

Tony Lanzirotti
NSLS Facility Town Meeting
February 16, 2011

PSD UEC and NUFO Update

Town Meeting Agenda

- **Town Meeting (1:00 – 3:00 p.m.) – Seminar Room**
- 1:00 – 1:10 Welcoming Remarks, UEC and NUFO Update - Tony Lanzirotti
- 1:10 – 1:20 GUV Center Update - Susan White-DePace
- 1:20 – 1:30 Users' Meeting Update - Kathy Nasta
- 1:30 – 1:55 Photon Science Update - Steve Dierker
- 1:55 – 2:15 Safety Update - Andrew Ackerman
- 2:15 – 2:30 Machine Update - Emil Zitvogel
- 2:30 – 2:45 The Future of BNL Housing - Lanny Bates
- 2:45 – 3:00 Update on PSD User Access Policy- Qun Shen

What has the PSD UEC been up to lately?

- Planning for 2011's Users' Meeting is essentially done and we think it should be an exciting event. Working with User Administration to streamline Meeting travel and reimbursements to speakers.
- UEC is re-writing its charter to better address the future needs of the User community.
- Participated in PSD SAC and triennial DOE review of the NSLS.
- NSLS UEC Chair with UEC Chairs from RHIC and CFN met with BNL management to discuss areas of common concern (GUV Center organization, housing issues, user agreements). BNL management agreed with us that a quarterly meeting with the UEC Chairs would be very useful for BNL.
- Actively interfacing with BNL on housing improvements, issues surrounding user agreements.
- Continued participation on the BNL Community Advisory Council.

Community Advisory Council



- Formed in 1998 by Jack Marburger to advise the Lab Director on selected issues, particularly on the environment, safety, and health.
- Represents individuals and groups having a diverse range of interests and values - interested in or affected by the actions of the Lab.
- Meets every second Thursday at 6:30 pm, usually in Berkner Hall.
- Meetings are open to the public and there is a public comment segment.
- Web site: <http://www.bnl.gov/community/cac/default.asp>

CAC Membership

The CAC consists of representatives from 25 local business, civic, education, activist, environment, employee, emergency, and health organizations.

We work to provide consensus recommendations to the Lab on issues.

- **Don Garber**
Affiliated Brookhaven Civic Organizations
- **Arnie Peskin**
Brookhaven Retired Employee Association
- **Jim Heil**
Brookhaven Senior Citizens
- **Adrienne Esposito**
Citizens Campaign for the Environment
- **Christine Birben**
Colonial Woods / Whispering Pines
- **Sarah Anker**
Community Health and Environment Coalition
- **Michael Giacomaro**
East Yaphank Civic Association
- **Gregory Bush**
Educator
- **Ed Kaplan**
Friends of Brookhaven
- **Jane Corrarino**
Health Care
- **Mary Joan Shea**
Huntington Breast Cancer Coalition
- **Scott Krsnak**
Int'l Brotherhood of Electrical Workers
- **Rita Biss**
Lake Panamoka Civic Association
- Long Island Association
- **Richard Amper**
Long Island Pine Barrens Society
- **David Sprintzen**
Long Island Progressive Coalition
- **Thomas Talbot**
Longwood Alliance
- **Maria Castro**
Longwood Central School District
- **Jean Mannhaupt**
Neighbors Expecting Accountability and Remediation
- **Pat Henagan**
Ridge Civic Association
- **Iqbal Chaudhry**
Science and Technology
- **Joe Williams**
Suffolk County Fire, Rescue, and Emergency Services
- **Anthony Graves**
Town of Brookhaven
- **Vacant**
Town of Riverhead
- **Jean Jordan-Sweet**
User Executive Committee
- **Helga Guthy**
Wading River Civic Association

