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SuperCDMS SNOLAB Project

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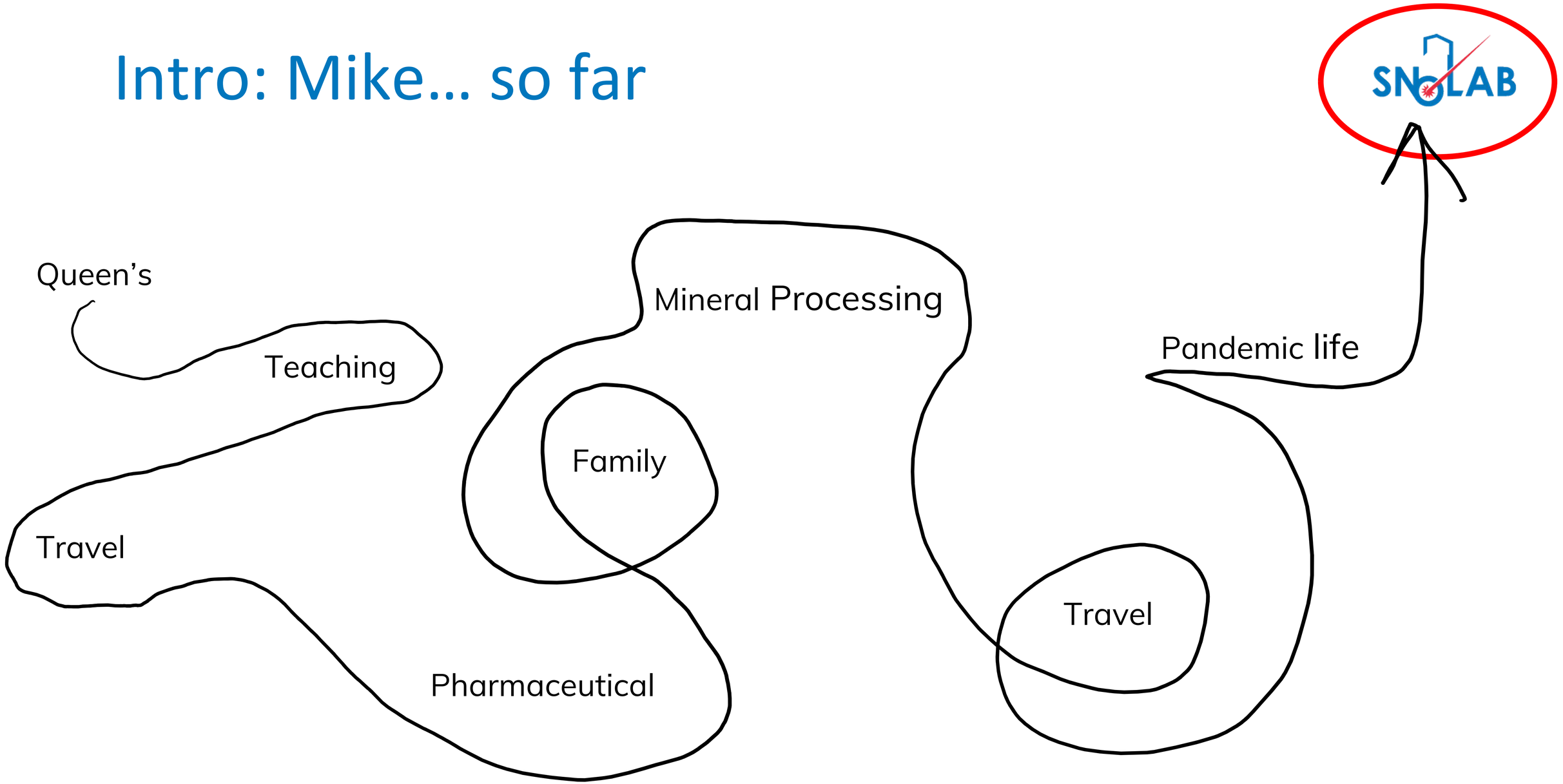
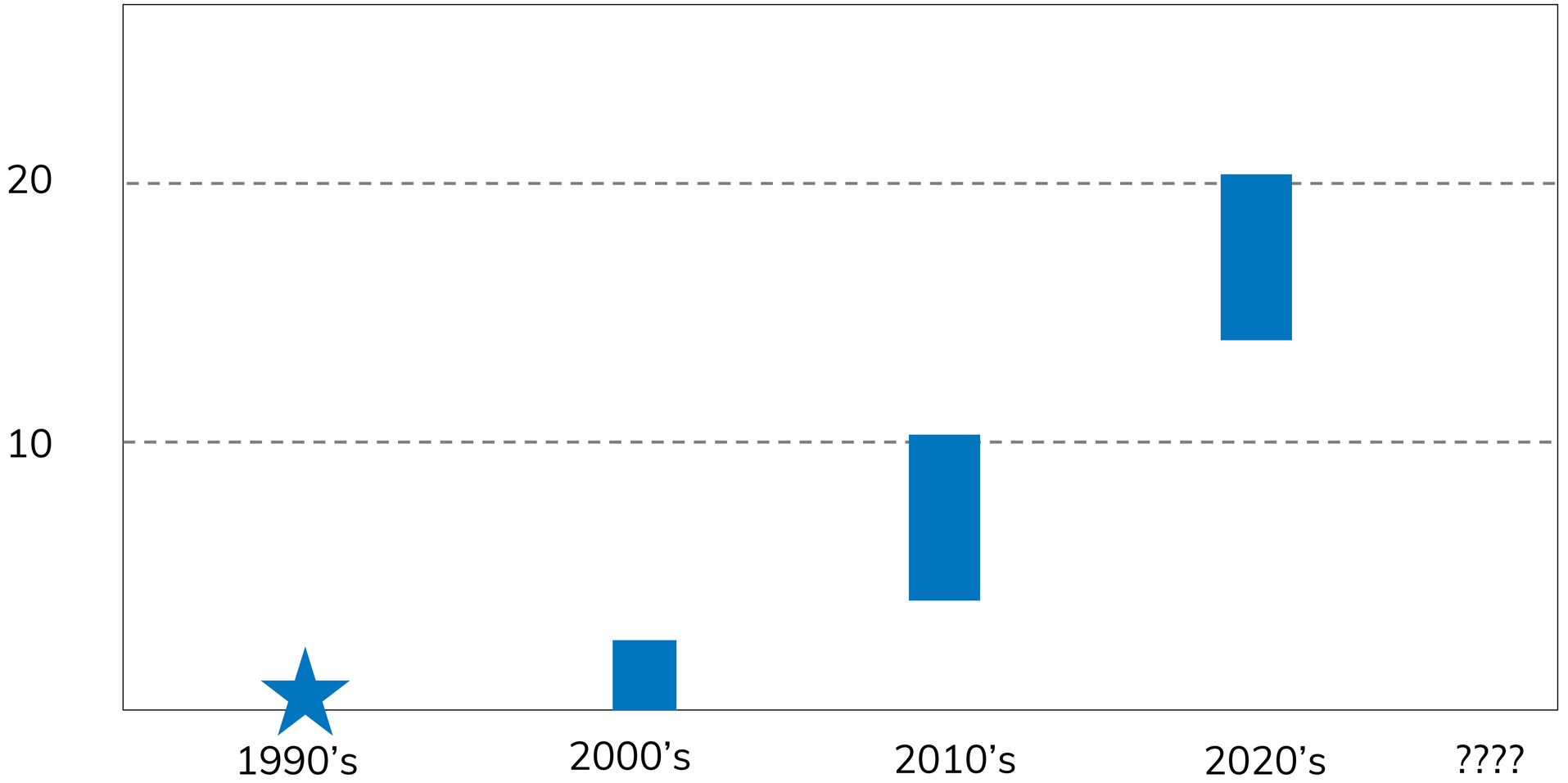
Intro: Mike… so far



