2025/04/29
Conference for Project Management Professionals

SNOLAB Introduction

Jeter Hall
Director of Research





Land Acknowledgment

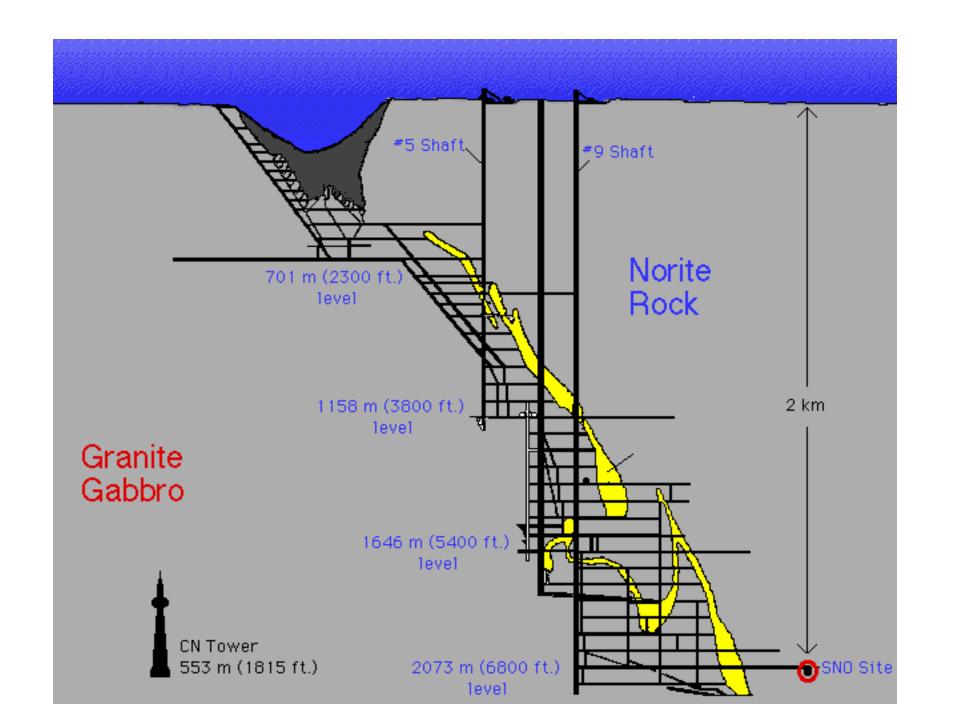
SNOLAB is located on the traditional territory of the Robinson-Huron Treaty of 1850, shared by the Indigenous people of the surrounding Atikameksheng Anishnawbek First Nation as part of the larger Anishinabek Nation.

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

Science Strategy



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

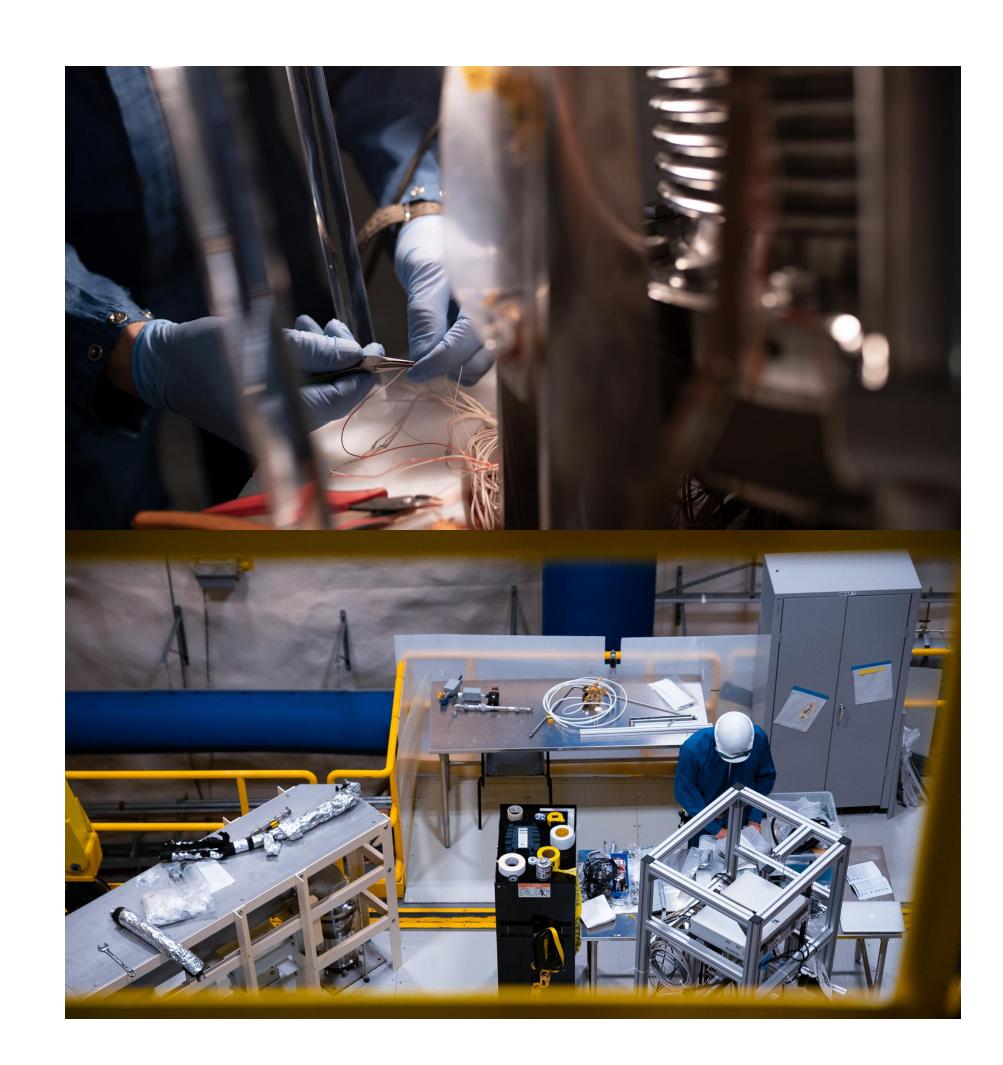
- What is the nature of dark matter?
- What is the nature of the neutrino?

