

# The HFIR Center for Neutron Scattering



***Gregory S. Smith***  
**Group Leader, HFIR CNS User Program**

**presentation to  
Neutron Facility Directors Meeting  
Argonne National Laboratory**

**January 14, 2004**

**OAK RIDGE NATIONAL LABORATORY  
U. S. DEPARTMENT OF ENERGY**

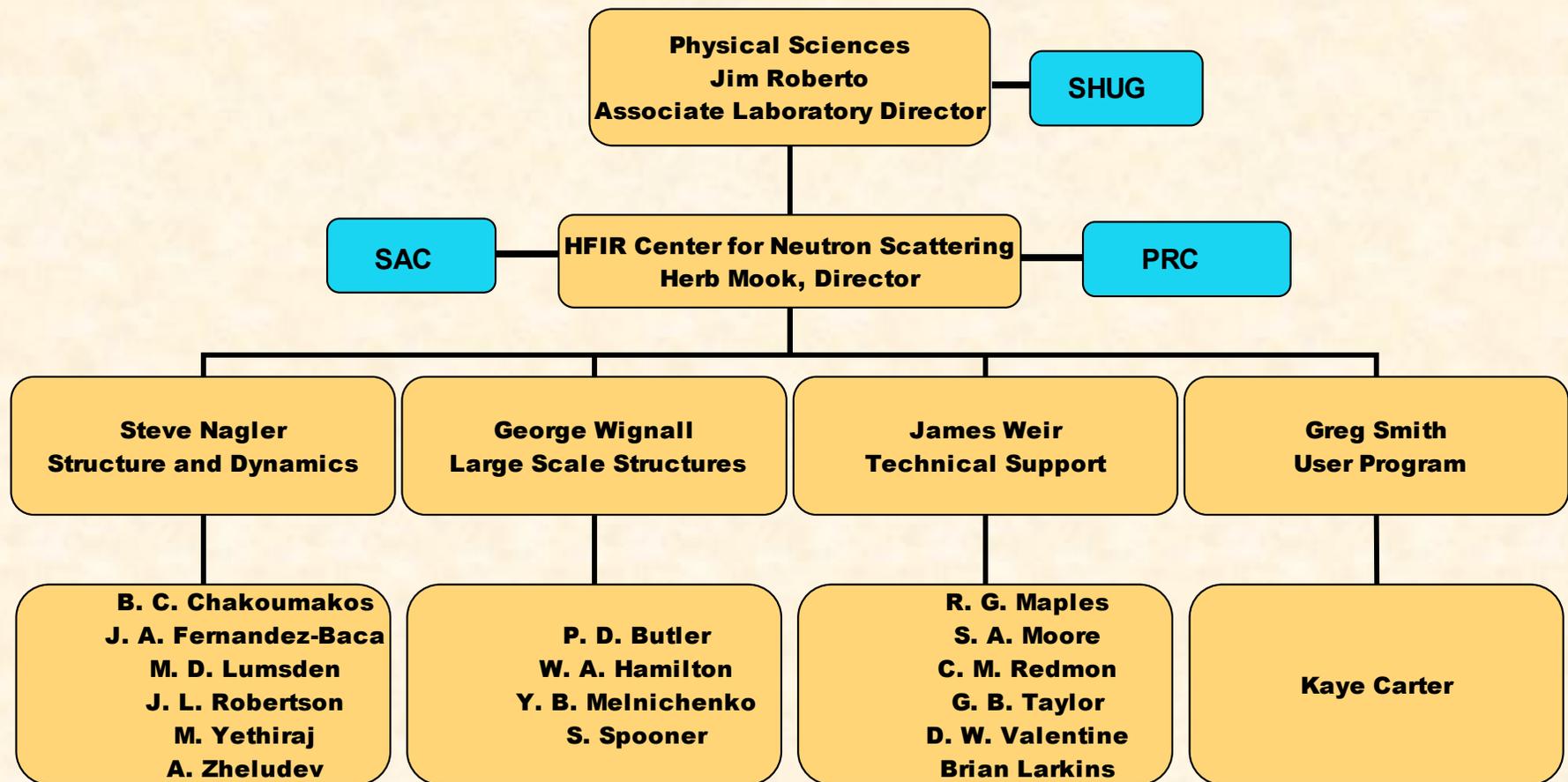


# Outline



- **Center for Neutron Scattering**
- **Neutron Scattering Facilities and Upgrades**
- **User Program**