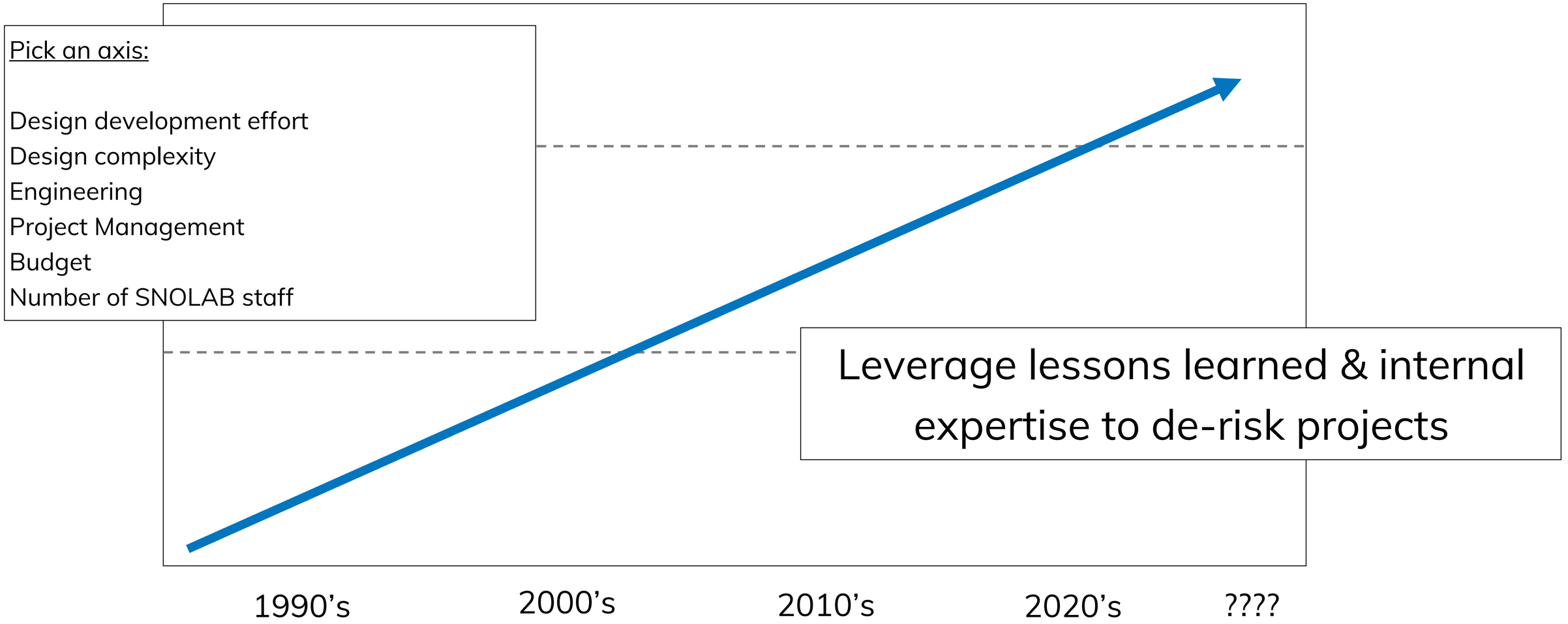
Outline

- SNOLAB as a host facility
- SuperCDMS Overview
- Integrated Project Management
- Successes
- Challenges