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



Science Strategy



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

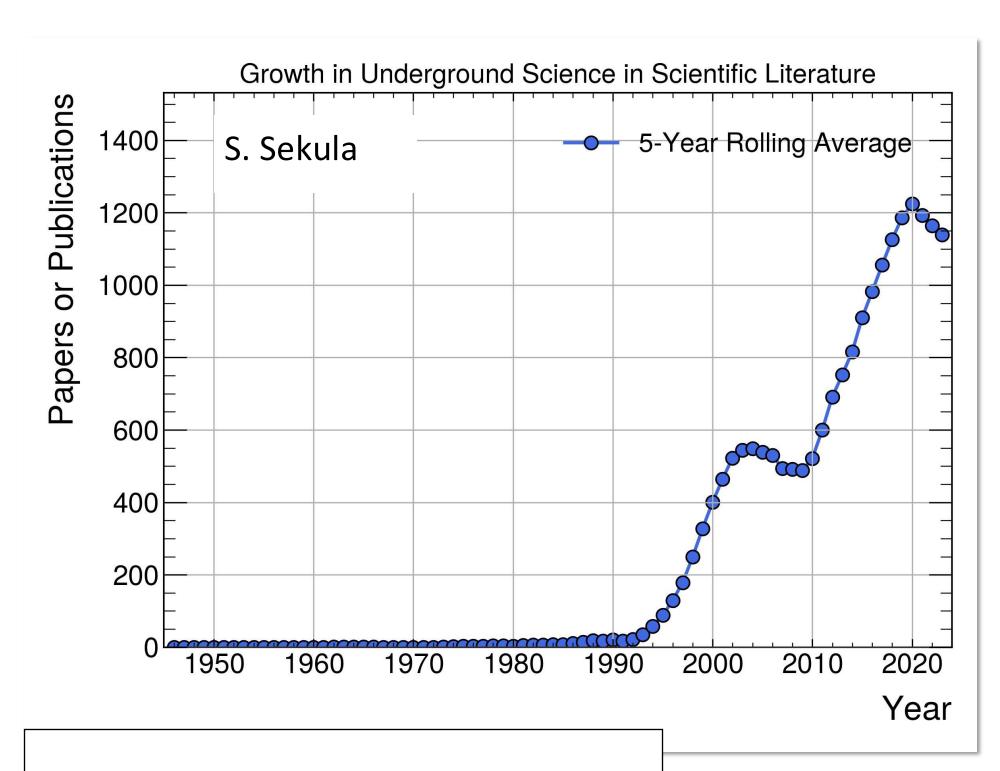
- What is the nature of dark matter?
- What is the nature of the neutrino?

SNOLAB collaborates with scientific research 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 is interested in pursuing new collaborations and opportunities in emerging areas of underground science

• Effects of radiation on quantum technologies



Publications in underground science. Includes all underground labs.

