

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



NATIONAL
USER
FACILITY
ORGANIZATION

NUFO Goes to Washington! Update on 2012 Activities

Tony Lanzirotti

Univ. of Chicago- CARS

Chair - NUFO

A Little Historical Perspective

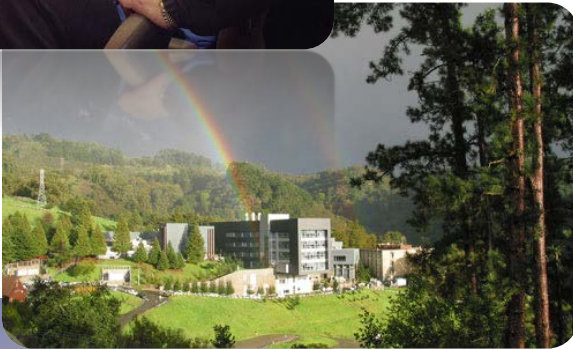
- NUFO was founded in 1991 as a means for user administrators from national light sources (at the time) to better communicate and coordinate efforts.
- It has grown since then into the National User Facilities Organization representing more than 30,000 users of 44 federally funded research facilities (DOE, NSF, and other agencies)
- It has grown from a group focused solely on internal administrative activities to one that also advocates for scientists and performs public outreach.

FACILITIES

Facility	Location
Accelerator Test Facility (ATF)	BNL
Advanced Light Source (ALS)	LBL
Advanced Photon Source (APS)	ANL
Advanced Test Reactor (ATR)	INL
Argonne Leadership Computing Facility (ALCF)	ANL
Argonne Tandem Linac Accelerator System (ATLAS)	ANL
Atmospheric Radiation Measurement Climate Research (ARM)	Global Network
Center for Advanced Microstructures and Devices (CAMD)	LSU
Center for Functional Nanomaterials (CFN)	BNL
Center for Integrated Nanotechnologies (CINT)	Sandia/LANL
Center for Nanophase Materials Science (CNMS)	ORNL
Center for Nanoscale Materials (CNM)	ANL
Cornell High Energy Synchrotron Source (CHESS)	Cornell
Energy Sciences Network (ESnet)	LBL
Environmental Molecular Sciences Laboratory (EMSL)	PNNL
Fermilab	FERMI
High Flux Isotope Reactor (HFIR)	ORNL
High Temperature Materials Laboratory (HTML)	ORNL
Holifield Radioactive Ion Beam Facility (HRIBF)	ORNL
Joint Genome Institute (JGI)	The Regents of the University of California
Laboratory for Laser Energetics (OMEGA)	University of Rochester
Large Hadron Collider (LHC)	CERN, Switzerland
Linac Coherent Light Source (LCLS)	SLAC National Accelerator Laboratory
Lujan Neutron Scattering Center @ LANSCE	LANL
NASA Space Radiation Laboratory (NSRL)	BNL
National Astronomy and Ionosphere Center (NAIC)	Puerto Rico
National Center for Electron Microscopy (NCEM)	LBL
National Energy Research Scientific Computing Center (NERSC)	LBL
National High Magnetic Field Laboratory (Maglab)	Florida State University
National Ignition Facility (NIF)	LLNL
National Optical Astronomy Observatory (NOAO)	Tucson, AZ
National Radio Astronomy Observatory (NRAO)	Charlottesville, VA
National Superconducting Cyclotron Laboratory (NSCL)	East Lansing, MI
National Synchrotron Light Source (NSLS)	BNL
Oak Ridge Leadership Computing Facility (OLCF)	ORNL
Proton Radiography (pRad) @ LANSCE	LANL
Relativistic Heavy Ion Collider (RHIC)	BNL
SLAC Particle Physics & Astrophysics/Facility for Advanced Accelerator Experimental Tests (FACET)	SLAC National Accelerator Laboratory
Spallation Neutron Source (SNS)	ORNL
Stanford Synchrotron Radiation Lightsource (SSRL)	SLAC National Accelerator Laboratory
TANDEM	BNL
The Molecular Foundry	LBL
Thomas Jefferson National Accelerator Facility (JLab)	JLAB
Weapons Neutron Research Facility (WNR) @ LANSCE	LANL



NUFO's mission today



- Educate and Advocate regarding the benefits and significance of research conducted at user facilities and their operational needs.
- Facilitate communication among users, user representatives, facility administrators and stakeholders.
- Targeted efforts to optimize usage:
 - Industrial Users (e.g. ease access)
 - Foreign Scientists (e.g. FVA)
 - Collaborative University Groups (e.g. engaging Univ. presidents)
 - Improve Quality of life for Users (e.g. housing, provide information)
- Provide a unified message at the national level on issues of resources for science, economic competitiveness and education for the next-generation scientific workforce.