SNOLAB Active Experiments



Evolution of a host lab



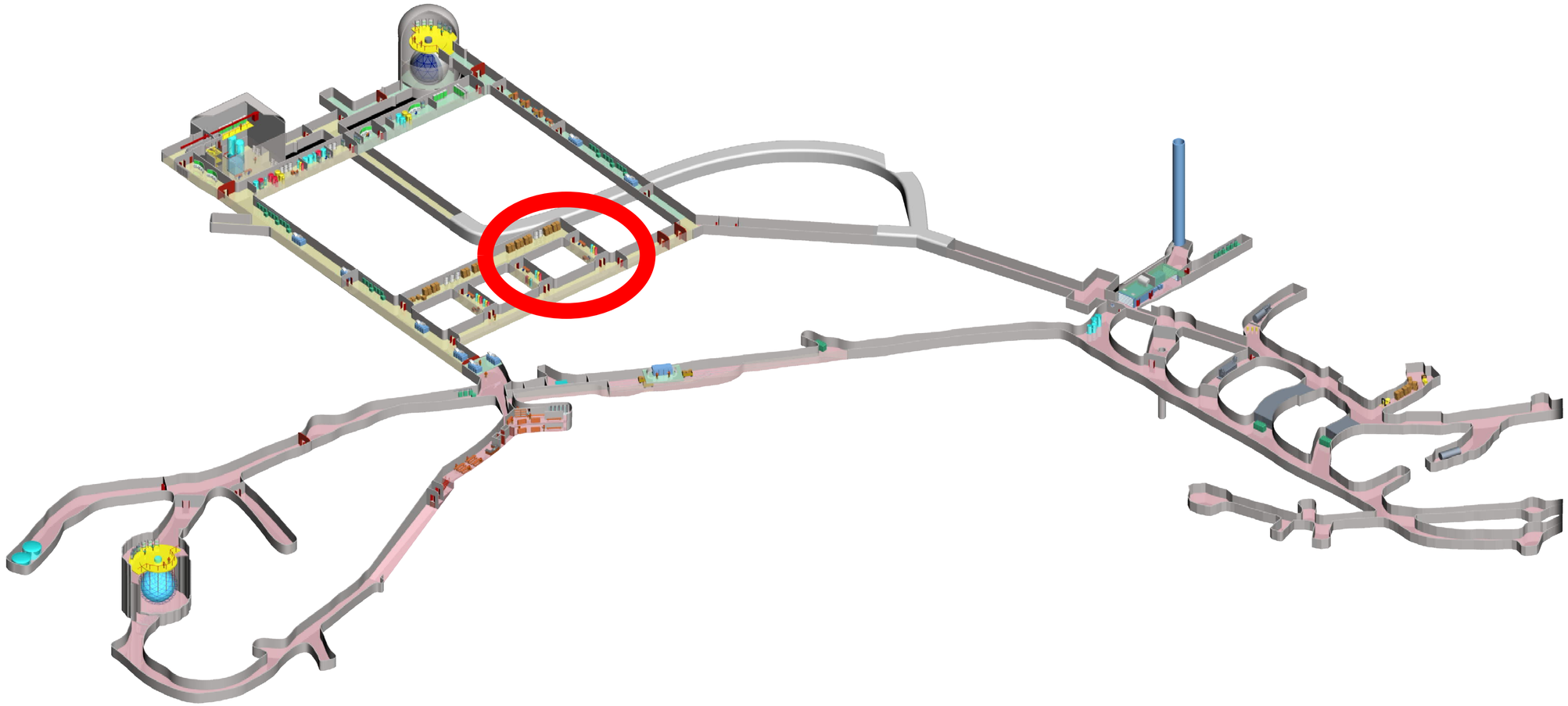
What is SuperCDMS?

Direct detection cryogenic dark matter search

> *"SuperCDMS detectors are designed with the primary function of detecting the minute crystal lattice vibrations (phonons) and ionization (charge) generated within the detector crystal by elastic collisions between detector nuclei and as low-mass dark matter particles."*
>
> (https://supercdms.slac.stanford.edu/, 2021)