Selected issues over the years

- Tritium leak in HFBR spent fuel pool and subsequent closing of HFBR
- Search for new BNL manager/operator
- Environmental restoration projects
 - Peconic River
 - Acceleration of cleanup funds
 - Remediation of soil and groundwater
- D&D of Graphite and High Flux Beam Reactors
- Employee Health Study
- Budgets
- Annual Site Environmental Reports
- Medical research on animals
- BP/LIPA Long Island Solar Farm project
- 5-year reviews/10-year strategic plan/site planning
- Sewage Treatment (SPDES) permit
- Blueprint and Lab infrastructure
- Deer management
- Nanosafety

Nominations are now open

UEC COMMUNITY SERVICE AWARD

- In 2002 the UEC instituted an award to acknowledge an individual from the NSLS community (users and staff) in recognition of his/her service, innovation, and/or dedication to NSLS users.
- This is not an award for scientific achievement, but rather for contributions that have improved the quality of science at the NSLS.
- The award is presented at the annual NSLS Users Meeting. Any member of the NSLS user community with an active appointment is eligible for voting of this award, excluding current UEC/SPIG members.
- The award winner receives a \$250 cash award. In addition the award winner's name is engraved on the UEC Award plaque which is displayed in the lobby of the NSLS.
- <http://www.nslsuec.org/events/communityaward.aspx>

SPIG NOMINATIONS

- Bio. Crystallography & Diffraction
- High Pressure
- Imaging
- Industrial Users
- Infrared Users
- Magnetism
- Students and Post Docs
- Topography
- UV Photoemission & Surface Science
- XAFS
- <http://www.nslsuec.org/spigs.aspx>

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



NATIONAL
USER
FACILITY
ORGANIZATION

What is NUFO ?

- 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 Facility Organization representing 27,000+ users from the 36 largest DOE and NSF funded facilities in the country
- NUFO is an organization which represents the interests of scientists who conduct research at U.S. national scientific user facilities as well as scientists from universities, laboratories, and industry who use facilities outside the U.S..

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



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NUFO mission

- NUFO facilitates communication among users, user organizations, facility administrators, and other stakeholders.
- NUFO advocates the benefits and significance of research conducted at user facilities, as well as their operational needs.
- NUFO seeks to provide a unified message at the national level on issues of resources for science, economic competitiveness, and education for the next-generation scientific workforce.

What has NUFO been up to lately?

- Oct. 23-24 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.



What has NUFO been up to lately?

- On Thursday, April 7, from 8:00 a.m. until 3:00 p.m., NUFO will hold a User Science Exhibition on Capitol Hill.
- NUFO was officially invited by several Members of Congress to hold the exhibition to educate Members and staff about the research being conducted at national user facilities, as well as the ultimate benefit of this research to the United States.
- Will be held at the Rayburn House Office building.



What has NUFO been up to lately?

- We will have presentations and posters about NUFO and one poster from each member facility with User representatives to highlight the facility and its science.

Advanced Photon Source

The Advanced Photon Source (APS) at Argonne National Laboratory is the brightest source of x-rays in the Western Hemisphere (produced by a storage ring). 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 at the U.S. Department of Energy research facilities for key discoveries in understanding the structure and function of the disease. More than 40 papers published by these individuals describe research performed at the APS. In previous years, more protein structures have been solved at the APS than at any other synchrotron light source, knowledge of these structures has significantly advanced 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 supporting fuel injection efficiency and clean engine combustion, to aiding in the development of new lithium-ion battery technology and to studying new materials that can provide cleaner energy, fuel efficiency and relatively low cost stored gas burning turbo engines that will be key to improving and advancing the future energy grid in the U.S. and other nations.

Big Science on a Small Scale
The APS provides high-energy, highly penetrating x-ray beams that scientists can use to study the structural arrangements of atoms and molecules, probing the intricate, complex and often hidden structures of biological proteins, tiny, self-organizing cells and nanoscale structures, and studying the development and function of biological proteins, and watching, in real-time and in response to light pulses, the molecules involved in chemical reactions, and processes.