The SNOLAB user community is international





1000+ 🚣

annual academic users/collaborators 25% 🛚

of those users/ collaborators are Canadian researchers 23 9

Our international collaborators come from 23 countries

165 ₱

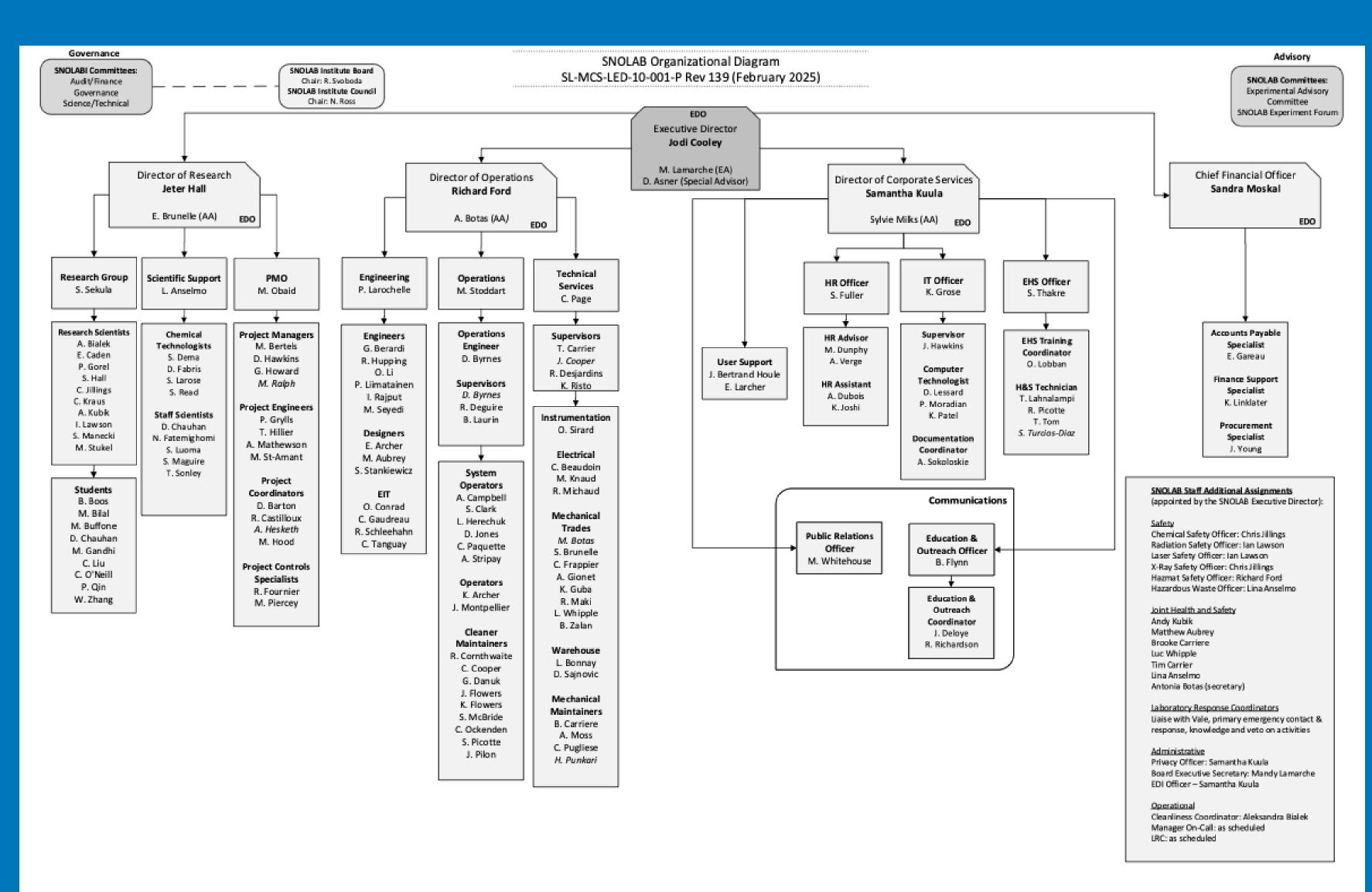
Our international collaborators come from 165 institutions

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



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



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

Expected outcomes:

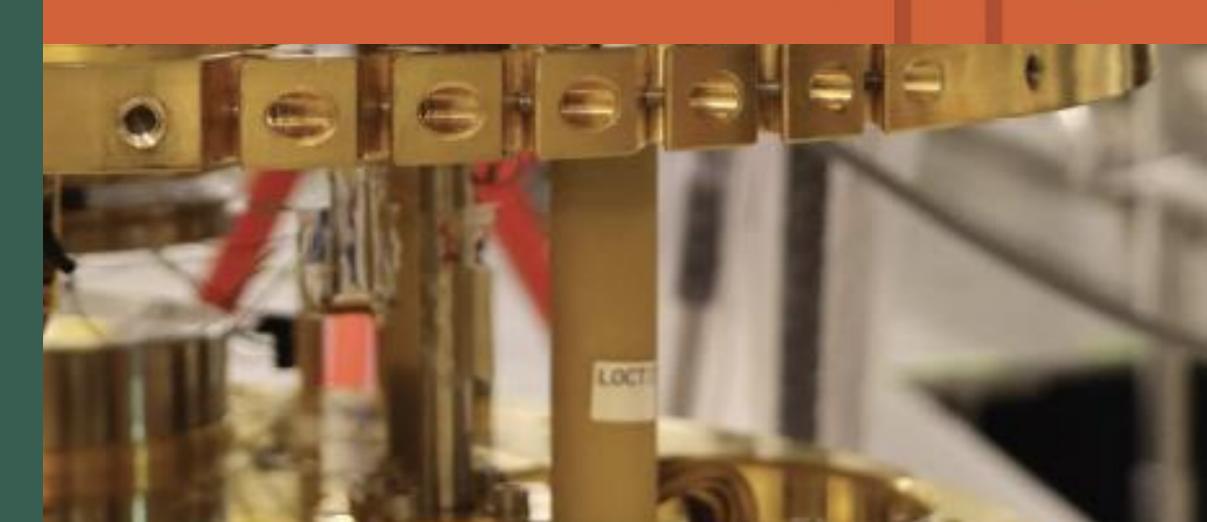
- Attraction of the most advanced international experiments to Canada
- Greater global impact and enhanced reputation of Canada's underground science infrastructure

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

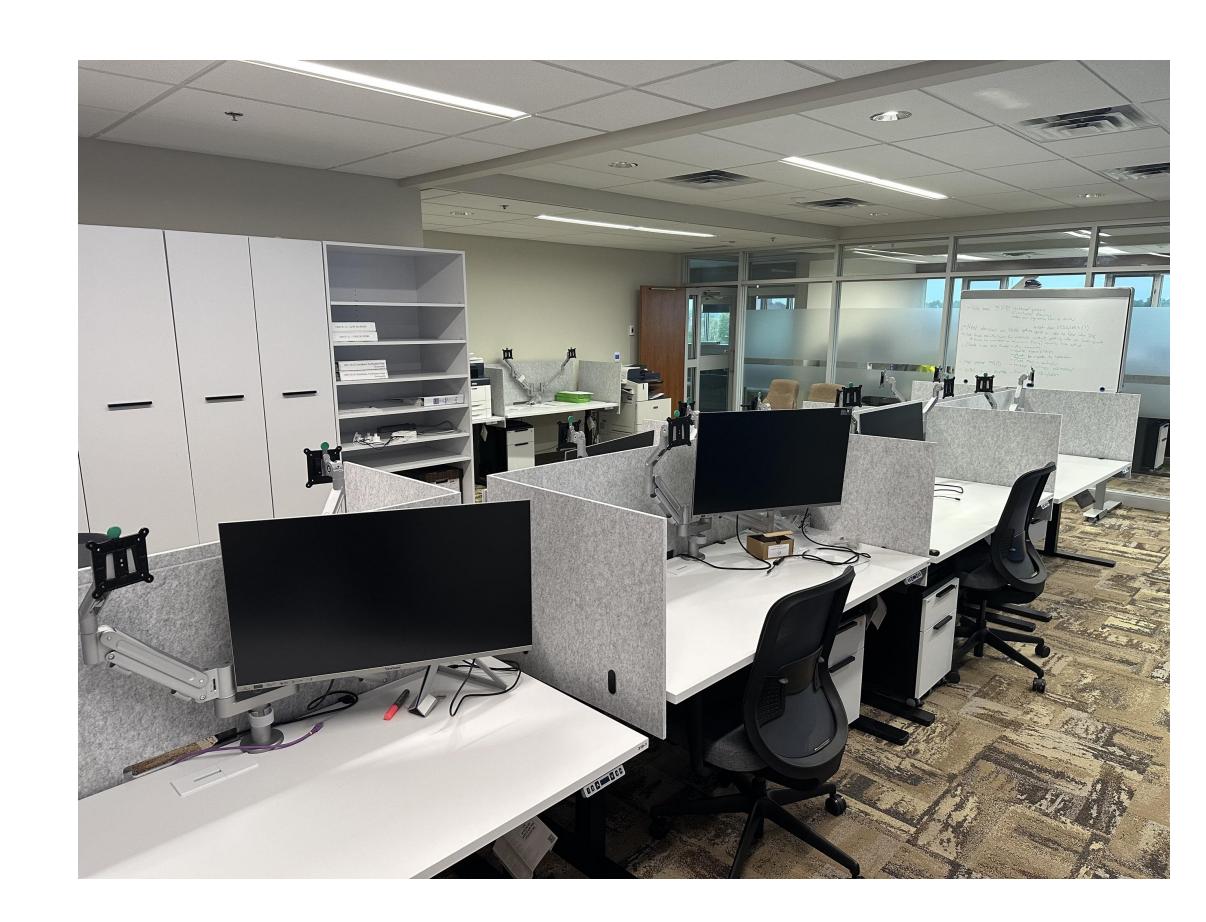


Offices, Clean Labs, Shipping/Receiving on Surface

- 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.

