

The **FUTURE** of America is the
RESEARCH of **TODAY**



NATIONAL
USER
FACILITY
ORGANIZATION

Introducing the National User Facility Organization

Susan White-DePace
NUFO Executive Administrator

NSF Large Facilities Workshop
May 24-26, 2016
Washington, DC

Overview

- Introduction to NUFO
- What is NUFO's role?
- What does NUFO do?
- How is NUFO changing?
- What's in it for you?

Introduction to NUFO

- 1997 first formal meeting of user administrators to share best practices
- 2003 user representatives were included in meeting
- 2006 formally became NUFO
- Currently has 47 member facilities (materials science, astrophysics, computing, high-energy, nuclear energy, neutron, etc.)
- Two-branch organization: user administrators and user representatives
- Primary mission is to provide a unified message at a national level on issues for science done at federally-funded user facilities
- Current NSF-funded facilities are: NSCL, NOAO, NRAO, Maglab, & CHESSE
 - Love to have broader NSF membership and participation

NUFO's Unique Role

- Only professional association dedicated to the user science community
- Provides a forum for multiple communities of practice
- Only unified voice for the user science community in Washington, DC
- **BUT: NUFO is not a lobbying organization**

NUFO Activities

- Annual Membership Meetings
- Science Expositions on Capital Hill
- Congressional Testimony
- Expert input to federal agencies (e.g., DOE Order on Foreign Visits, Immigration)
- Public outreach (e.g. Science & Engineering Expo)
- Share Benchmarking

NUFO on Capital Hill

Providing a unified message at the national level...

- Congress invites NUFO to hold yearly Exhibitions on Capital Hill about User Facility science



Congress of the United States
Washington, DC 20515

July 15, 2010

Dr. Rene Bellwood
Chair, National User Facility Organization
Warner Basin University
Dennis, ME 04830

Dear Dr. Bellwood:

We believe it is critically important that our fellow Members of Congress understand the scope and breadth of research that is being performed at the national laboratories. As the organization that represents all users of national laboratory facilities, we believe that the National User Facility Organization is uniquely capable of demonstrating to Congress how Department of Energy funding is supporting economic competitiveness, scientific research and education, and pushing the boundaries of our fundamental knowledge.

We understand that the National User Facility Organization is requesting an exhibition to educate Members and staff about the research being done by the users of the national laboratories and how their work benefits the United States. We and our congressional colleagues would find such an event very informative as we consider business regarding resources for the facilities and the future of our nation. Thank you for planning and undertaking this initiative.

Sincerely,

Rick
RICK HOLY
Member of Congress

Judy Biggert
JUDY BIGGERT
Member of Congress

Bill Foster
BILL FOSTER
Member of Congress

Vernon Ehlers
VERNON EHLERS
Member of Congress

Congress of the United States
Washington, DC 20515

December 14, 2011

Dr. Anish Lantieri
Chair, National User Facility Organization
University of Chicago
9774 South Ellis Avenue
Chicago, Illinois 60637

Dear Dr. Lantieri:

The national laboratories around the country continue to perform work critical to our nation's quest for new energy technologies, technological advances and innovation. Such work helps to fuel our ability to compete with other countries in the global economy. As such, we believe it important that our colleagues in Congress gain an understanding of what kinds of research and development are undertaken at them. The National User Facility Organization (NUFO), which represents the users who conduct research at the U.S. national scientific user facilities, and which facilitates communication among users, user organizations, facility administrators, and other stakeholders, is ideally suited to convey their importance.

We would therefore welcome the opportunity to host NUFO for an exhibition on Capital Hill which would educate Members and staff about the research being done by the users of the national laboratories and how their work benefits our nation. Such information would be useful in assisting us in making informed decisions regarding resources for the labs, particularly in a resource-constrained environment. Thank you for planning and undertaking this initiative.

Sincerely,

Randy Hultgren
RANDY HULTGREN
Member of Congress

Randy Hultgren
RANDY HULTGREN
Member of Congress

NUFO Testifies to Congress

Providing a unified message at the national level...

