Overview

The theme of the 2011 meeting, access and awareness, was highlighted throughout the entire meeting. The more than 100 attendees explored topics ranging from best practices, to various forms of outreach, to effective communication with universities and other organizations representing users, user facilities, and science in general. Presentations included talks from representatives of the American Physical Society, the Association of American Universities, the National Science Foundation, founder of Xradia Corporation, ASTRA, and the Vice Chair of the Interdisciplinary Consortium for Research and Educational Access in Science and Engineering. NUFO members also provided updates on social media, user metrics, and user portals. One of the meeting’s highlights was a summary report from the NUFO Chair on the year’s accomplishments and future plans via the formation of Working Groups, which are outlined below. More detailed information about the meeting and its presentations can be found at: http://www.nufo.org/meetings/default.aspx

Eight breakout sessions were also held during this meeting to discuss the following topics:

- Social Media & Other New Approaches to Outreach or Education
- Issues in Site Access, Cyber Security, Data Policies
- How Can NUFO and Users Help Support Science Challenges?
- Working with Industry: Best Practices for Industry Involvement
- Encouraging Diversity and Research and Educational Access to National User Facilities
- User Advocacy Focus: Practice Communicating (Translating) Science and Potential Applications to the General Public
- User Administrator Focus on Benchmarking and Best Practices

NUFO Past, Present, and Future

Rene Bellwied, NUFO Chair, described NUFO Past, Present, and Future. After summarizing NUFO’s history, he spoke to NUFO’s accomplishments during 2010/2011 and outlined its plans for the future. A summary is provided below.

User Science Exhibition: NUFO sponsored a User Science Exhibition in Washington, DC on April 7, 2011. This Exhibition highlighted the significant and important role that scientific user facilities play in science education, economic competitiveness, fundamental knowledge, and scientific achievements. Fifty-nine users from 39 user facilities participated in this event. Attendees included Congressional leaders (both Senators and Representatives and their staff members), management from the DOE Office of Science and the National Science Foundation, National Laboratory Directors, and representatives from a number of science agencies and professional societies. Speakers at the Exhibition included Dr. Rene Bellwied,
Dr. Stephen Wasserman (Director, Translational Science & Technologies Beamline Eli Lilly and Company), Dr. Thom Mason (Director of Oak Ridge National Laboratory), and the Honorable Charles Fleishmann (R-TN). NUFO plans to hold User Science Exhibitions in DC annually.

USA Science & Engineering Festival: NUFO participated in the inaugural USA Science & Engineering Festival held in Washington, DC on October 23 and 24, 2010. An estimated 500,000 people of all ages celebrated science and engineering by participating in this event, with an additional 250,000 attending in satellite events across the nation. The Festival included 1,500 hands on activities, 75 stage shows, 550 participating organizations, 25 Nobel Laureates and thousands of scientists and engineers.

The NUFO representatives conducted hands-on demonstrations with the general public to stimulate their interest in science. An estimated 5,000 children, parents, high school students, and teachers participated in activities at the NUFO booth. NUFO has registered to participate in this event again in 2012.

Professional Society Meetings: To increase awareness of the capabilities available at user facilities to students and scientists at large and make individuals aware of the science currently being conducted at these facilities, NUFO sponsored booths at the American Association for the Advancement of Science (AAAS), the American Physical Society (APS), and the American Chemical Society (ACS) meetings. They have plans to attend these meeting in future years and to expand this outreach to include the Material Research Society and the American Astrophysical Society.

Social Media: NUFO joined Facebook and Twitter during the past year as a means of educating the general public about the science that is being conducted throughout the country at user facilities. R. Bellwied noted that NUFO needs to further develop these efforts in the years to come.

Professional Publications: To increase awareness of NUFO and awareness of user facilities throughout the scientific community, NUFO is also working with professional publications. Articles written about the National User Facility Organization appeared in Chemical & Engineering News, Notiziaro, and Synchrotron Radiation News during the past year; articles are planned for other publications.

