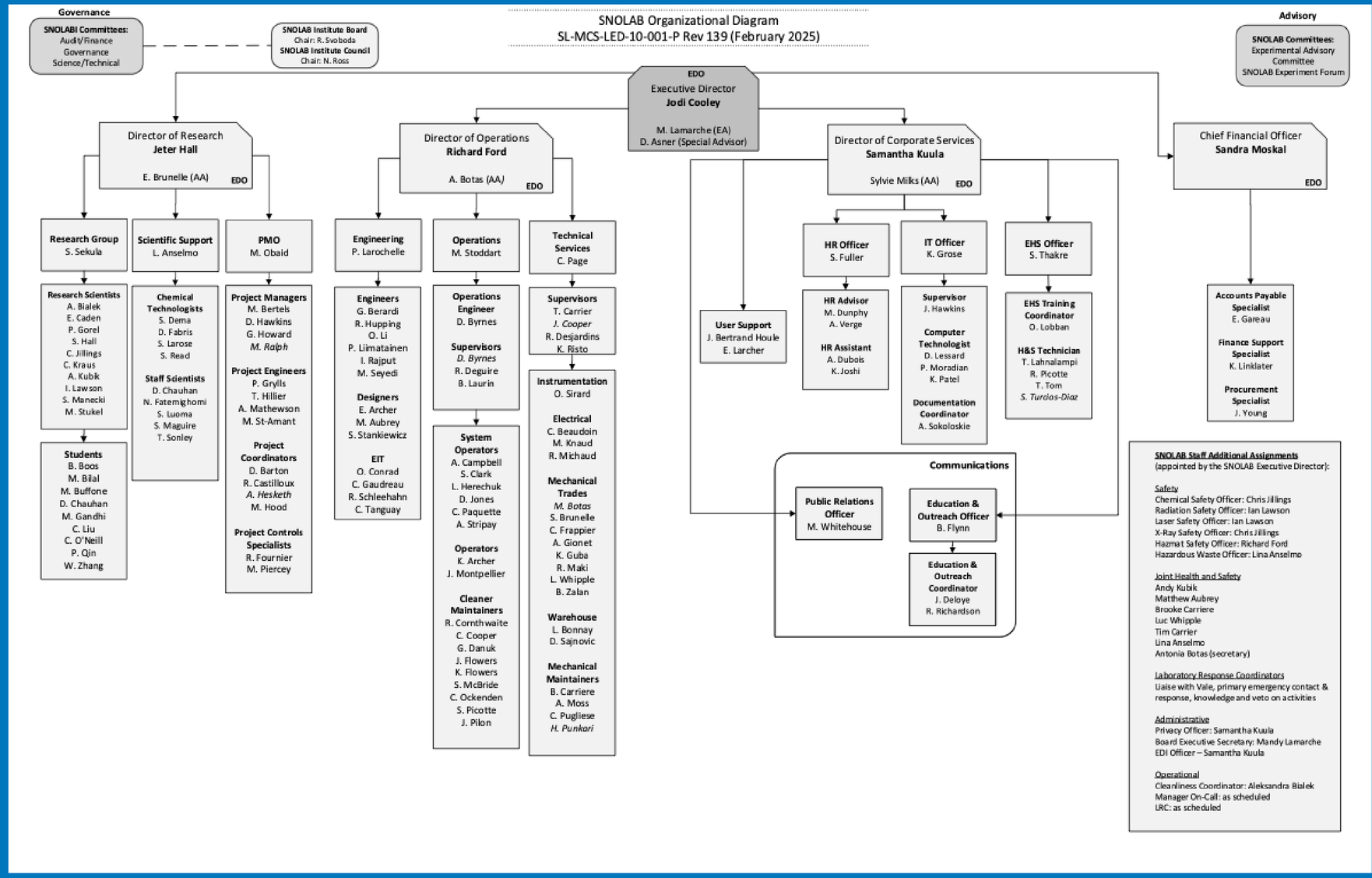
23 Our international collaborators come from 23 countries

165 Our international collaborators come from 165 institutions

Country	Institutes	# of Users
Belgium	1	1
Canada	**20**	**280**
China	2	17
Czechia	1	10
France	6	21
Germany	8	72
Greece	1	2
India	2	9
Israel	1	8
Italy	17	71
Japan	3	15
Mexico	1	17
Poland	2	10
Portugal	1	9
Russia	12	78
Slovakia	1	5
South Africa	1	4
South Korea	2	5
Spain	2	11
Switzerland	2	12
Turkey	1	1
UAE	1	1
UK	11	50
USA	66	428
Total	**165**	**1,137**