NUFO's Outreach Mission

- Outreach to Colleagues at Scientific Society Meetings is an ongoing effort
 - (AAAS, APS, ACS, ACA, MRS, American GeoPhysical Union)
- NUFO Annual Meetings
- 2011 Meeting was held at SLAC
 - Articles in *SRN*, *CERN Courier*, *Notiziario Neutroni e Luce di Sincrotrone*, *C&EN*
 - More than 100 attendees including NUFO members, NSF and DOE program managers, Professional Society representatives, and industrial representatives.
 - Summary report on-line (www.nufo.org)



2012 NUFO Annual Meeting will be held at Los Alamos National Laboratory June 18 – 20.



USA Science and Engineering Festival

- In Oct. 23-24, 2010 NUFO participated in the inaugural USA Science & Engineering Festival in Washington
 - An estimated 500,000 people of all ages celebrated science and engineering participated in this event
 - NUFO conducted hands-on demonstrations to stimulate interest in science. An estimated 5,000 children, parents, high school students, and teachers participated in activities at the NUFO booth
- Second National Science Festival and Expo will be held in DC on April 27-29, 2012
 - <http://www.usasciencefestival.org/>
 - NUFO has already reserved a booth and will participate.



NUFO User Facilities Exhibition

Congress of the United States
Washington, DC 20515

July 15, 2010

- In 2010 NUFO received an invitation from members of congress to hold an exhibition to educate Members and staff about the research being conducted at national user facilities
- The exhibition was held at the Rayburn House Office building April 7th , 2011

Dr. Rene Bellweid
Chair, National User Facility Organization
Wayne State University
Detroit, MI 48202

Dear Dr. Bellweid:


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 considering 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 decisions regarding resources for the facilities and the future of our nation. Thank you for planning and undertaking this initiative.

Sincerely,


RUSH HOLT
Member of Congress


JUDY BIGGERT
Member of Congress


BILL FOSTER
Member of Congress


VERNONIA J. EHLERS
Member of Congress



- Fifty-nine users from 39 user facilities participated in this event.
- Users presented posters from each facility describing the science and impact.





synchrotron light sources.

An Overview



Lighting the Way

APS provides high-energy, highly penetrating x-ray beams for researchers that are ideal for analyzing the structural arrangements of atoms and molecules, getting the intricate interfaces where all these molecules are in contact, determining the interdependent form and function of biological processes, and searching, to real time and on nanoscale length scales, the molecules involved in chemical reactions and processes.



Meeting the Challenge

Each year, the APS hosts more than 1,200 researchers visiting from universities, industry, and other national laboratories located in all 50 states in the U.S. Researchers use this remarkable scientific tool to carry out thousands of experiments in materials science, chemistry, physics, biology and life sciences, geoscience, environmental science, energy science, and agricultural science with the goals of developing new forms of energy, sustaining our nation's technological and economic competitiveness, pushing back against the ravages of disease, and preparing the next generation of scientist - investigators.

Advanced Photon Source

The Advanced Photon Source is the brightest storage-ring source of x-rays in the western hemisphere. The facility is an invaluable aid for researchers who are trying to solve the difficult and challenging problems faced by our complex, high-tech world.





Scientific Accomplishments



Award-Winning Science

All three recipients of the 2009 Nobel Prize in Chemistry carried out research at the APS (and at other U.S. Department of Energy research facilities) that led directly to understanding the structure and function of the enzyme. More than 60 papers published by these individuals describe research performed at the APS. At present, seven protein structures have been solved at the APS that at any other synchrotron light source, knowledge of these structures has significantly enhanced the fight against disease.



