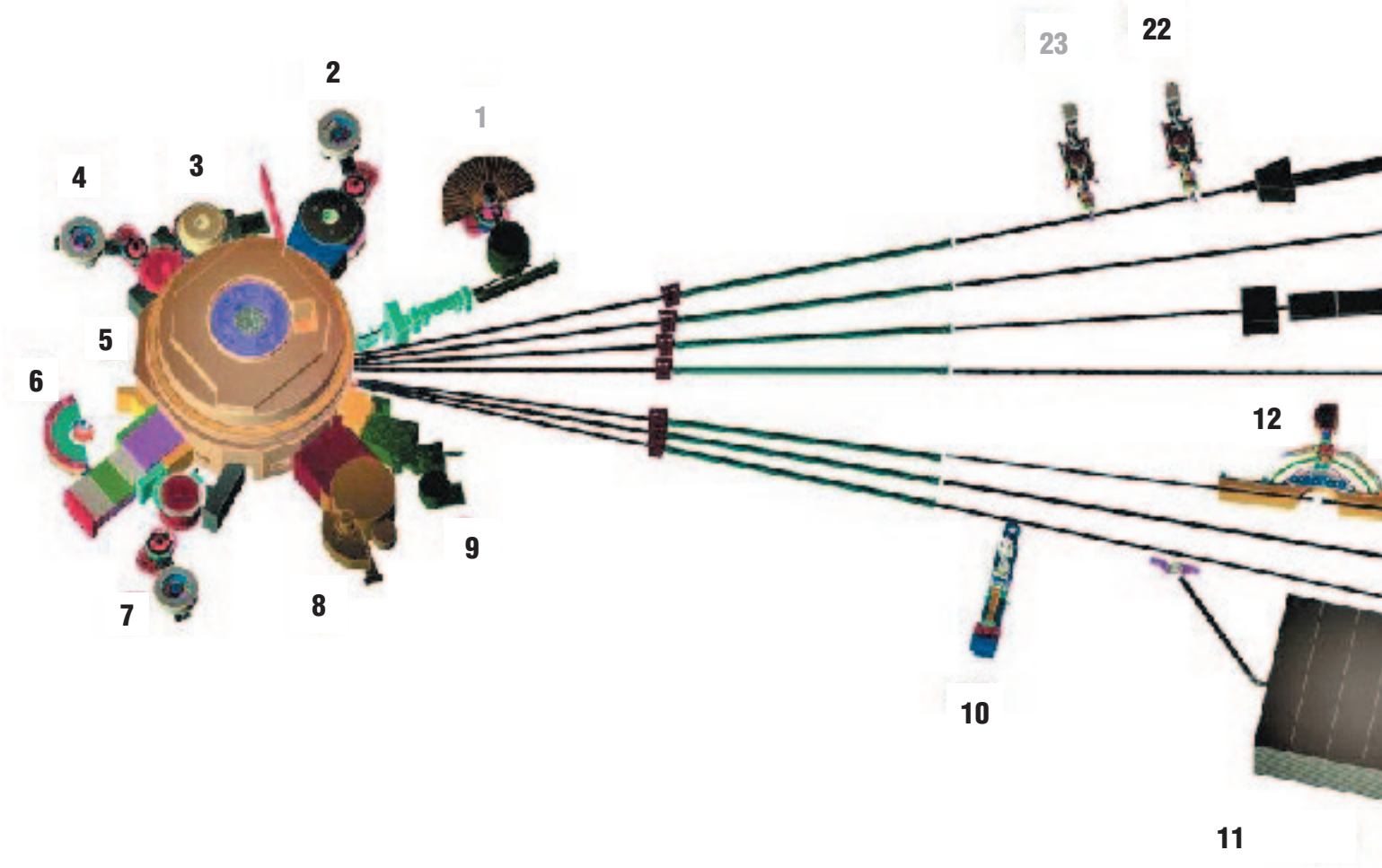
NIST CENTER FOR NEUTRON RESEARCH LAYOUT



1 **A Cold Neutron Depth Profiling** instrument (not shown) for quantitative profiling of subsurface impurities currently at this site will be moved to another position. Shown is a proposed **Triple Axis Cold Neutron Crystal Spectrometer** with double focusing monochromator and multiple crystal analyzer/detectors that can be flexibly configured for several energies simultaneously or for high throughput at one energy.

2 **BT-7 Triple Axis Spectrometer** with fixed incident energy for measurements of excitations and structure.

3 **BT-8 Residual Stress Diffractometer** optimized for depth profiling of residual stress in large components.

4 **BT-9 Triple Axis Crystal Spectrometer** for measurements of excitations and structure.

5 **Thermal Column** A very well-thermalized beam of neutrons used for radiography, tomography, dosimetry and other experiments.

6 **BT-1 Powder Diffractometer** Powder diffractometer with 32 detectors; incident wavelengths of 0.208 nm , 0.154 nm, and 0.159 nm, with highest resolution of $\delta d/d = 8 \times 10^{-4}$.

7 **BT-2 Triple Axis Crystal Spectrometer** with polarized beam capability for measurement of magnetic dynamics and structure.

