Overview of Argonne’s Center for Nanoscale Materials: A U.S. Dept. of Energy Nanoscale Science Research Center

Katie Carrado Gregar
Manager, User & Outreach Programs

Synthesis, fabrication, characterization and theory of materials at the nanoscale

http://nano.anl.gov
Dept. of Energy Nanoscale Science Research Centers (NSRCs)
CNM Sponsors and Users

• The CNM is funded by the U.S. Dept. of Energy, Office of Science, Office of Basic Energy Sciences

• As a division, DOE funds the research and support activities of 70 staff members

• As a user facility, DOE funds the infrastructure that is available to more than 450 researchers per year (the user community)

• The user community is made up of scientists within Argonne and also external to Argonne and the DOE system
Six research groups at CNM

Electronic and Magnetic Materials and Devices
Charge- and spin-based materials for energy and information transport

NanoBio Interfaces
Bio-inspired materials and processes for energy transduction

Nanofabrication and Devices
Nanoscale materials and structures for new device functionality

Nanophotonics
Understand and control optical energy pathways

Theory and Modeling
Theoretical explorations of nanoscale phenomena

X-ray Microscopy
Create images of the nanoworld with hard x-rays
Dual role of CNM research staff

• CNM research staff perform their own ‘core’ research which is under the auspices of DOE BES for mission, review, and accountability: CORE SCIENCE

• CNM research staff also perform service to the user community either by collaboration or by instruction: USER SCIENCE

• The CNM gives equal importance to both roles
Metrics for DOE Reviews: Scientific Impact

CNM Publications

*Jan-Sept 2011

* Staff
* User
CNM’s User Community

1555 users from 40 states & Puerto Rico

100 international users from 18 countries (FY2007-2011)
CNM’s User Community

Number of Users

- Other
- Industrial
- International
- Argonne
- US Academia

Industrial Users
- ADT, Inc.
- Creatv Microtech
- Diamond Light Sources, Ltd.
- Euclid Techlabs
- IBM
- Hewlett-Packard
- Industrial Research Limited
- Lake Shore Cryotronics
- McCrone Associates
- Nalco
- Packer Engineering
- Seagate

FY07 FY08 FY09 FY10 FY11
CNM User Access

- Open submittal and review processes
  - public information on website
  - 3 calls per year
  - Multi-facility proposal portal
  - projects last for up to one year
  - Access is free for non-proprietary work

- Flexible access modes
  - Proprietary & non-proprietary
  - Collaborative & independent
  - General & partner

- Reviews & allocations based on feasibility & scientific merit
  - internal technical feasibility
  - external, 100+ member Proposal Evaluation Board

- Notifications occur within 6-8 weeks
- CNM Facility is open 40 hours/week

http://nano.anl.gov

423 Institutions with Argonne Master User Agreements in place (as of 9/13/11)
CNM User Focus: Satisfaction & Feedback

- End-of-experiment form link is sent at the completion of every project
- Annual satisfaction surveys are distributed (approx. 15% response rate)
- Informal feedback from user to their CNM scientific contact
- Direct contact with CNM user office
- Users Executive Committee acts as a liaison between users and CNM
- Comments are distributed to staff/groups/mgmt from the user office

http://nano.anl.gov/users/user_survey.html
**CNM Sponsor & User Focus: Communication**

**Staff Core Science:**
- Scientific Advisory Committee reviews
- Monthly NSRC conference calls with DOE
- Annual DOE NSRC Director Meetings
- Triennial DOE NSRC Contractor’s Meetings

**User Science:**
- Annual Users Meetings
- Triennial newsletters
- Other technical workshops
- User Executive Committee meetings

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**May 2-5, 2011**

* Plenary Session
  - Views from DOE, Argonne & Facility Status Updates
  - Keynote Presentations
  - User Science Highlights
* Vendor Expo
* Poster Session
* Short Courses
* Thematic & Facility Workshops