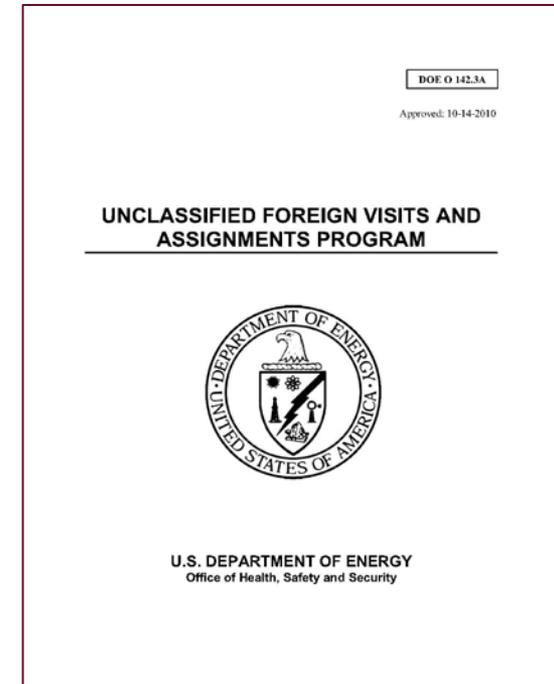
- **As a direct result of the 2012 User Science Exhibition, NUFO was invited to testify to Congress about User Facility science**
- The U.S House of Representatives Science Space & Technology Committee, Subcommittee on Energy & Environment hearing on “Utilizing the Tools of Science to Drive Innovation through Fundamental Research” was held on June 21, 2012, discussing:
 - The role that the Department of Energy’s (DOE) national scientific user facilities play in enabling basic research that drives innovation and economic growth.
 - Challenges and opportunities associated with user facility planning and management.
- Dr. Tony Lanzirotti (U. of Chicago) testified as Chair of NUFO. Also on the panel were
 - Dr. Stephen Wasserman from Eli Lilly
 - Dr. Persis Drell (director of SLAC),
 - Dr. Suzy Tichenor (ORNL), and
 - Dr. Ernest Hall (GE Global).



NUFO Support the DOE

Providing a unified message at the national level...

- NUFO involvement led to modification of DOE Order 142.3: Foreign Visits and Assignments – facilitating access for non-US citizen users
 - Enhances accountability within the security function
 - Removed requirements that did not advance national interest or laboratory security
 - Improved efficiency in administering processing
 - Minimized administrative barriers to scientific research

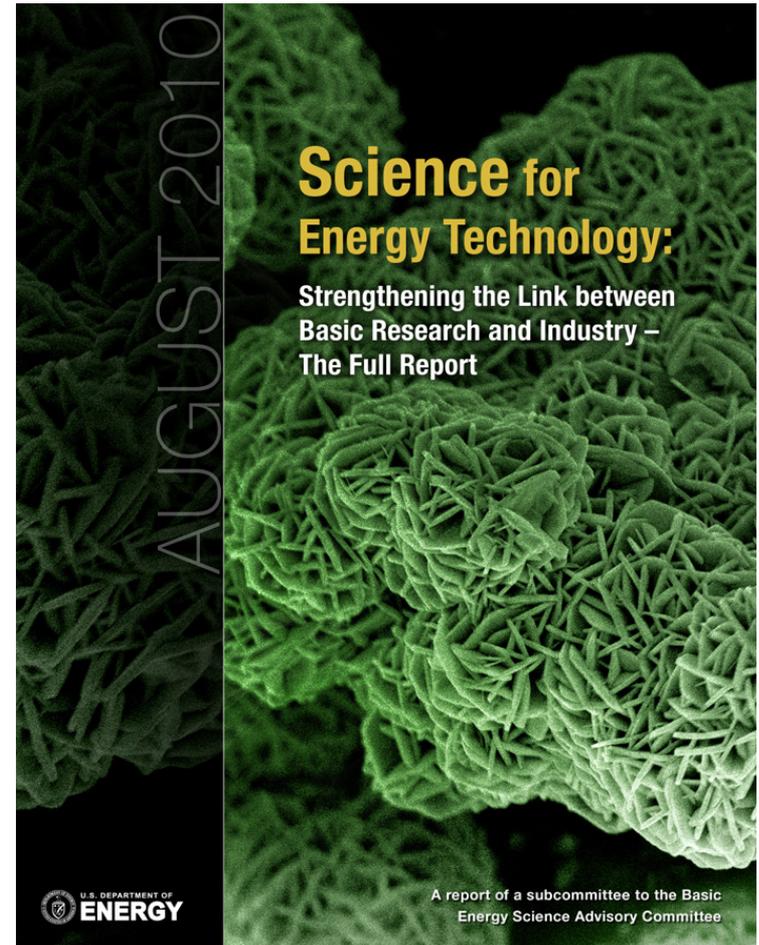


NUFO Supports Industry

Providing a unified message on industrial user access....