Benchmarking: User Administrators are continually conducting benchmarking exercises. Benchmarking studies in 2011 included publication acknowledgements, insurance for users, bilingual websites and research conducted by Fortune 500 Companies at user facilities. The benchmarking results are available on the NUFO website.

Reports: As an outcome of the 2010 NUFO Annual Meeting, NUFO prepared an Educational Outreach Report which is available on the NUFO web site.
Meeting Outcome

As a result of the meeting discussions, the NUFO Steering Committee has formed five working groups, described below. Each user organization will be encouraged to have representation on at least one working group.

Administrative Affairs Working Group

NUFO’s primary mission is to facilitate communication among users, user organizations, facility administrators, and other stakeholders. The Administrative Affairs Working Group, which currently includes all administrative representatives of NUFO facilities, focuses on operational needs. The user administrators from NUFO facilities hold regular teleconferences, conduct benchmarking surveys, and discuss ways in which they can facilitate user access by standardizing and streamlining processes. Examples of prior successes and future endeavors include:

- A NUFO representative worked with the Department of Energy as part of a team to rewrite DOE Order 142.3A (Foreign Visits & Assignments), which defines a program for unclassified foreign national access to DOE sites, information, technologies, and equipment. The experience and expertise of the NUFO user administrators helped to ensure that the revised order supports the importance of national security issues while maintaining the intellectual nature and scientific productivity of user facilities.

- This Working Group is currently investigating the possibility of using web-based user agreement execution process developed by Pacific Northwest National Laboratory to streamline this process at other national laboratories. Brookhaven National Laboratory and Argonne National Laboratory have agreed to serve as pilot sites.

- This Working Group will collaborate with the Cyber and Computing Affairs Group to pursue a standardized cyber security training program that can be implemented by all facilities.

Co-chairs - Susan White-DePace (BNL), Susan Strasser (ANL), and Teri Law (PNNL)

Cyber and Computing Affairs Working Group

This Working Group is being formed to bring together cyber security professionals and user representatives to achieve what was determined at the 2011 NUFO Annual User Meeting to be our common goal of:

"Reliable and secure access to computing resources at laboratories and user facilities with reasonable security measures that mitigate risk and minimize delays or interruptions using a risk-based approach (DOE order 205.1B)."
The significance of DOE order 205.1B ([https://www.directives.doe.gov/directives/current-directives/205.1-BOrder-b/view](https://www.directives.doe.gov/directives/current-directives/205.1-BOrder-b/view)) is that it replaces six previous DOE orders and, more importantly, "emphasizes risk management rather than a systems-level 'controls compliance' approach" and is intended to be implemented "in a manner that improves, rather than impedes." The changes implied by this new DOE order are encouraging, but meanwhile, three of the national laboratories have suffered serious cyber attacks recently, and the response to that may increase the challenges for remote computer access by users.

Co-chairs - **Brant Johnson** (BNL) and **David Skinner** (LBNL)

**Social Media Outreach Working Group**

Social media outreach provides a platform from which NUFO can promote news and causes of interest to the user community we represent and organizations with whom we communicate. The charge to the Social Media Outreach Working Group is to address the following issues:

- Strategy
- What will we promote?
- How will we promote it/what media?
- Who will manage the account(s)?
- Who will have permission to post?
- Will we have sufficient content to remain current? How often should we post?
- Market our new tools
- Disseminate meaningful information/quality content
- Create dialog/do not censor?
- Examine numbers of followers versus genuine interest
- Facilitate conversations/"stir the pot”

Co-chairs – **Katherine Kantardjieff** (Cal State San Marcos) and **Staci West** (PNNL)

**University Relations Working Group**

The purpose of the NUFO University Relations Working Group is to facilitate communication between the national user facilities and the full spectrum of universities (public and private, research- and teaching- oriented, and domestic and foreign). The primary mechanism for communication is through facility users based at universities, but NUFO also wants to inform potential users at other institutions, including faculty, post-docs, and students, about the research opportunities available at national user facilities. Our goals include the following:
• Making university administrators and trustees aware of the important resource provided by national user facilities, which enable research in areas that would be prohibitively expensive for individual universities to undertake. These in-kind contributions by federal agencies enable a wide range of grant-supported research and education to occur.