# Organization



# Center for Neutron Scattering Additional Staff



- **Post-Docs**
  - W. Heller
  - G. W. Lynn
  - T. Masuda
  - M. Matsuura
  - F. Ye
  - S. I. Yun
- **Joint UT-ORNL**
  - P. Dai
- **AMES Laboratory**
  - V. O. Garlea
  - J. L. Zarestky, J.L.
- **BNL**
  - B. Winn
- **Students**
  - T. P. Enck
  - H. J. Kang

# Cold Instrument Guide Hall



Oct. 2002



April 2003



Dec. 2003



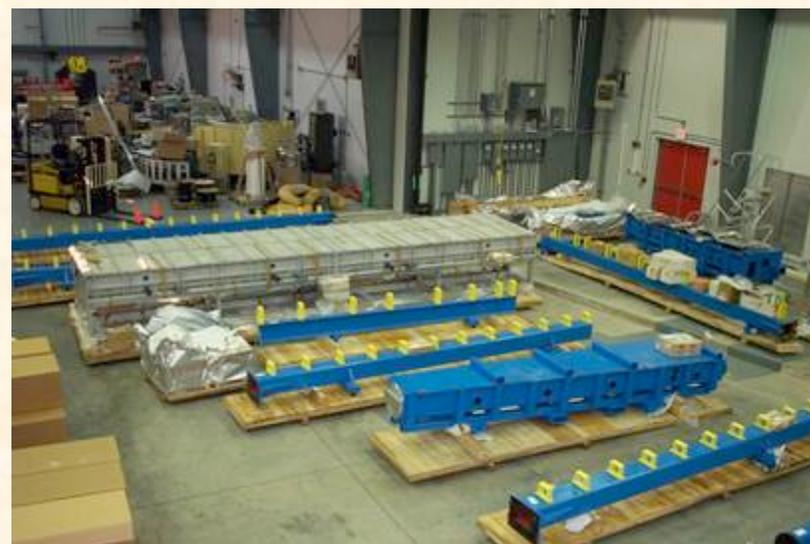
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# Cold Instrument Guide Hall SANS 1 & 2