NUFO advances and promotes industry access to User Facilities

- NUFO 2009 workshop focused on industrial use of national user facilities
- NUFO Report led to a BESAC study
- **BESAC report recommended changes that directly tracked NUFO recommendations**
- This has the direct potential to increase “industrial friendliness” of the facilities



Enhancing Immigration Procedures for International Users

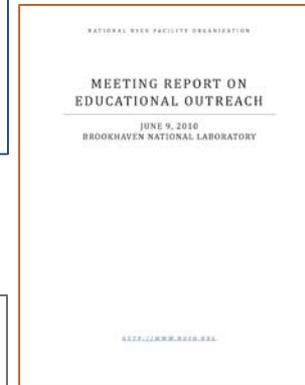
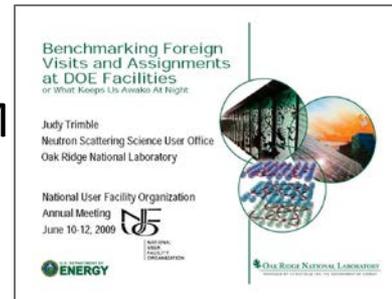
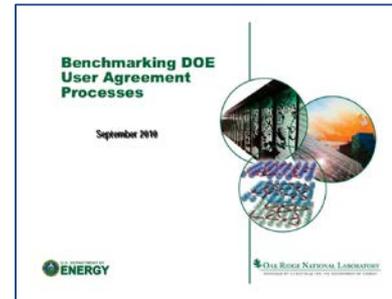
Supporting a unified message on international collaborations...

- Discussions with the Democratic Counsel on the Judiciary Committee and private law firms
- NUFO conducted two surveys on the immigration experiences of international users
- Based on the survey results, NUFO sent formal communications to Dept. of State, Dept. of Homeland Security, and Bureau of Immigration and Customs Enforcement, seeking to improve access to U.S. user facilities to better meet the needs of international scientists.

NUFO Benchmarking

Communities support communities

- NUFO conducts benchmarking studies to enable facilities to adopt best practices
 - DOE User Agreements
 - Calls for Proposals
 - Shipping Policies and Procedures
 - Multilingual Websites
 - Housing for Users
 - Multi-facility proposals – APS/ATR, APS/CNM
 - Complementary research by users at two different facilities with different capabilities
- Planned benchmarking
 - Federated Systems
 - Training Programs



NUFO's Future

- NUFO will soon become the **Society for Science at User Research Facilities (SSURF)**
- SSURF will be a 501c3 non-profit corporation
- SSURF will be a member-oriented, professional society dedicated to all aspects of user facility research
- More inclusive membership categories with membership benefits
- Incorporation will allow growth, programmatic expansion, fundraising opportunities, employees

SSURF's Mission

Advance the science performed at user research facilities by (1) supporting their professional communities and research networks through the sharing of best practices and facilitation of professional development, and (2) promoting public awareness about the benefits and significance of the facilities and their research

Building a Larger Community of Practice

In December 2015, the National Academy of Public Administration
recommended:

“NSF formally establish communities of practice to share best practices and
implement a “lessons learned” requirement for all MREFC projects.”

**NUFO can help you;
please join us in our mission.**



What's in it for you?

SSURF plans to:

- **Host annual meetings on topics of importance to it membership**
 - “Power in Numbers: Building Partnerships and Common Standards across User Facilities” will challenge attendees to develop shared practices for improving users’ experience, and create community performance standards to facilitate easier multi-facility use and collaboration.
 - Examples of previous meeting themes: Industrial Usage, Educational Outreach, Bridging Science Across User Facilities, Big Data
 - Community-determined parallel workshops and breakout sessions are always welcome

What's in it for you?

- Continue the Annual Science Exhibitions on Capital Hill
- Coordinate Congressional staff visits to facilities
- Organize Congressional home district office visits
- Facility adoption of unique identifiers for all users to enable data sharing
- Training reciprocity
- Other plans as staff and resources allow (e.g., speaker series, or professional societies forums)

What would you need, what do you want, what can we help you with?