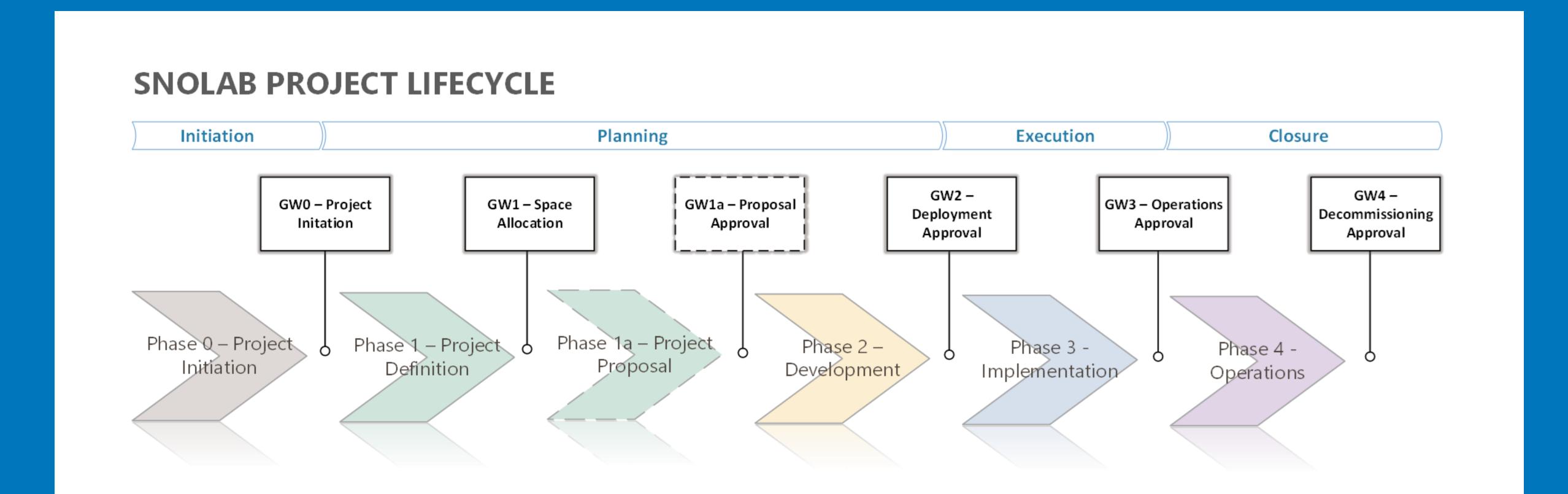
Create Welcoming Intellectual Environment - SNOLAB Underground Science Institute

- 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.