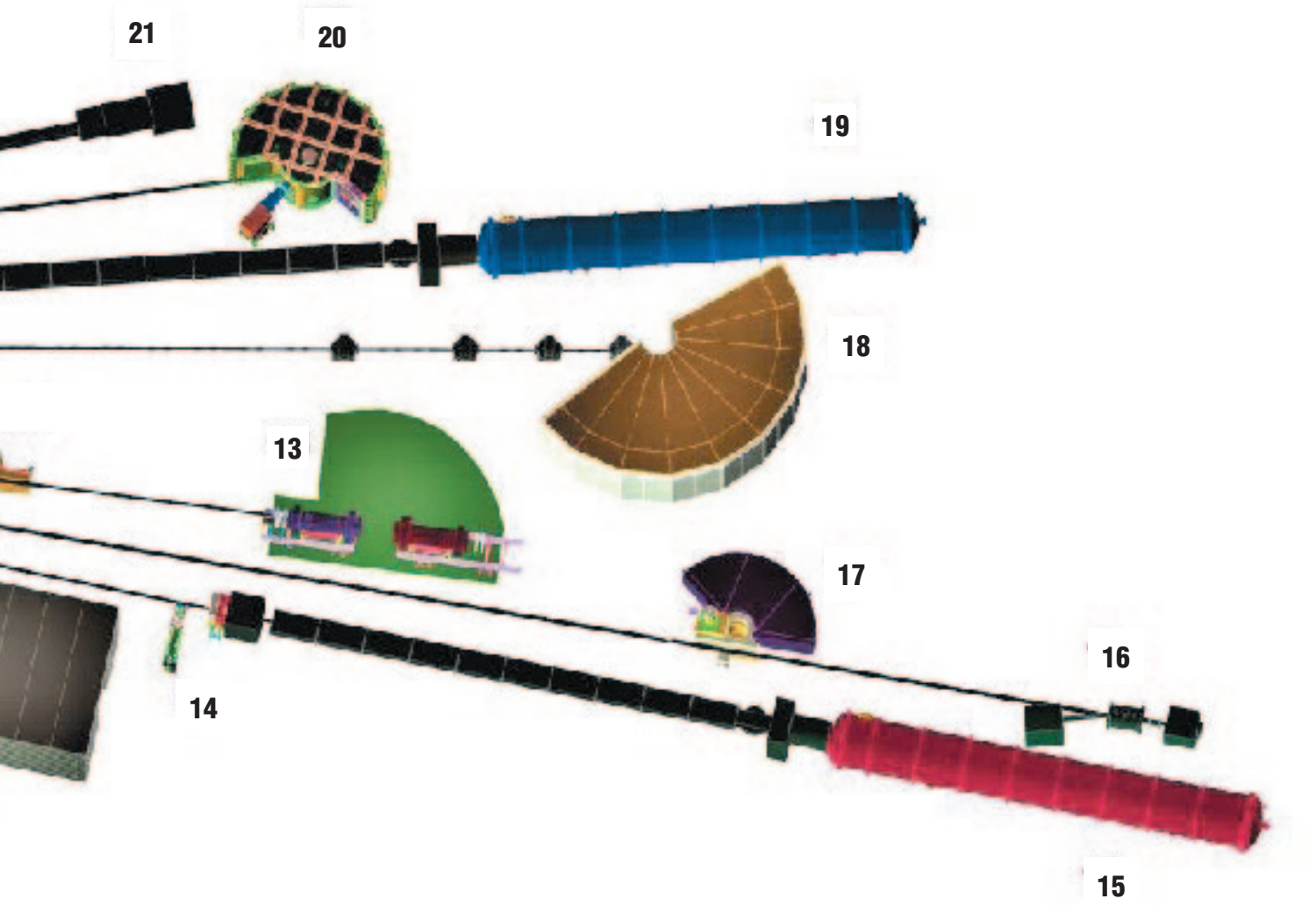
8 **BT-4 Filter Analyzer Spectrometer** with cooled Be/Graphite filter analyzer for chemical spectroscopy.

9 **BT-5 Perfect Crystal Diffractometer SANS** small angle neutron scattering instrument for microstructure on the 10^4 nm length scale sponsored by the National Science Foundation and NIST, part of the Center for High Resolution Neutron Scattering (CHRNS).

10 **NG-7 Horizontal Sample Reflectometer** allows reflectivity measurements of free surfaces, liquid vapor interfaces, as well as polymer coatings.

11 **Neutron Interferometry and Optics Station** with perfect silicon interferometer; vibration isolation system provides exceptional phase stability and fringe visibility.

12 **Spin Polarized Triple Axis Spectrometer (SPINS)** using cold neutrons with position sensitive detector capability for high resolution studies, part of CHRNS.



13 Spin Echo Spectrometer offering neV energy resolution, based upon Jülich design, sponsored by NIST, Jülich, and ExxonMobil.

14 Prompt Gamma Activation Analysis cold neutron fluxes allow detection limit for H of 1 μg to 10 μg. Focused beams are available for profiling.

15 NG-7 30 m SANS for microstructure measurements sponsored by NIST, ExxonMobil, and the University of Minnesota.

16 Neutron Physics Station a cold neutron beam 150 mm x 60 mm, available for fundamental neutron physics experiments.

17 Fermi Chopper TOF Spectrometer a hybrid time-of-flight spectrometer for inelastic scattering with incident wavelengths between 0.23 nm and 0.61 nm chosen by focusing pyrolytic graphite crystals. A simple Fermi chopper pulses the beam.

18 Disk Chopper TOF Spectrometer versatile time-of-flight spectrometer, with beam pulsing and monochromatization effected by 7 disk choppers. Used for studies of dynamics in condensed matter, including macromolecular systems.

19 NG-3 30 m SANS for microstructure measurements sponsored by the National Science Foundation and NIST; part of CHRNS.

20 Backscattering Spectrometer: high intensity inelastic scattering instrument with energy resolution < 1 μeV, for studies of motion in molecular and biological systems.

21 8 m SANS for polymer characterization, sponsored by NIST Polymers Division.

22 Vertical Sample Reflectometers: instruments for measuring reflectivities down to 10^{-8} to determine subsurface structure, with polarization analysis capability. No. 23 is a proposed instrument optimized for biological measurements.