

Center for Integrated Nanotechnologies

Sandia National Laboratories • Los Alamos National Laboratory



- **Jump-start program**
- **User proposal process**
- **CINT web site**

“One scientific community focused on nanoscience integration”



Workshop attendees represent an international scientific community



80 - university
20 - industry
85 - laboratories

16 countries overall



CINT Outreach: Building a science community

Jump-start user program

CINT web site resources

Future CINT capabilities

CINT science workshops

Partnerships

Educational component (universities)

Nanotechnology development (private sector)

Nanoscience integration challenges

<http://CINT.sandia.gov>

<http://CINT.lanl.gov>



Call for User Proposals

Science Focus:

- (1) The integration of top-down fabrication with bottom-up assembly to create new classes of functional materials;
- (2) The control of optical and electronic energy transfer and charge transport coupled across multiple length scales;
- (3) The coupling of mechanical forces across nano, micro and larger scales, including the control of fluidic transport;
- (4) The integration of biological and synthetic materials and control of the interface between biological and non-biological components.



Developing a User Proposal

- 1. Formulate nanoscience integration idea**
- 2. Determine capability & expertise needs**
- 3. Identify CINT points of contact (CINT web site)**
- 4. Discuss idea with CINT scientists**
- 5. Determine appropriate User Access Mode**
- 6. Write short user proposal
(independent or collaborative)**
- 7. Submit via CINT web site**

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CINT Jump-Start Capabilities

Synthesis

- **Thin Film and Epitaxial Growth**
- **Nano/Micro Fabrication**
- **Nanomaterials Synthesis**
- **Biomaterial Synthesis**

Characterization

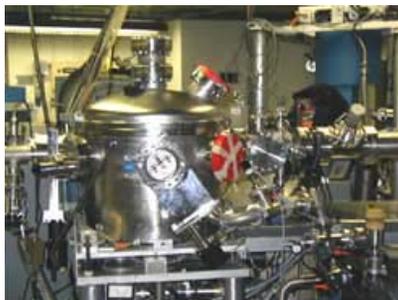
- **Scanning Probe Microscopy**
- **Optical Microscopy/Spectroscopy**
- **Electron Microscopy**
- **Nuclear Magnetic Resonance**
- **Mechanical Properties**
- **Transport**

Theory and Simulation



CINT Jump-Start Leveraged Facilities

Ion Beam Materials Laboratory



Nuclear Magnetic Resonance Facility



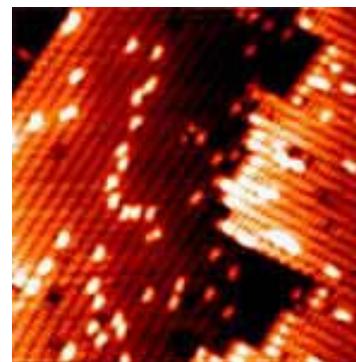
MicroElectroMechanical Systems



Electron Microscopy Laboratory



Scanning Probe Microscopy Facility



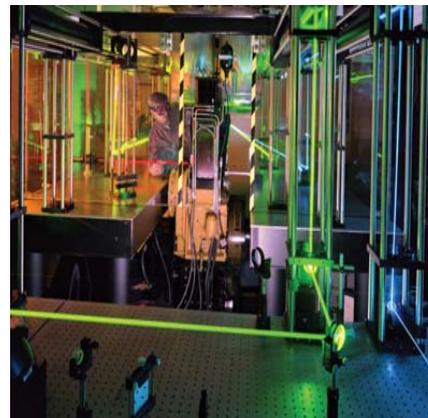


National User Facilities

Los Alamos Neutron Science Center



Combustion Research Facility



National High Magnetic Field Lab





CINT General User Access Modes

- Users who request access to specific tools that are part of the CINT user program.
- Users who would like to access sets of tools and technical expertise that are part of CINT's scientific themes.
- Users who want to engage in a long-term research collaboration with laboratory scientists at CINT to expand existing CINT scientific themes or develop entirely new directions.



User Proposal Review Process

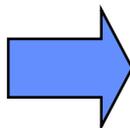
**Capability scheduling
(CINT management)**



**External science review
(Chair: Laura Greene)**



**Proposal Submitted
via web (User)**



**Feasibility screening
(CINT scientists)**



User Proposal Timeline

June 1, 2003

Call for User Proposals

August 1, 2003

Submission Deadline***

August/September

Review process

September 15, 2003

Notification

October 1, 2003

Scheduling begins

***** Late proposals will be held for the next review cycle (Winter 2004).**



Working at CINT

- Travel:** Not paid by CINT; some support possible via other Lab programs.
- Housing:** Local options on web site; University dorms (summer only)
- Training:** As required
- Badges:** Initiated when proposal is accepted. Additional lead time required for Foreign Nationals.



CINT Fellowships: Students & Post-Docs

Purpose: To encourage student/post-doc participation in the CINT user program.

Eligibility: (1) Full-time student or post-doc
(2) Participant in a CINT user proposal.

Application: (1) On web site
(2) Identify activities in proposed research.
(3) Letter of support from home institution.

Fellowship Amounts: Request \$500 to \$1500.

Evaluation: (1) User proposal must be accepted
(2) Applicants role in CINT User research
(3) Letter(s) of support.



CINT Web Site Resources

Funding opportunities database ([available today](#))

Information services resource

Calendar of nanoscience events

Educational opportunities

Nanoscience integration workshops

<http://CINT.sandia.gov>

<http://CINT.lanl.gov>