



Partnership Opportunities in the U.S.

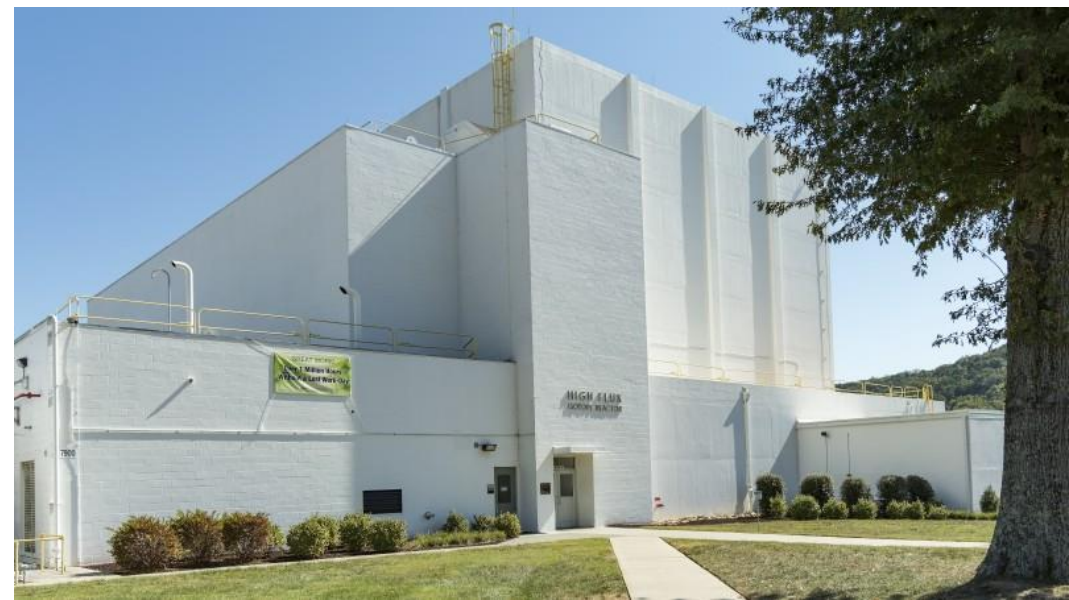
Canadian Neutron Initiative Roundtable

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NIST Center for Neutron Research

NIST

ORNL-SNS

ORNL-HFIR



Partnership opportunities in neutron scattering at SNS and HFIR

Neutrons Canada Workshop

ORNL is managed by UT-Battelle, LLC for the US Department of Energy



U.S. DEPARTMENT OF
ENERGY

Planned new instruments

- **SNS First Target Station:** 4 new instruments are at various stages of planning or construction, VENUS (imaging), DISCOVER (in situ powder diffraction), MICRON (texture analysis), BFAST (high energy vibrational spectroscopy).
- **SNS Second Target Station:** A suite of 8 instruments is part of the initial construction project, with additional instruments under development by other sponsors.
- **HFIR:** 2 new instruments are planned for the HFIR cold guide hall MANTA (cold triple axis multi-analyzer spectrometer), Neutron Spin Echo (high flux, low energy, spin echo spectrometer)

Research infrastructure

- **Sample environment:** Various opportunities to contribute to new sample environment for physics, chemistry, materials, industry, soft matter and biology applications.
- **Instrument upgrades:** Various opportunities to contribute to upgrades to existing instruments to enhance their experimental capabilities
- **Data analysis:** Collaborations are sought to develop methods and software for data analysis