Efforts split into Experiments and Projects

Experiments often result in projects

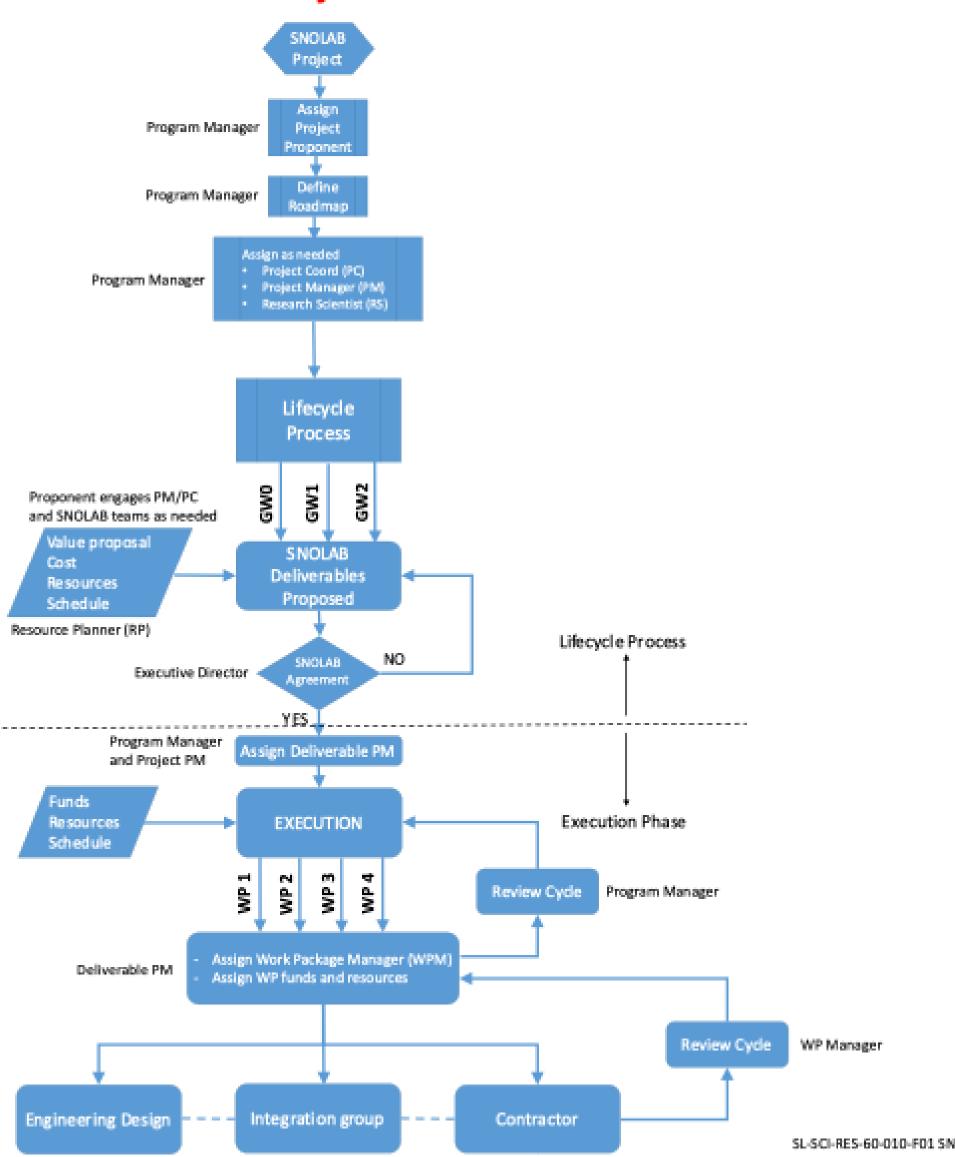
Both internal upgrades and external projects subject to review

- External Advisory Committee
- Project Oversight Group

Regular gait for project oversight

- External advisory committee reviews experiments biannually
- POG meets to review projects monthly
 - New project intake once per year