Majority of funding from DOE, NSF and CFI

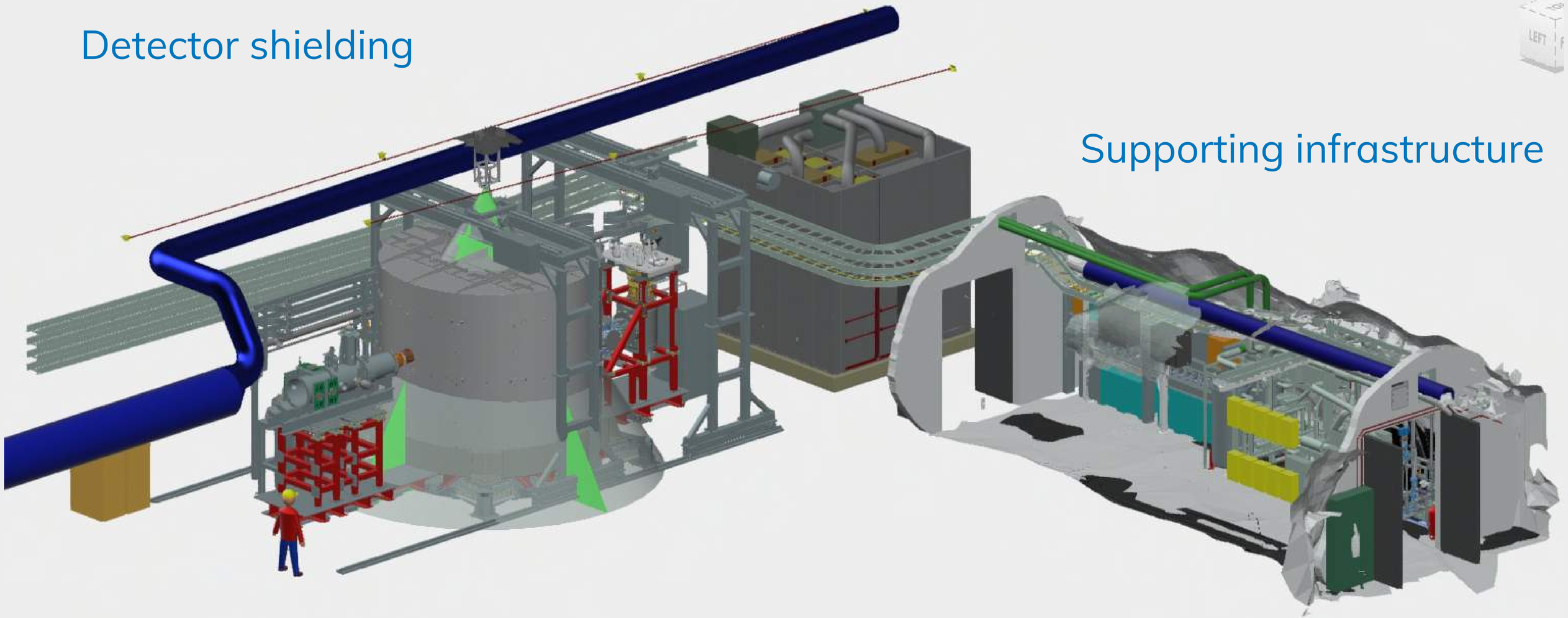
SuperCDMS at SNOLAB



Class 100 cleanroom

Detector shielding

Supporting infrastructure