Questions and Comments

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info@nufo.org

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Paul.runci@pnnl.gov



National Superconducting Cyclotron Laboratory – Interactions with Users

David J. Morrissey

NSCL Associate Director for Operations

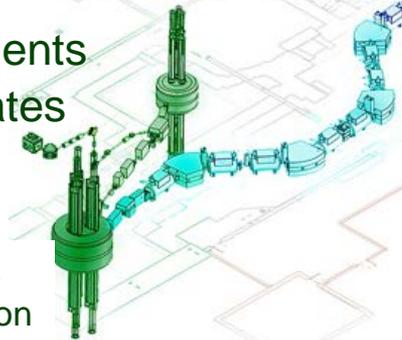


MICHIGAN STATE

UNIVERSITY

The NSCL is Operated to Facilitate Nuclear Science

- Originally an NSF sponsored laboratory on a university campus that evolved into a national user facility.
- NSCL produces and provides beams of “rare isotopes” for nuclear science research (present incarnation ~1990)
- As a national user facility the NSCL supports a broad scientific community:
 - The user group of NSCL has approximately 1350 members (98 U.S. colleges and universities represented)
 - Past 4 years 359 publications,
 - 79 were letter-like, 4 in Nature
 - Including a local research group,
 - 41 faculty
 - 73 graduate students
 - 100 undergraduates



Operation of NSCL user facility is supported by NSF Physics Division



External Program Advisory Committee Statistics (April 2016)

- Written Proposals Submitted to PAC40 (no oral presentations)
 - 44 Proposals, for a total of 7515 hrs
 - 33 proposals led by an Outside Spokesperson
 - 365 Proposers from 75 institutions in 17 countries
 - 118 Students
- Proposals Approved at PAC40
 - 19 Proposals (43%), for a total of 2744 hrs (37%) [468 hrs on reserve]
 - 8 GRETINA, 2 ReA3, 3 Low Energy Area, 6 Other
 - 16 proposals led by an Outside Spokesperson
 - 233 Experimenters from 52 institutions in 14 countries
 - 70 Students

PAC41 is expected to take place in Spring, 2017

Communication with Users is Critical Web Presence and Single Point of Contact at Lab

nscl.msu.edu

Dr. Jill Berryman, Manager for User Relations reports directly to NSCL Director handles all user interactions, coordinates experiment schedule, collects statistics



For NSCL Users

NSCL and FRIB welcome researchers from universities, government labs, and industry who are interested in performing experiments. There are three ways to obtain beam time at NSCL:

1. Submit a proposal during the [Call for Proposal](#) period for review by the [Program Advisory Committee \(PAC\)](#). A Call for Proposals is issued approximately every 6-12 months. The majority of beam time granted at NSCL is approved by the PAC.
2. Write a letter to the director for discretionary beam time. Examples of discretionary experiments include commissioning of new devices and very high impact scientific experiments.
3. Pay for beam time. Approximately 5% of accelerator time is available for purchase. Contact the [Manager for User Relations](#) for this procedure.



USER GUIDE
Information on proposing an experiments, Call for Proposals and the PAC.



AVAILABLE BEAMS
Rare isotope fast beam rates, list of primary beams, and the ReA3 beam list available here.