SNOLAB Project Workflow





Efforts split into Experiments and Projects

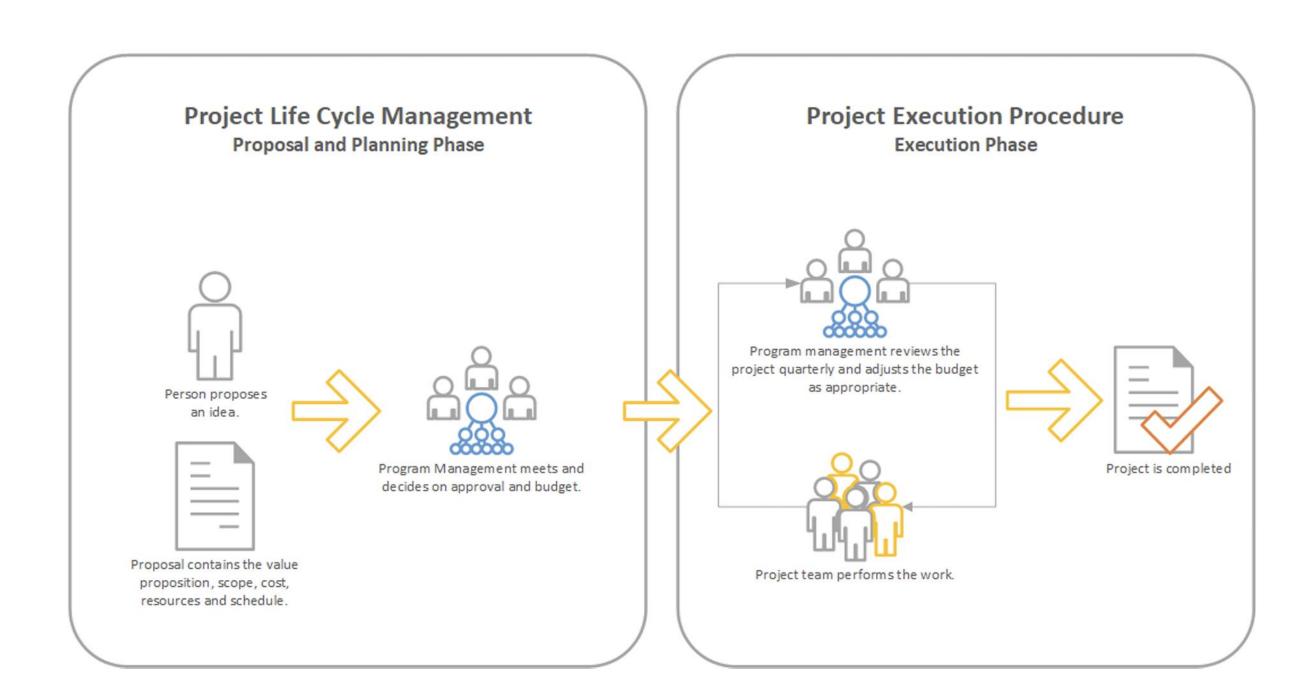
Experiments often result in projects

Both internal upgrades and external projects subject to review

- External Advisory Committee
- Project Oversight Group

Regular gait for project oversight

- External advisory committee reviews experiments biannually
- POG meets to review projects monthly
 - New project intake once per year





Efforts split into Experiments and Projects

Experiments often result in projects

Both internal upgrades and external projects subject to review

- External Advisory Committee
- Project Oversight Group

Regular gait for project oversight

- External advisory committee reviews experiments biannually
- POG meets to review projects monthly
 - New project intake once per year

Project Name:	Argon Rem	oval from LN2	Proje	ct Lead:		Tristan Hillier			
POG #:	P:	2501	Fiscal	Year SPI		#DIV/0!	Fiscal Year	FY2025-26	
Status Report Month:	,	May	Current Ar	nnual Budget		50,900	(YYYY-YY)		
Financial Period Ending:		Apr		cycle Estimate		\$50.9k	Project Status	Active	
) Monthly Status Reporting									
Last 30 Days			Next 30 Days			-11 11 11	Next 90 Days		
Accomplishments (recent progress, what did		Objectives (short range u	upcoming plans, goal	and/or targets) Objectives (medium range plans, goals, and/or targets) Distillation			/or targets)		
Distillation: Got a project Engineer assigned	Distilla - Deve	tion Hop specifications, engineering, and	documents for next stage	design review		mpleted technical specifications			
		,,,,,,		se design eview		- Prepare for design review			
eolite	Zeolite					-			
Zeolite Doping with Silver Tested Refining Testing Method	- Have	e quote for larger, pressure-rated ch	hamber.		Zec		wher		
verning resung Mechod	ll.				- **	- Want to complete measurements by September			
	ll.								
					===				
Last 30 Days			Next 30 days			lance Male 6	Next 90 Days		
Issues, Risks, Concerns (what didn't go so mall Chamber is possibly too small to see effects.	well?)	Issues, Risks, Concems	(what could go wro	ng this month?)		Issues, Risks, Conce	ms (longer range risks bei	ng monitored)	
mail chamber is possibly too small to see effects.					- 11				
	- 11				- 11				
	ll.				- 11				
					- 11				
	ll.								
	ll.								
	ll.								
	ll.								
	POG Escalati	ion (optional - use this box	as required to escal	ate issues / seek	support fron	the POG)			
) Schedule				D) Change Orde	er Log				
	Baseline Date						Proposed		
Milestone Tracker	[FY Baseline]		Actual Date (YYYY-		Fiscal Star	us Description	Change to	Comments	
THIE STOTIC HOUNCE	(YYYY-MM-DD)	(YYYY-MM-DD)	MM-DD)	Number	Year	2000	Budget		
							Dauget		
omplete Small-Scale Zeolite Measurements	2025-07-01	2025-07-01							
	2025-07-01 2025-08-29	2025-07-01							
mplete Medium-Scale Zeolite Measurements	2025-08-29	2025-08-29							
omplete Medium-Scale Zeolite Measurements omplete Technical Specifications for Distillation Column		2025-08-29 2025-07-31							
omplete Medium-Scale Zeolite Measurements omplete Technical Specifications for Distillation Column ochnical Design Review	2025-08-29 2025-06-01 2025-08-29	2025-08-29 2025-07-31 2025-08-29							
omplete Medium-Scale Zeolite Measurements omplete Technical Specifications for Distillation Column echnical Design Review reate Tender Package for Fabrication and Assembly	2025-08-29 2025-06-01 2025-08-29 2025-12-19	2025-08-29 2025-07-31 2025-08-29 2025-12-19							
omplete Medium-Scale Zeolite Measurements omplete Technical Specifications for Distillation Column ochnical Design Review eate Tender Package for Fabrication and Assembly stallation & Commissioning	2025-08-29 2025-06-01 2025-08-29 2025-12-19 2026-07-31	2025-08-29 2025-07-31 2025-08-29							
omplete Medium-Scale Zeolite Measurements omplete Technical Specifications for Distillation Column echnical Design Review reate Tender Package for Fabrication and Assembly sstallation & Commissioning	2025-08-29 2025-06-01 2025-08-29 2025-12-19	2025-08-29 2025-07-31 2025-08-29 2025-12-19 2026-07-31							
omplete Small-Scale Zeolite Measurements omplete Medium-Scale Zeolite Measurements omplete Technical Specifications for Distillation Column echnical Design Review reate Tender Package for Fabrication and Assembly installation & Commissioning operational Readiness Review	2025-08-29 2025-06-01 2025-08-29 2025-12-19 2026-07-31	2025-08-29 2025-07-31 2025-08-29 2025-12-19 2026-07-31							
mplete Medium-Scale Zeolite Measurements mplete Technical Specifications for Distillation Column chnical Design Review eate Tender Package for Fabrication and Assembly stallation & Commissioning	2025-08-29 2025-06-01 2025-08-29 2025-12-19 2026-07-31	2025-08-29 2025-07-31 2025-08-29 2025-12-19 2026-07-31							