30m SANS tank  
at manufacturer

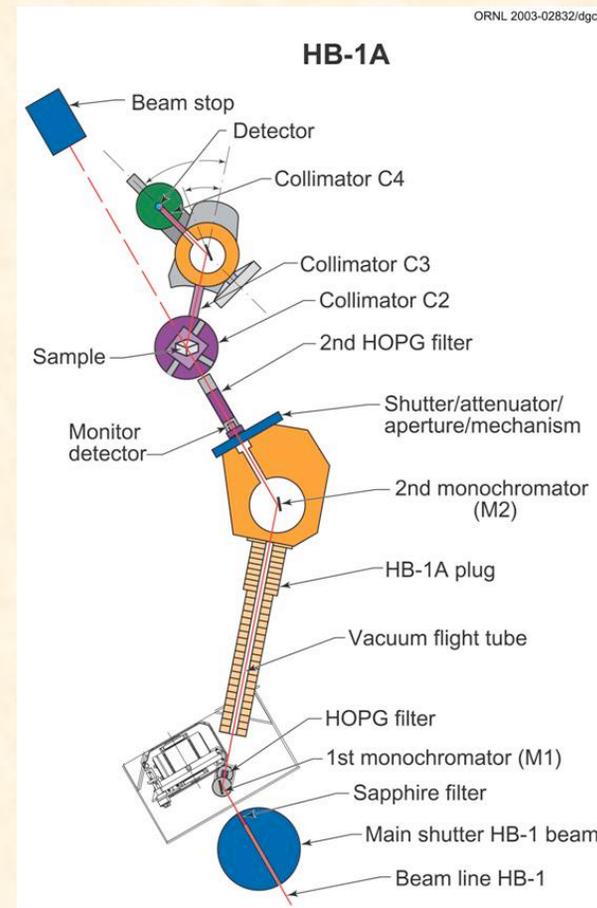


Cilas guides delivered

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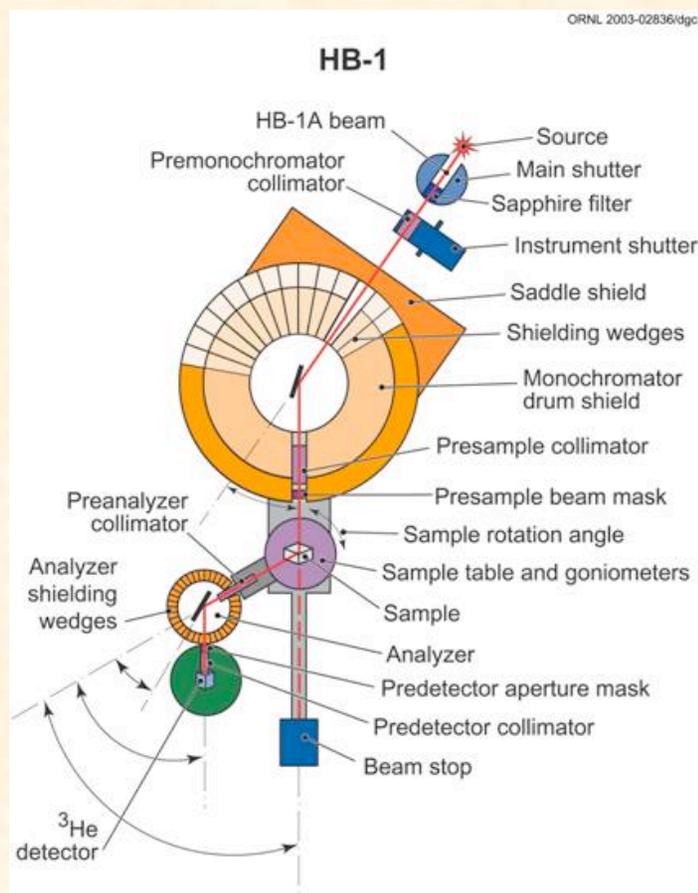
# HB-1A Fixed $E_0$ Triple Axis Spectrometer



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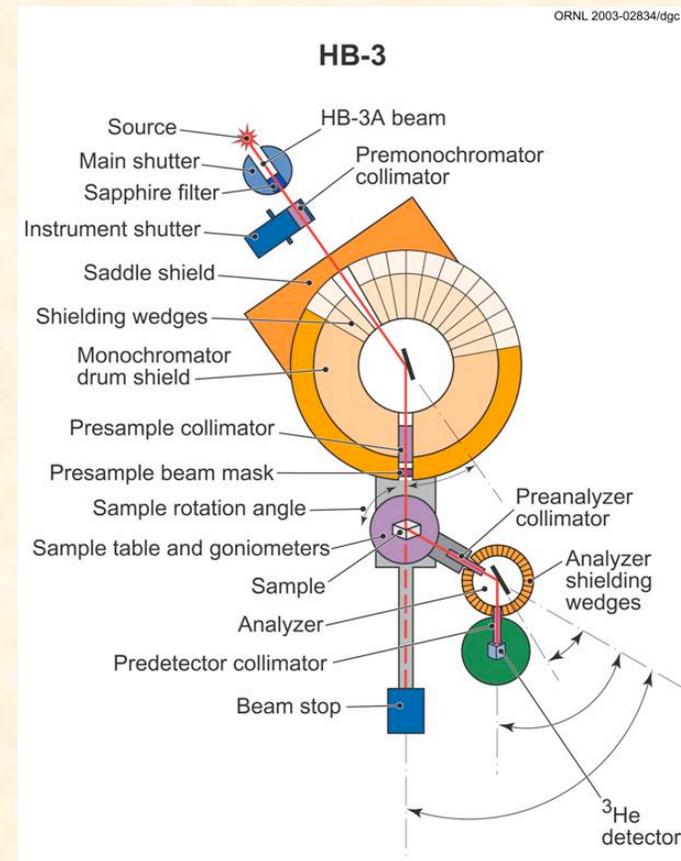
# HB-1 Polarized Neutron Triple Axis Spectrometer