Our Energy Future

Lighting the way to a brighter energy future is a major focus of the photon science at the APS, from improving fuel injectors & energy and steam engine combustion; to aiding in the development of new lithium ion battery technology; and to studying new materials that can provide clean energy, fuel-efficient, and relatively low-cost natural gas burning turbines engines that will be key to improving and sustaining the future energy grids in the U.S. and other nations.



Learning from Nature

Nature's ability to create millions of years of evolution has developed materials and designs profoundly better than those we can currently manufacture. Imaging capabilities at the APS have enabled scientists to discover how energy flows from the most basic, to the most complex, to the most advanced. The ability to mimic these physiological systems can significantly affect society, for example, by leading to better sensors, new and improved microfluidic devices, and robotic locomotion.



Living in the Material World

The extreme brightness of APS x-ray beams help scientists understand the properties of materials at the molecular level, where changes occur that can affect the way a material performs. It is unique insight into how to create new materials, for instance, metal components that do not fail when deformed or bent, new microstructures or electronic devices created for our information technologies, and new catalysts that allow a clean production of environmentally friendly refrigerants.

Societal Impact



Number of Experiments



Number of Users



APS has users from all 50 states and many foreign countries.



NUFO User Facilities Exhibition 2012

- We have just received an invitation from Congress to hold a second exhibition in DC.
- Our intention is this will be similar to April 2011 Exhibition.

• One day in the House Office Building.

• Next day in the Senate Office Building!

• March 28-29 (tentative).



Congress of the United States
Washington, DC 20515

December 14, 2011

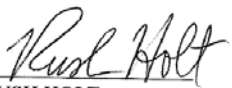
Dr. Antonio Lanzirotti
Chair, National User Facility Organization
University of Chicago
5734 South Ellis Avenue
Chicago, Illinois 60637

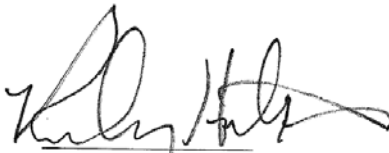
Dear Dr. Lanzirotti:

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 Capitol 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,


RUSH HOLT
Member of Congress


RANDY HULTGREN
Member of Congress

So you want to help. Fantastic!

- Your time and engagement! Become a Friend (http://www.nufo.org/join_friends_of_nufo.aspx)
- Disseminate NUFO information to the User Community
- Volunteer to work with us
 - NUFO User Exhibition
 - US Science Festival
 - Volunteer for NUFO booth at a professional meeting
- Help us gather information needed for posters, handouts, metrics.
- If you identify a concern that broadly affects facility users, let us know (*Housing, User Agreements, Fortune 500, etc...*)
- Volunteer to serve on NUFO Working Group.

NUFO Working Groups

We currently have six working groups which are actively developing and implementing activities to benefit the collective NUFO user community. Volunteers can register on-line.

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

Cyber and Computing Affairs: Co-chairs--Brant Johnson (BNL) and David Skinner (LBNL)

Industrial Access and Interactions: Co-chairs-- Mike Crawford (DuPont), Simon Bare (UOP), and Steve Wasserman (Eli Lilly)

Social Media Outreach: Co-chairs--Katherine Kantardjieff (Cal State San Marcos) and Staci West (PNNL)

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

User Data Management: Chair--David Buzow (Molecular Foundry)

NUFO's outreach on specific agenda items can positively impact users. For example in 2009-2010 NUFO worked with DOE regarding Order 142.3A on unclassified foreign visits and assignments and due to those efforts DOE modified the rule to address concerns.

So you want to help. Fantastic!

- Act on behalf of the User Community to advocate for scientific resources and educate the public about user facilities. NUFO will participate actively in “Educating” but it’s up to **YOU** to take the lead in “Advocating”.
- Engage legislators in Congress in supporting basic scientific research. Anyone with a US mailing address can write to Congress. **Letters and visits do have an impact!!!**
 - **Use Email:** Electronic submission is preferred over letters and phone calls.
 - **Individualize:** What’s your connection to affected programs, how will you and others be affected by their funding or removal?
 - **Use Your Personal Computer:** If you are a government employee, *please do not use government resources, such as a government computer*, to send your communication. You must do so as a private citizen, not in your capacity as a federal employee.
 - **Consider a personal visit:** Visit your representatives either in DC or in their home offices.
 - **NUFO Can Help!** (Contact information, brochures, information about current issues)