Efforts split into Experiments and Projects

Experiments often result in projects

Both internal upgrades and external projects subject to review

- External Advisory Committee
- Project Oversight Group

Regular gait for project oversight

- External advisory committee reviews experiments biannually
- POG meets to review projects monthly
 - New project intake once per year

	RESOURCE CONFLICT MATRIX of PRIORITIES							
	Sinoning a	POS PHOVECT.		Continua,				
	00		Imminent Safety Issues and Facility Emergency Repairs					
	01		Facility Operations					
	02		Executive Requirements					
	03-SP1		Experiment Operations (HALO, CUTE, DAMIC, FLAME, REPAIR, Xe-Still, SNO+, NEWS-G, SENSEI, PICO-40, Low Background Measurements, HC Environmental Monitoring Station, DEAP)	GW-3				
	04-SP2	P2102C	Information Security	GW-2				
	05-SP2	P2104	MPC Breaker Upgrade	GW-2				
	06-SP1	P1806	SuperCDMS	GW-2				
	07-SP1	P2101	PICO-500	GW-2				
	08-SP1	P2204	SNO+ Te	GW-2				
	09-SP2	P2511	CUTE Cryogenic Fridge Enhancement	GW-2				
	10-SP1	P2007	CTBT Counter	GW-2				
- 1	11-SP1	P2105	SBC	GW-1				
1	12-SP1	P1902	nEXO	GW-0				
- 1	13-SP1	P2512	IceCube DOM Test	GW-0				
- 1	14-SP1	P2206	OSCURA	GW-1				
- 1	15-SP1	P1903	LEGEND-1000	GW-0				
- 1	16-SP2	P2503	Underground Flooring Pilot	GW-2				
- 1	17-SP2	P2505	Underground Monitoring Security	GW-0				
- 1	18-SP2	P2602	Electronics Workstations	GW-0				
- 1	19-SP2	P2501	Argon Removal from LN2	GW-0				
- 1	20-SP2	P2609	Cleanliness: Particle Counters	GW-0				
- 1	21-SP2	P2612	Underground High-Density Storage	GW-0				
- 1	22-SP2	P2601	Power Reliability Study	GW-0				
- 1	23-SP2	P2610	Underground Pressure Zones & Differential Pressure Study	GW-0				
- 1	24-SP1	P2606	Metal Assay and Production Laboratory using Electroforming (MAPLE)	GW-0				
- 1	25-SP2	P2608	Automated Radon Trap for Assays	GW-0				
- 1	26-SP2	P2613	TAD Extension - Floor and Block Wall	GW-0				
- 1	27-SP1	P2604	Radioactive Isotope Measurement Program at SNOLAB (RAMPS)	GW-0				
- 1	28-SP1	P2605	General Use Neutron Detector	GW-0				
1	29-SP2	P2611	EV Charging Trade Study	GW-0				
1	30-SP1	P2607	Tellurium Acetylacetonate Solid Double Beta Decay Target (TeAS-0bbv)	GW-0				
ı	31-SP2	P2506	Underground Monuments	GW-0				
ı	32-SP2	P2603	DT Generator Repair and Upgrades	GW-0				
- 1	33-SP2	P2205	Denka Boom	GW-2				

Responsive Requirements
Internal Projects
Science Programme

Revised: 2025-04-25

NOTE: This list is used by management and supervision to guide priorities of their teams when there are competing demands on their resources. It is NOT a ranked list based on science value but assesses many aspects.

Note: 00 (Priority #) - SP# (Stategic Plan Objective #)

Conclusions



- SNOLAB is focused on research projects that can take advantage of the underground laboratory
 - Many of these are fundamental physics experiments
- Completing large, international experiments is a challenge
- Project management helps the organization plan, oversee, and deliver in this challenging project environment



Partners