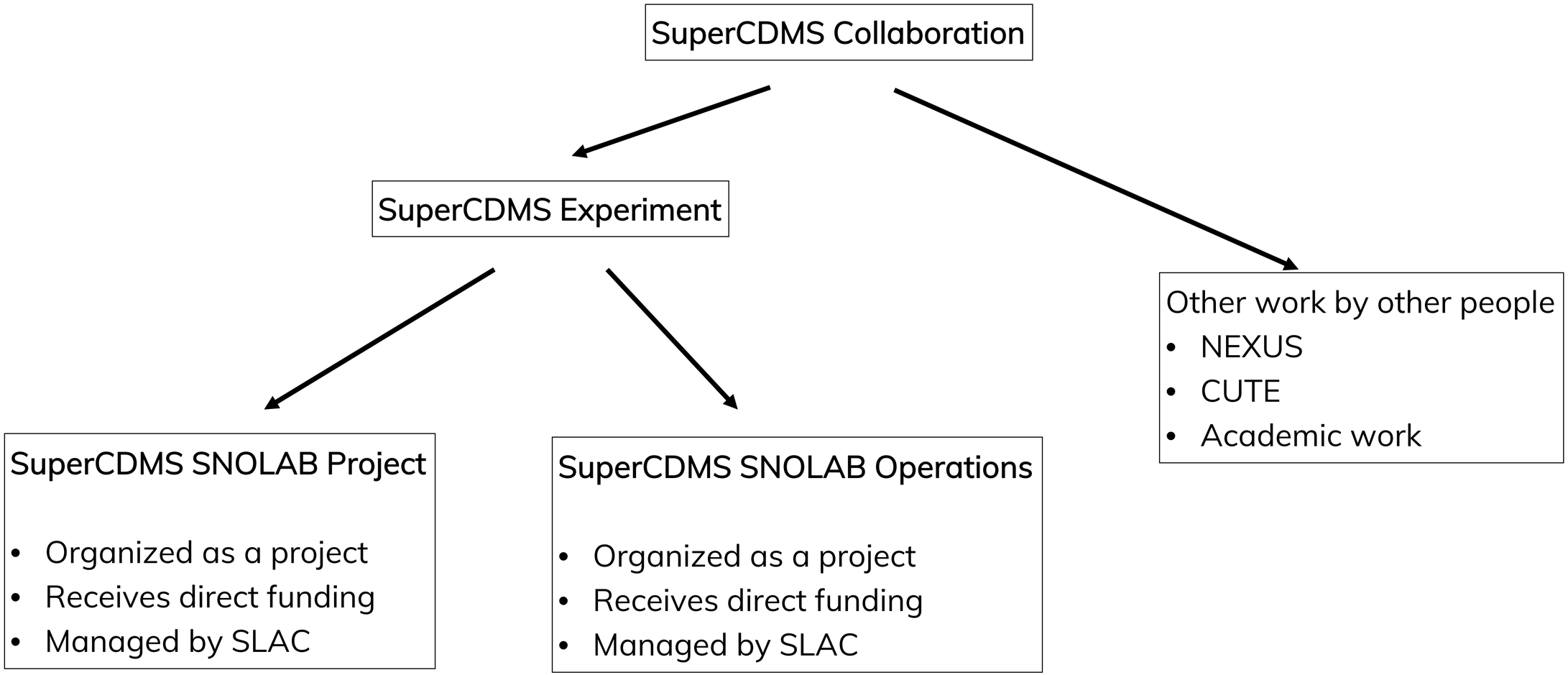
Construction

Integrated PM at SuperCDMS

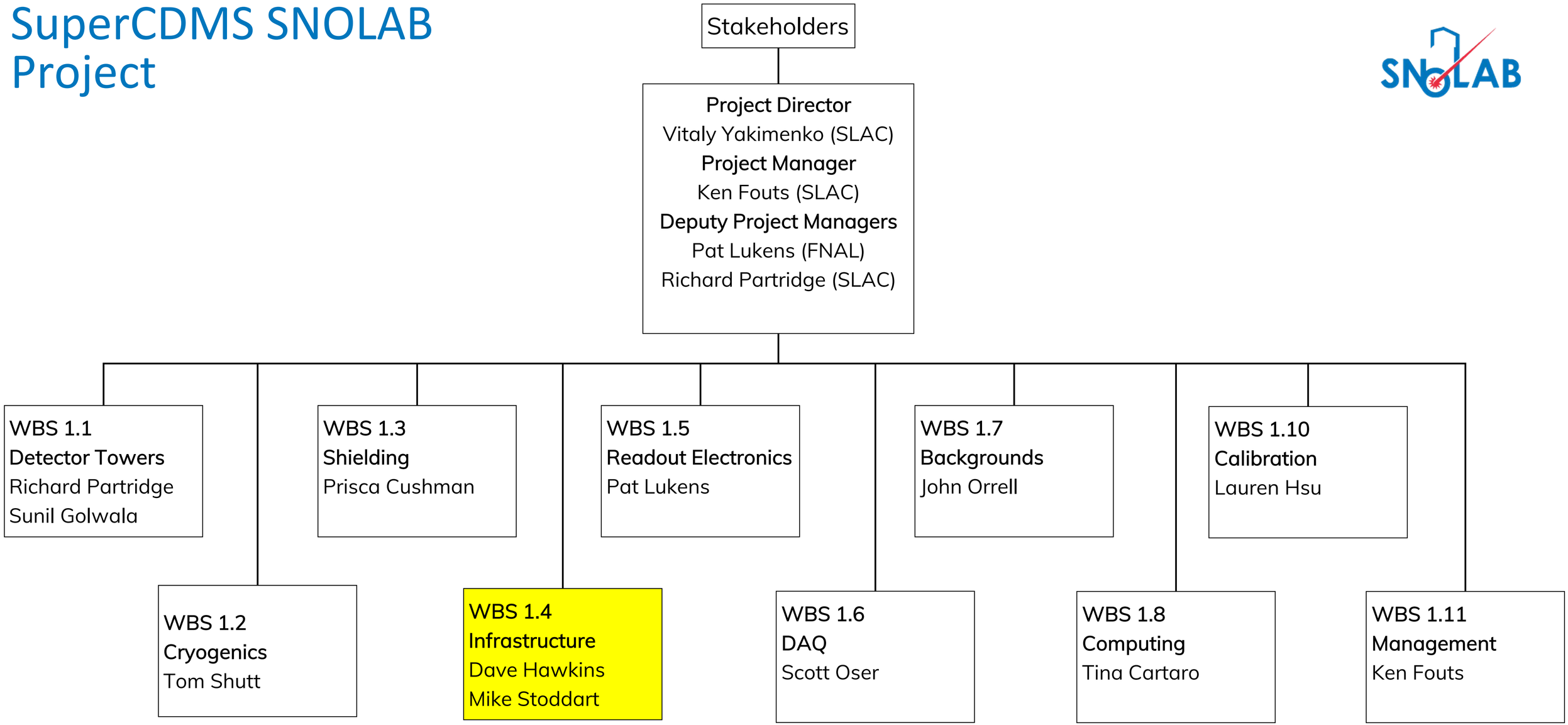
- Large external experiment, multi-year construction effort
- Multiple SNOLAB personnel embedded as L2 sub-system managers
- Improved communication between experiment and SNOLAB
- Direct access to SNOLAB resources