• Working with the AAU (Association of American Universities, 59 member universities in the U.S.) and the APLU (Association of Public and Land Grant Universities, 218 member universities in the U.S.) to inform universities of the resources available at national user facilities

• Countering ignorance about national user facilities often encountered at universities, including perceptions of competition, low utilization, lack of suitability for education, low funding, and lack of credit to universities.

• Communicating the benefits to graduate and undergraduate students of conducting research at national user facilities, which can broaden their education, challenge them by exposing them to internationally-competitive research, and lead to an array of career opportunities.

Co-chairs - Rene Bellwied (U. of Houston), Eric Gawiser (Rutgers University), and Susan White-DePace (BNL)

Industrial Access and Interactions Working Group

Background: Participation of industrial users in research at DOE/BES synchrotron and neutron user facilities has decreased during the past decade. To examine this issue, NUFO organized a workshop in June 2009 as part of the 2009 NUFO Annual Meeting at Argonne National Laboratory. At this workshop, five major issues were identified. Recommendations to address these issues were developed and incorporated in a final report, “Participation by Industrial Users in Research at National User Facilities: Status, Issues, and Recommendations” (available under Reports on the nufo.org web site).

During 2010, the DOE Office of Science Basic Energy Sciences Advisory Committee (BESAC) further studied this issue as part of an overall assessment of science for energy technology. Recommendations from this study, reported in a document released in August 2010 called, “Science for Energy Technology, Strengthening the Link between Basic Research and Industry,” mirrored and expanded recommendations from the NUFO 2009 report.

In May 2011, NUFO conducted a benchmarking study to assess specifically how facilities had addressed the NUFO and BESAC recommendations. The results of this study (from 52% of the
NUFO facilities) suggest that there is still considerable work to be done to engage industrial users in research at national user facilities.

Accordingly, at the NUFO annual meeting in June 2011 at SLAC National Accelerator Laboratory, a decision was made to organize a NUFO Industrial Interactions Working Group to work with industry, facilities, and sponsors to further explore and identify barriers to industrial access, as well as barriers the full implementation of previously recommended solutions. Additionally, this group may be able to strengthen the ties between sponsors and industry through education. The goals and charge for this working group follow.

Charge for the Working Group. The NUFO Industrial Interactions Working Group is charged with the following:

- Working with current and potential industrial users to identify, in detail, the barriers they face in conducting research at national user facilities.

- Working with facilities and sponsors to identify barriers to the implementation of recommended solutions to previously identified problems.

- Working with industrial representatives to educate them on their responsibilities to the national user facilities and the Office of Science to ensure that the facilities can continue to provide the necessary instrumentation/capabilities/expertise needed for industrial research.

Co-chairs- **Mike Crawford** (DuPont), **Simon Bare** (UOP), and **Steve Wasserman** (Eli Lilly)

User Data Management

This working group is formed to continue the discussions of the 2011 annual NUFO meeting breakout session on Facilitating Cross Facility Access: A Model of Cross Facility Proposal Review, Access and Tracking.

Current concerns include multiple facility access and data sharing, user agreements, proprietary vs. non-proprietary proposals, reviewing mixed facility proposals, data security, risk assessment, instrument tracking, and scheduling.

Future needs include data integration of users, instruments, costs and schedules, establishing common user data definitions and counting of users between cooperating facilities, enabling multiple facility access to user/proposal/instrument data, commonality of user agreements, changing the focus from databases to data management systems, integrating audit able full cost recovery data acquisition and display, and responding to calls to provide open access to all non-proprietary results of tax-payer funded research.

Chair - **David A. Bunzow** (Molecular Foundry)