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# Triple Axis Spectrometer



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# HB-2

# Instrument Installation



- HB-2 shielding in place
- HB-2 triple axis drum installed
- Residual stress instrument installed

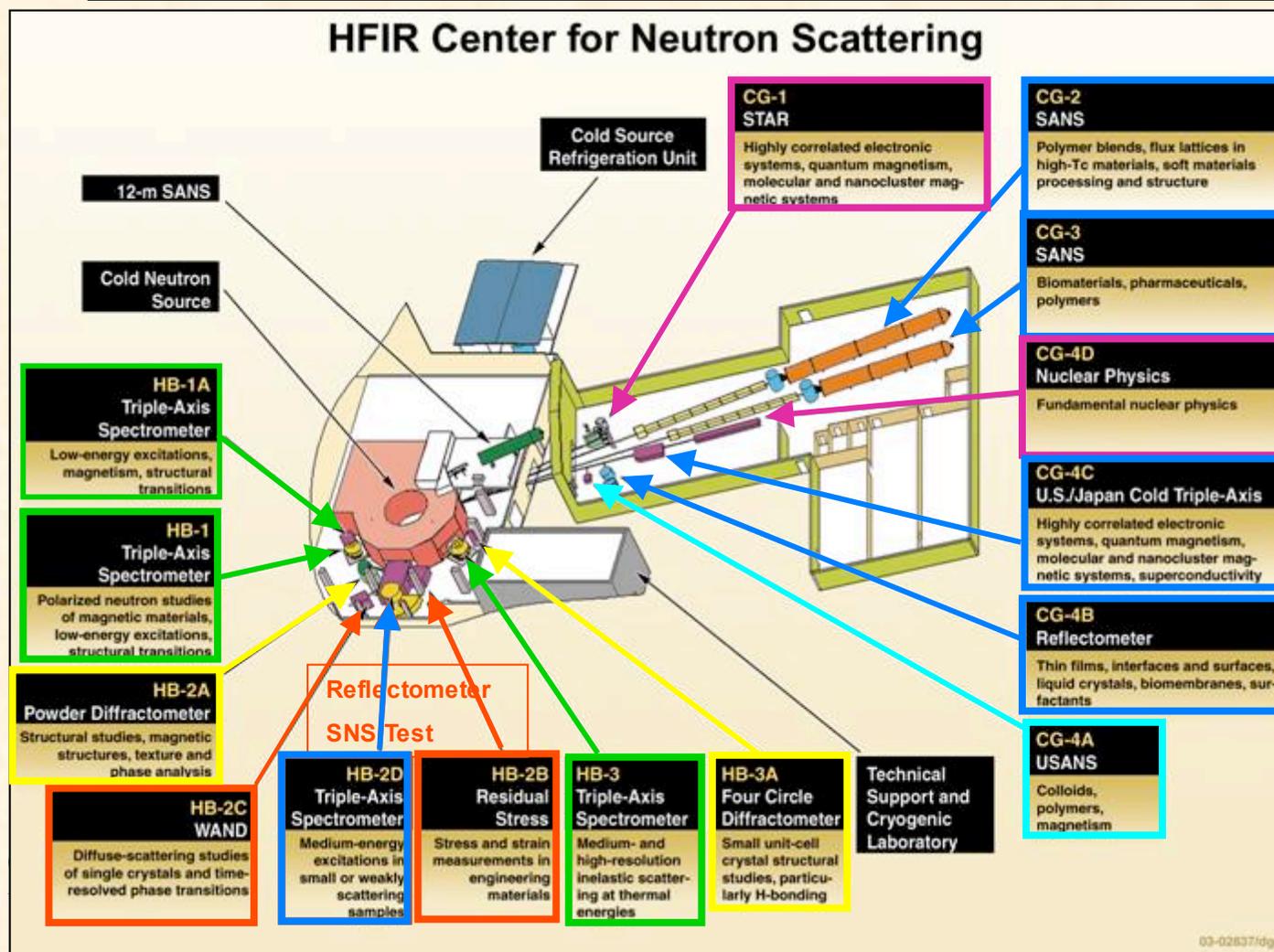
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# Instrument installation schedule