Ultimate Goal: Ensure successful implementation of experiments

PM Structure of SuperCDMS



SuperCDMS SNOLAB Project

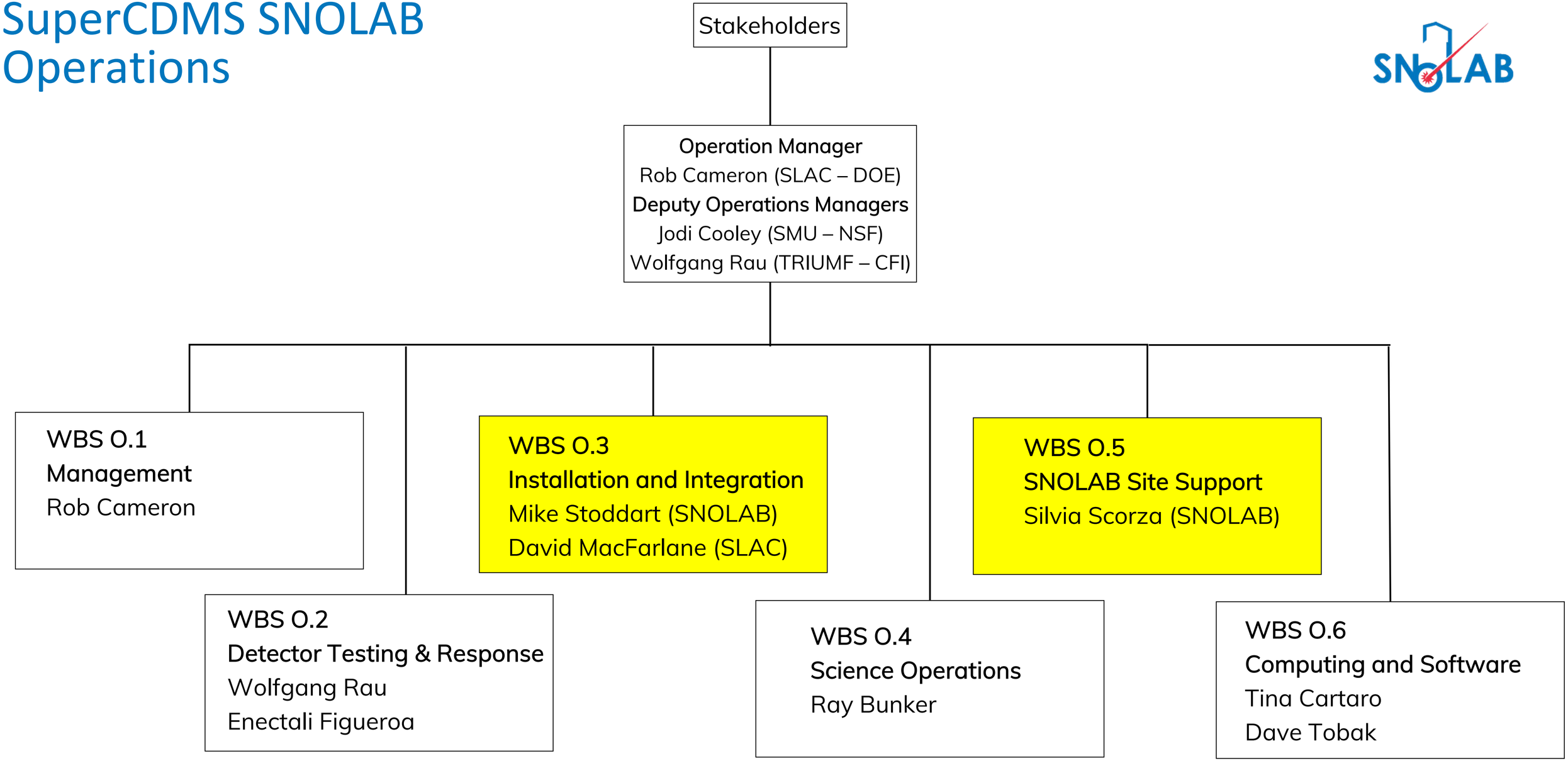


SuperCDMS SNOLAB Project

WBS 1.4
Infrastructure
Dave Hawkins
Mike Stoddart

- SNOLAB oversight for SNOLAB deliverables (cost, schedule, resources)
- Coordination of on-site work (massive advantage through pandemic)
- Project Manager focusses on L2/L3 scope
- L4 tasks / work packages managed by Project Coordinators and Project Engineers
- Scope progress reported directly to both the experiment and SNOLAB program management

SuperCDMS SNOLAB Operations



SuperCDMS SNOLAB Operations

WBS 0.3
Installation and Integration
Mike Stoddart
David MacFarlane

- Built-in support with SNOLAB Project Lifecycle requirements
- Integrate scheduling (collaboration resources, SNOLAB resources)
- Influential leadership: assigning work to people with no direct line of reporting
- Gap analysis, especially regulatory requirements (Ontario/Canada)

SuperCDMS SNOLAB Operations

WBS 0.5
SNOLAB Site Support
Silvia Scorza

- Coordination of site-access for users (ramping up now)
- Single point liaison between experiment and host lab
- Direct access to scientific resources
- Local scientific expertise built-in to experiment

What’s working

- Embedded H&S support
- Relationship building – regular interaction between collaboration and SNOLAB personnel

- Knowledge & experience of host lab built-in at an early stage
    - Risk Management (local regulations)
    - Communication & coordination of resources
    - Support with SNOLAB Project Lifecycle

- Integration evolves with Lifecycle:
    - Infrastructure: Dave
    - Installation: Mike
    - Science Operations: Silvia

Challenges

- Influential leadership: getting alignment with external groups on work priorities (convincing other people to do work for you)
- Wearing two hats: Can be confusing for experiment – when are they getting an opinion from a team member vs. getting a direction from the host lab
- High effort to integrate schedules for different work groups from different organizations (Project, Operations, SNOLAB Internal).

Big-Picture

- As SNOLAB grows, larger projects require increasing support to implement their experiments underground
- Need flexible PM strategies tailored to the needs of the experiment
- If at first you don’t succeed, try something new.

Questions/ Discussion

The face you make when:

- You’ve been in transit for 27 hrs and you’re not done yet.
- Your parents dragged you more than 51,000 km around the world
- You realize your net displacement is 0 km