VENUS

Construction complete by 2024



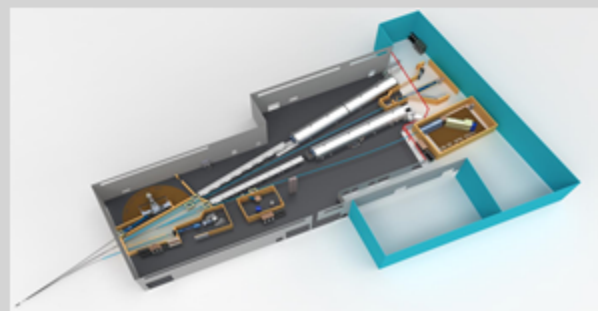
STS

Instrument selection has begun. In conceptual design phase



HFIR

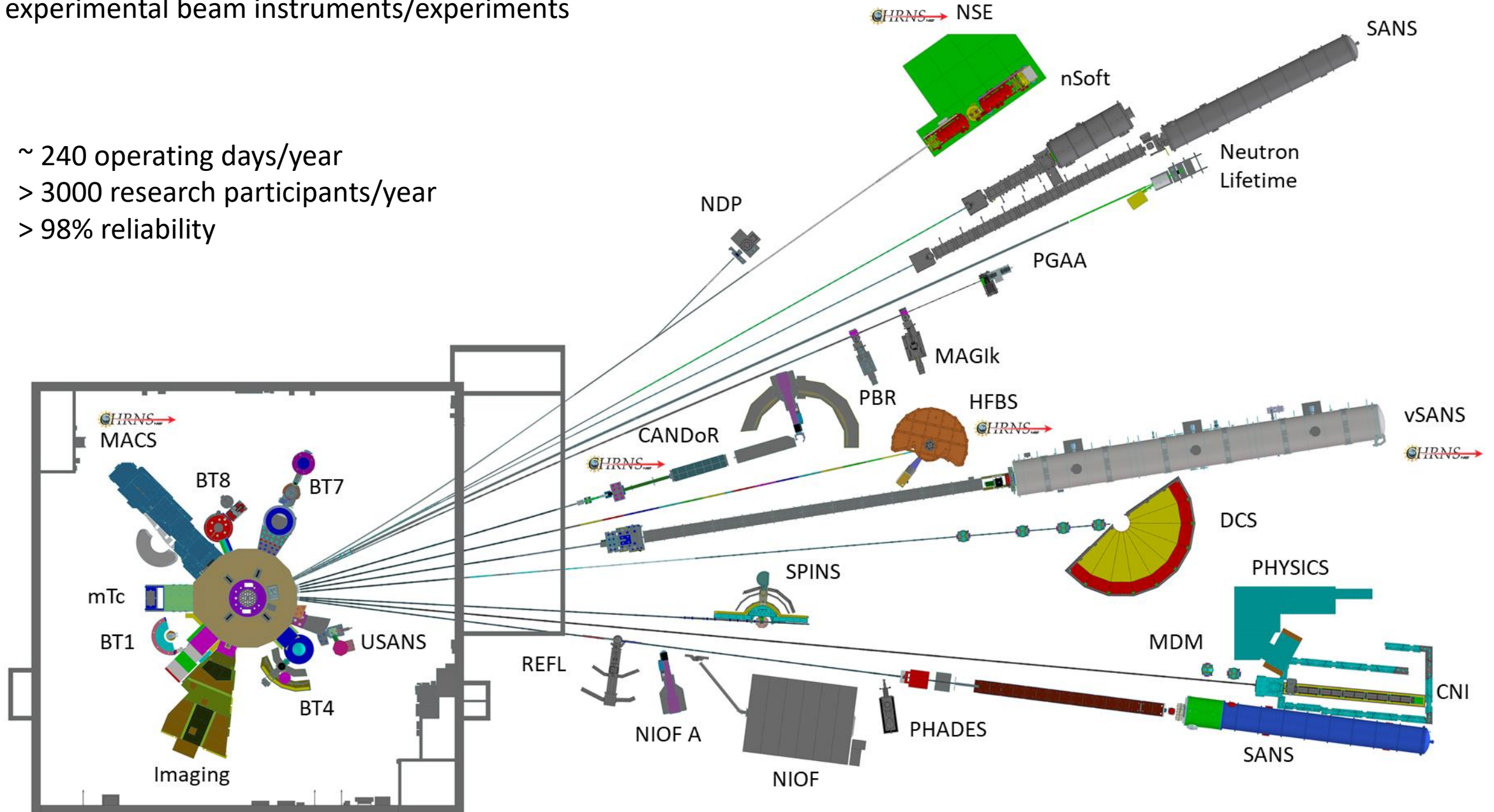
Cold guide hall expansion planned for 2024