EXPERIMENTAL SCHEDULE
Current experimental schedules



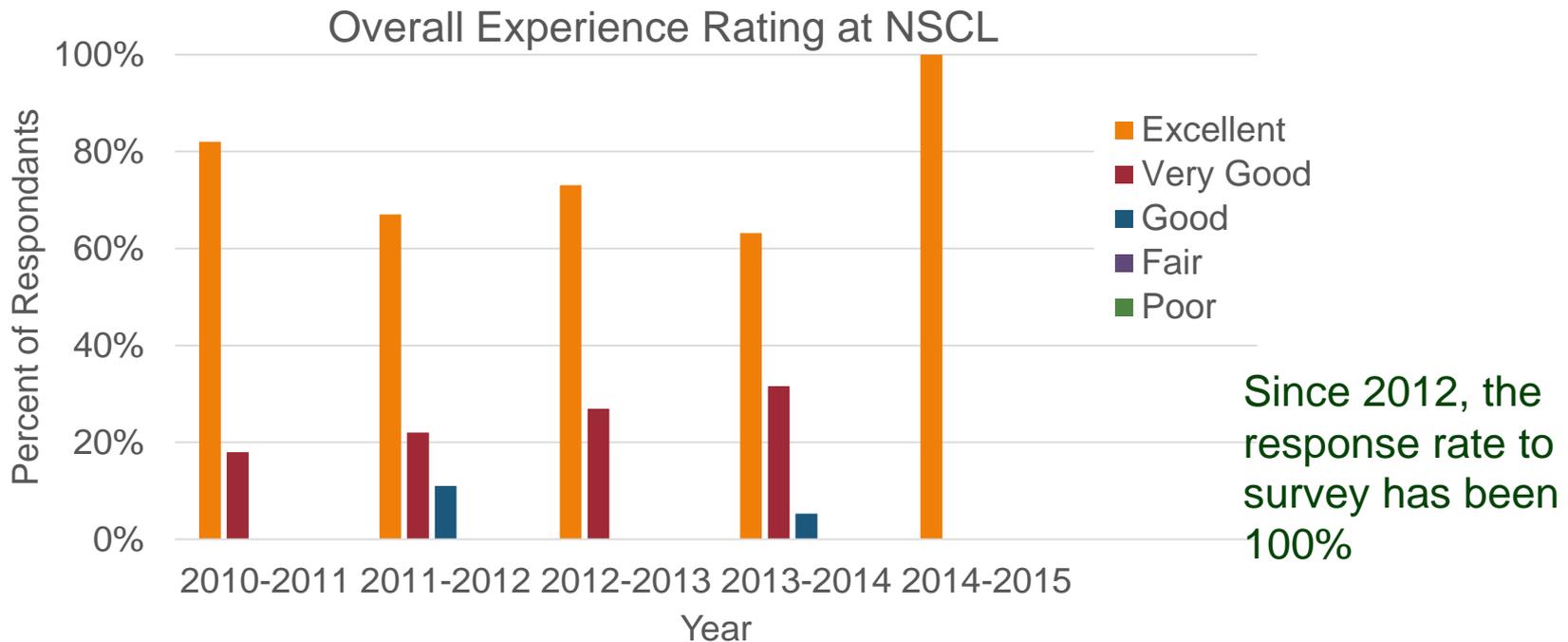
External User Organization

- Jill Berryman (Manager for User Relations) is the point of contact with NSCL users
- FRIB (nee NSCL) Users Organization (FRIBUO) www.fribusers.org
 - 1354 members from 98 US Universities/Colleges, 12 National Labs, in 50 countries
 - Quarterly newsletters “FRIB Laboratory Update for Users”
 - Announcements of important conferences, workshops, Call for Proposals
- Executive Committee of the FRIBUO contains an Operations Subcommittee, with three members focused on operations at NSCL
 - NSCL Laboratory Management has quarterly conference calls with Operations Subcommittee and chair of Executive Committee
 - One member of the Operations subcommittee attends the PAC meeting and records his/her observations. <http://www.nscl.msu.edu/users/PAC39-Crawford-Signed2.pdf>
- Annual Low Energy Community Meeting
 - Opportunity for users to come together annually, next at Notre Dame, Aug 11-13, 2016 <http://2016.lecmeeting.org/>
 - NSCL receives and acts on “Consensus Statements” on scientific thrusts and equipment or facility development plans created at these meetings
- User survey for feedback at the completion of each experiment



Experiment Feedback

- As part of the dedication to delivering world-class beams of rare isotopes to enable our users to achieve their scientific objectives the NSCL has a quality management system that was registered as compliant with the ISO 9001 standard and continues with external audits. Part of that quality management system is getting feedback from our users.
- Experiment Feedback survey is on-line the NSCL website ([here](#)).



Summary

- The NSCL is a national user facility that provides RIB's for nuclear science experiments proposed by users.
- PAC-approved beam time is scheduled and run by the NSCL in close coordination with the experiment spokesperson. ~Twenty experiments per year with several hundred (unique) experimenters.
- Large user community with various forms of engagement:
 - User Manager (scientist)
 - Large web utilization
 - User oversight of PAC and Operations
 - Annual meeting
 - Feedback on completed experiments