## HFIR Center for Neutron Scattering



2003 ■

2004 ■

2005 ■

2006 ■

2007 ■

2008 ■



03-02637/dgc

# Calls for Proposals



- Calls since formal program started
  - First formal call October 18, 2002: Due December 2, 2002
  - Issued July 2, 2003: Due August 18, 2003
- 3 triple axis instruments available for each round

# User Program



- **User program plan developed with SNS and shared with SHUG**
- **User program implemented for the first upgraded instruments in March 2003**

## Initial results of formal user program (3 instruments)

	Round I 3/03-9/03	Round II 10/03-3/04
Number of proposals	50	49
Approved	29	32
Unique users	51	N/A
User visits	96	N/A

# Formed First Proposal Review Committee (PRC)



- Inelastic scattering first of the PRC's
- Five members from external organizations
  - Costa Stassis, ISU
  - John Tranquada, BNL
  - Jeff Lynn, NIST
  - Dave Belanger, UC Santa Cruz
  - Jim Rhyne, LANL
- One internal non-voting CNS member
- Rank ordered proposals
- Recommended beamtime allocations
- Comments for resubmissions

# User Access



- **Goal: One stop shopping**
- **Varying lead times for assignments**
  - **US citizens: 1 day**
  - **Foreign nationals (~50% of CNS users)**
    - **Non-sensitive countries – 3 calendar weeks**
    - **Sensitive countries – 8 calendar weeks**
- **All users submitted for approval**
- **ORNL ORACLE database (NEP)**
- **SNS and CNS involved with rework of access procedures – data typed once**