NIST Overview

30 experimental beam instruments/experiments

~ 240 operating days/year
> 3000 research participants/year
> 98% reliability



INSTRUMENT OWNERSHIP & ACCESS

INSTRUMENT OWNERSHIP

Facility-owned

Partnership-owned (participating research team):
interagency partnerships (e.g. NSF/NIST CHRNS),
consortium-owned (e.g. nSoft, iPRIME/ExxonMobil)



INSTRUMENT ACCESS

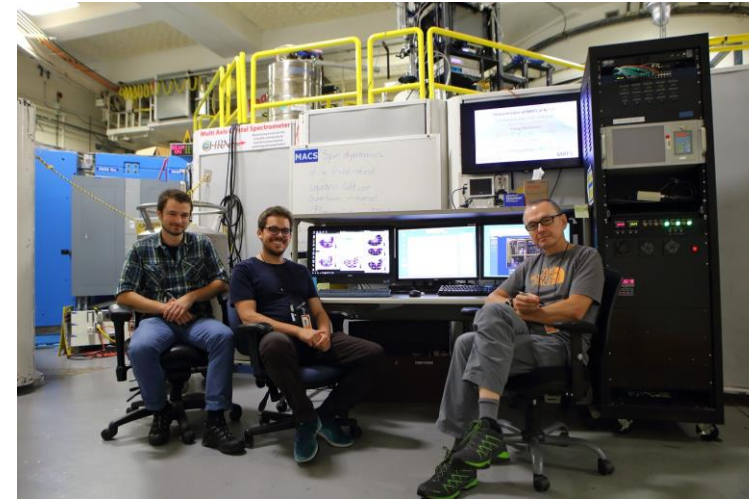
General user access (competitive proposal-based)

Collaborative access (merit based via instrument “owner”)

Consortium-based access

Partnership-based access

Proprietary access



**NIST
PARTNERSHIPS**



nSoft

ExxonMobil



U.S. DEPARTMENT OF
ENERGY

Energy Efficiency &
Renewable Energy

6 instruments

1+ instrument (SANS)

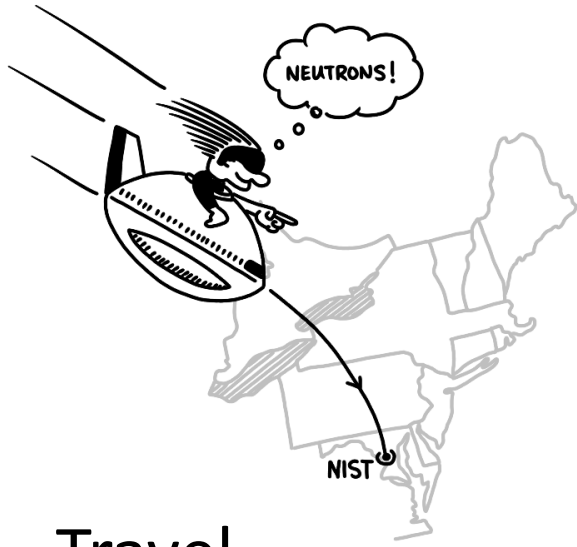
1 instrument (SANS)

1 instrument (Imaging)



WHAT COULD THIS LOOK LIKE FOR CANADA?

Neutrons Canada



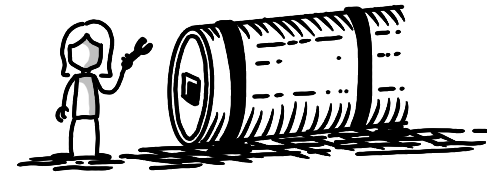
- Travel
- Staff at partner facilities
- Administration
- Instrument development
- Proposal system
- ⋮

Facility Partnerships

Shared operation of instruments and equipment
(many possible ways of doing this)



Shared development of instrument and upgrades
(many more ways of doing this)



Appropriate representation on advisory committees

Beam time allocation dependent on investment

NIST Upgrade Opportunities