SNOLAB by Organization

- ~150 employees
- Dedicated to operating the laboratory space and experiments
- Scientists, Project Managers/Coordinators, Project Engineers, Design Engineers, Operators, Millwrights, Electricians, Instrumentation, Chemical Support
- Human resources, IT support, Environment Health and Safety, Communications, Finance



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

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

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

Infrastructure: Surface Spaces & Support

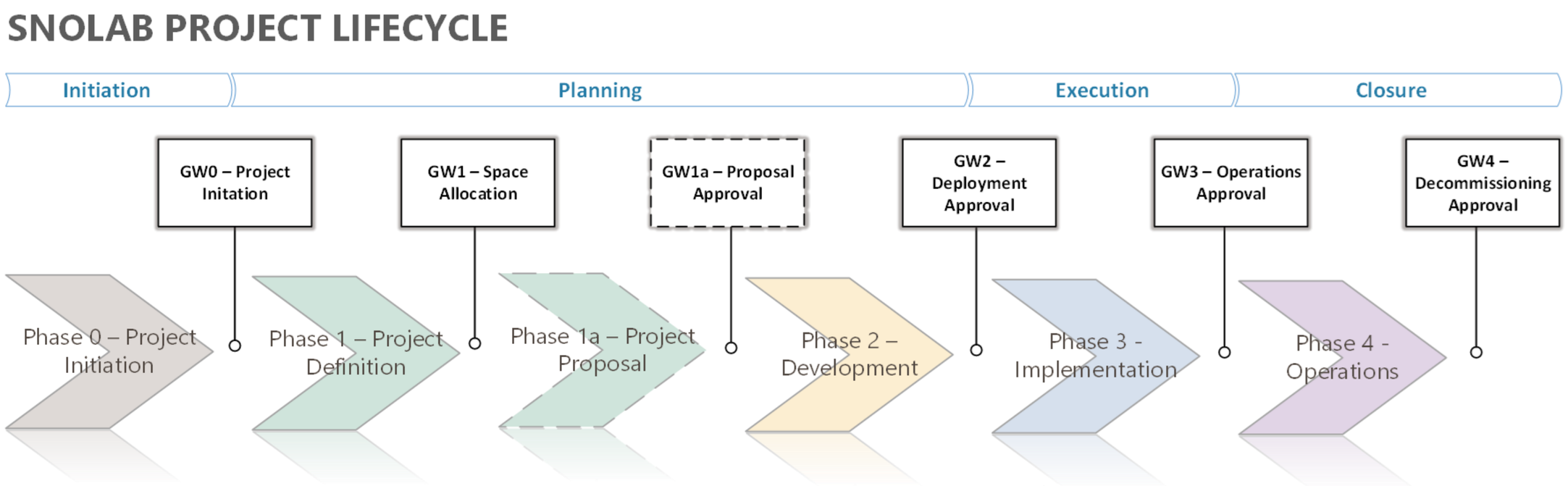
Offices, Clean Labs, Shipping/Receiving on Surface

- Dedicated office space for users.
- Clean room laboratories for surface work and final checks before shipping underground.
- Multiple meeting rooms (10-20 people) and auditorium seating ~150.

Create Welcoming Intellectual Environment - SNOLAB Underground Science Institute

- Invited senior scientists in-residence will give/lead topical and relevant lectures and discussions in weeks between.
- Hosting major international conferences (NNN25)
- Goal of increasing the interactions between scientific collaborations while accomplishing the experimental goals.

Accountability of Collaborations



- SNOLAB life cycle process whereby SNOLAB supports experiments through their life cycle at the lab.
- Latest modification: All collaborations seeking space allocations are required to have both an EDI plan and a code of conduct which is reviewed as part of the life cycle process for an experiment.

Conclusions

- SNOLAB is a clean, underground laboratory hosting a variety of experiments.
- SNOLAB hosts projects at a variety of lifecycle stages, and we hope to turn over the spaces to host new projects over the next decade.
- SNOLAB is full, but by turning over the experimental spaces we continue to have availability for small, medium, and large experiments.
- We look forward to stimulating discussions of the potential for SNOLAB science in the future!

Partners

Laurentian University
Université Laurentienne

Queen's University

Carleton University

Université de Montréal

University of Alberta

Vale