# User Training

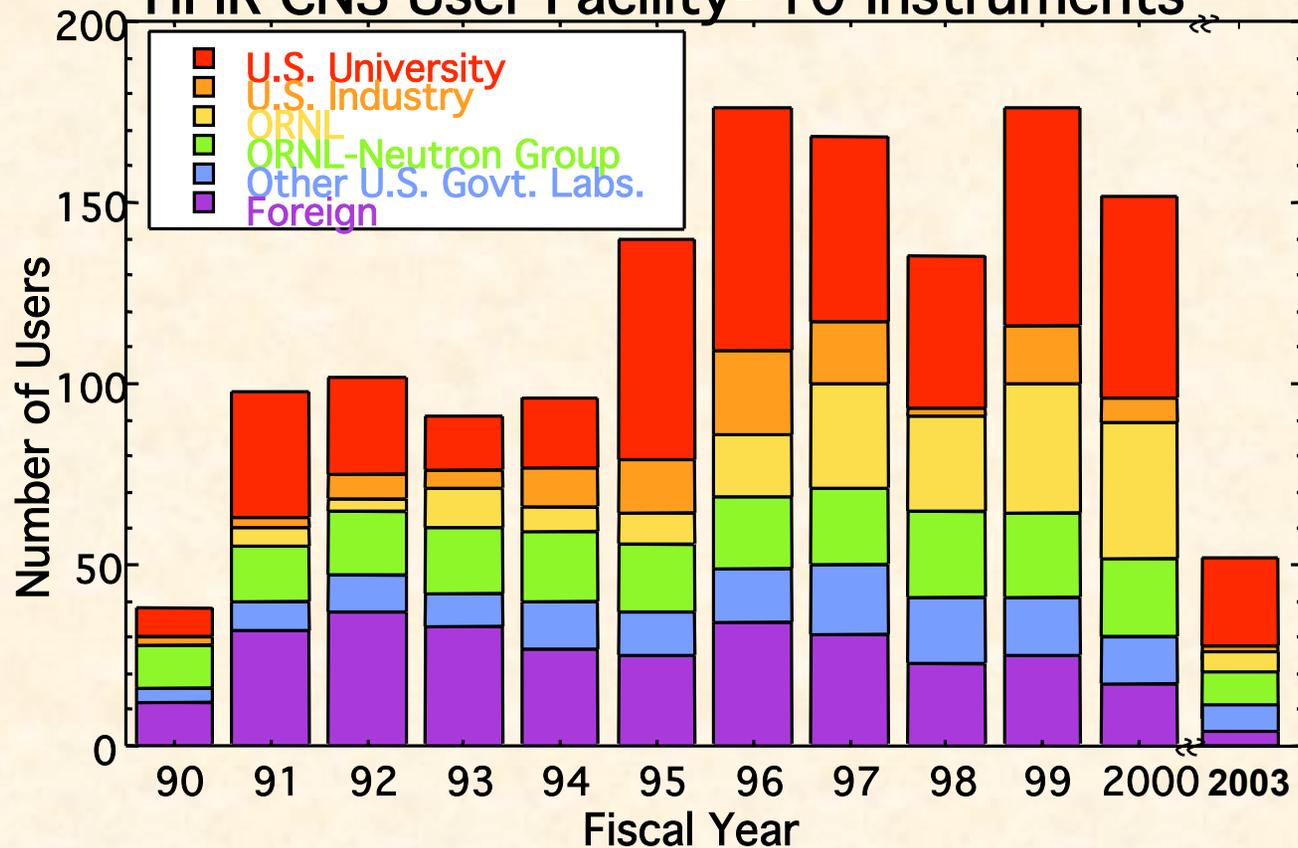


- **Material available on web in PDF format**
- **Radiation worker training**
  - Laboratory approved CNS specific
  - Written test administered on site (20 ques.)
  - Dosimetry issued on completion
- **General User Access Training**
  - Required for HFIR entrance
  - Written test administered on site (20 ques.)
  - Granted after OJT training with instrument scientist

# User Statistics



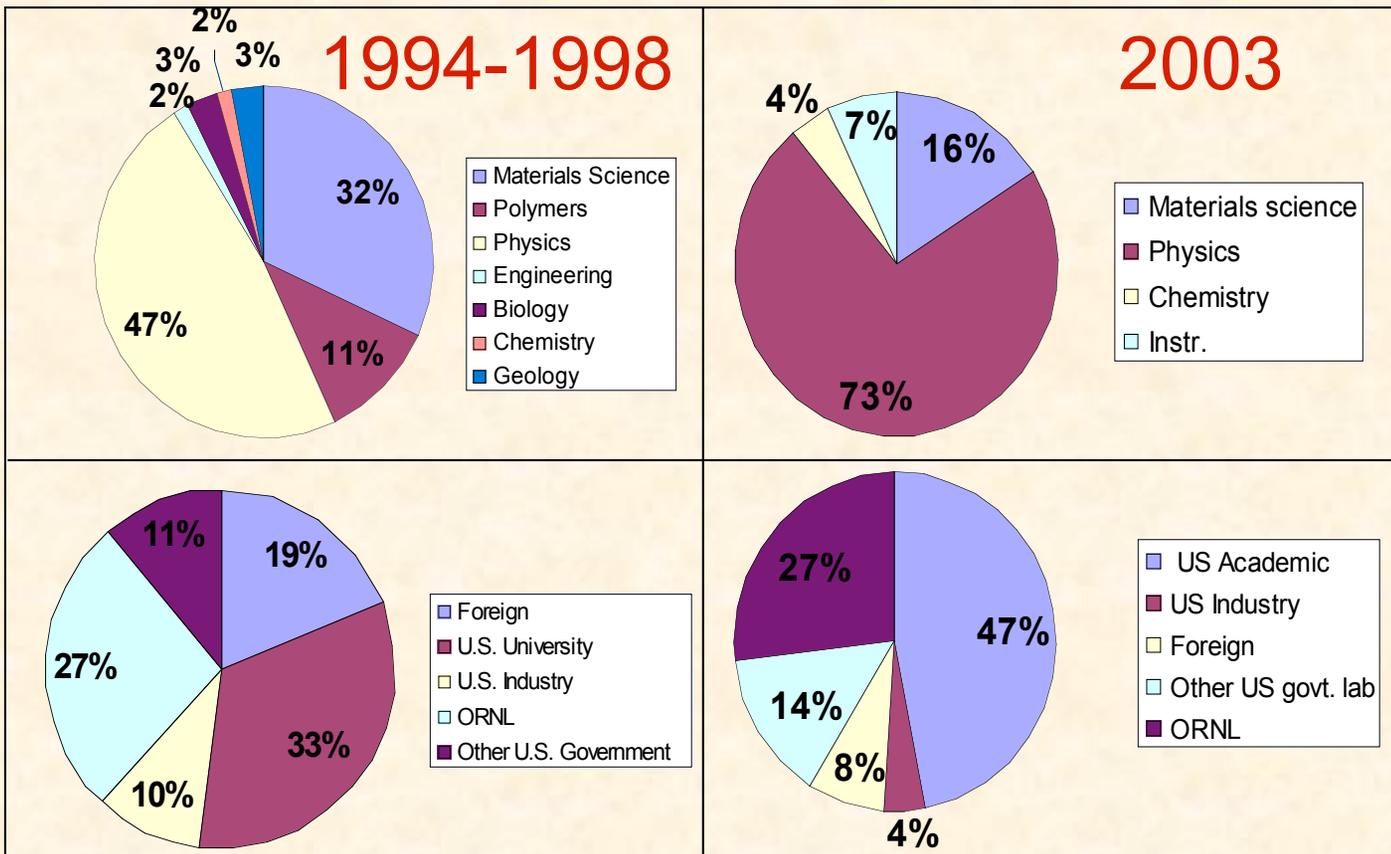
HFIR CNS User Facility- 10 Instruments



FY 2003

- 51 unique users
- 6 Month period
- 3 instruments

# User Demographics



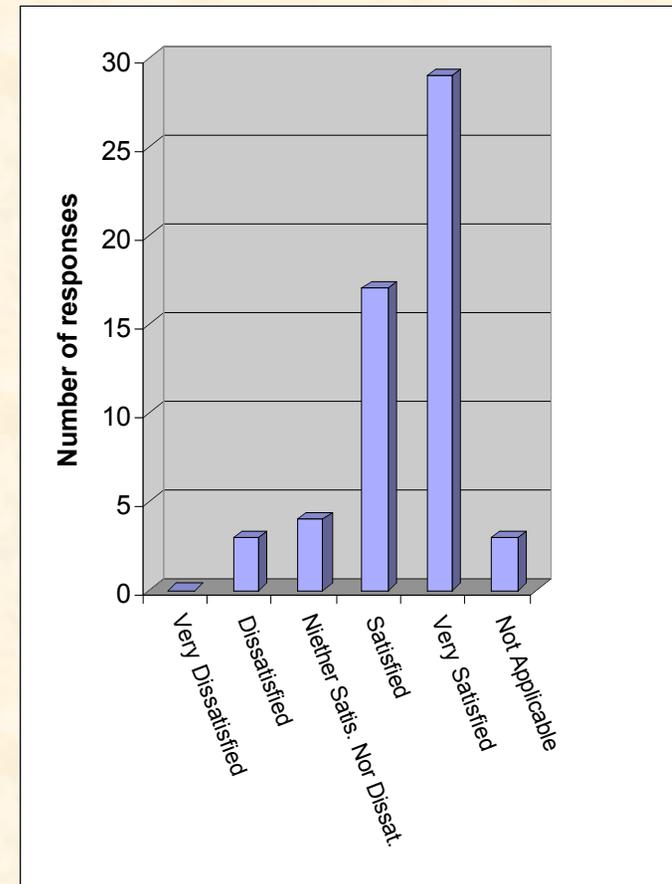
**•Weighted toward Physics**

**•Large increase in US academics**

# Facility Survey Results



- Returned at end of experiment
- HFIR CNS results for FY '03
- Plot for first 4 questions of the survey
  - Fraction of year facility operates
  - Schedule or service
  - Beam performance
  - Staff support
- 27% return rate
- Some comments:
  - Mostly favorable
  - Want better schedule
  - Better sample environment support



# SHUG Survey: Selected Comments



- Generally impressed with improved instrumentation
- Very favorable toward new data acquisition software
- Staff support was ranked highest
- **Auxiliary equipment is not reliable - more staffing, more reliable equipment - Dewars, SC-Magnets. Remote control of SC-magnets.**
- **Technical support during the weekends - not satisfactory**
- Access to the facility - local map, and more information to new users on gates hours etc.
- Web-based system for retrieving data

# SHUG Discussions



- **Experimental Report - to publish or not to publish**
- **Policy for fast access to high throughput instruments**