Meeting the Challenge
Each year, the APS hosts more than 1,200 researchers visiting from universities, companies, and research labs located in all 50 states in the U.S. The researchers use this remarkable scientific tool to carry out thousands of experiments in materials science, chemistry, physics, biology and life science, geoscience, environmental and energy, and agricultural science with the goal of developing new forms of energy, creating new materials, technological and economic competitiveness, pushing back against the ravages of disease, and preparing the next generation of scientific innovators.

Social Impact

Uses by Location

Number of Experiments

Number of Users

Uses by Field of Research

Uses by Affiliation

Uses by Geographical Distribution

National Synchrotron Light Source

The National Synchrotron Light Source at Brookhaven National Laboratory supports research in energy sciences, life sciences, materials and chemical sciences, geosciences and ecology, and applied science and engineering.

Scientific Accomplishments

Two Nobel Prizes
The 2009 and 2001 Nobel Prizes in Chemistry were awarded, respectively, to NIELS BOHR and YU. I. LEVINSON, and THOMAS A. STENN and RICHARD M. LEECH. These prizes recognize the discovery of the neutron and the development of the atomic bomb and the development of the transistor.

Science at the Nanoscale
Bright x-rays at NSLS give materials the microscopic capabilities needed to develop advanced materials and nanotechnology. These x-rays challenge the boundaries of what is possible, revealing the structure and function of materials at the nanoscale level.

Next Generation Medical Imaging
Using NSLS, researchers have demonstrated a new, highly detailed x-ray imaging technique for the early diagnosis of Alzheimer's disease and cancer. This technology has the potential to reveal the structure, control and modulation of biological processes.

Greener, More Efficient Energy Storage
Research from Brookhaven National Laboratory, GE Global Research, Rutgers University and Stony Brook University are using NSLS to probe electrochemical processes in solid-state lithium batteries and develop hydrogen-storage materials for automotive fuel-cell applications.

Social Impact

NSLS-II is on track to be the most powerful X-ray source in the world for 2015.

Uses by Field of Research

Uses by Affiliation

Uses by Geographical Distribution

Relativistic Heavy Ion Collider

At the Relativistic Heavy Ion Collider (RHIC) at Brookhaven National Laboratory, physicists from around the world are exploring the earliest moments of the universe, the most fundamental particles of matter, and the forces through which they interact.

Scientific Accomplishments

Quark-Gluon Plasma
Instead of producing an unexciting gas of free quarks and gluons, heavy ion collisions at RHIC have produced a liquid of strongly interacting quarks and gluons. With a temperature 250,000 times hotter than the center of the Sun, this quark-gluon plasma has given scientists a surprising glimpse of what the universe was like just after the Big Bang about 14 billion years ago - a nearly perfect liquid with practically no viscosity or resistance to flow.

Exotic Findings
RHIC's collisions have also produced two "hadrons" that may internally display fundamental properties of quark-gluon interactions, as well as the earliest interactions in the universe. These findings may have implications for understanding and exploring fundamental aspects in the early universe, and offer insight into models of neutron stars.

Proton Spin Mystery
RHIC's proton-proton collisions are providing the first information on how gluons contribute to the overall spin of a proton, which cannot be accounted for by the spin of its quark alone. Each collision suggests that gluons don't contribute enough to solve the mystery of the "missing" spin, opening new experiments into how quarks and gluons interact and how nuclei protons and other particles.

Benefits Beyond Physics
Research at RHIC has inspired innovations in automotive technology that could greatly improve vehicle safety in particle-beam delivery systems used to treat cancer. Likewise, advances in data architecture and modeling systems developed by RHIC will benefit industry in large. Furthermore, many scientists and engineers trained at RHIC go on to work in fields as diverse as national security, medicine, energy generation, space exploration, and more.

Social Impact

Employment of Brookhaven RHIC

Uses by Geographical Distribution

Light-Speed Collisions

RHIC is a 2.4-mile circumference, two-ring particle accelerator designed to collide at near light-speed heavy ions and polarized protons. By studying the particles that emerge from these collisions, scientists learn whether what happened at the moment of impact and under the conditions of the earliest moments of the universe. This research is leading to a new understanding of the forces that held ordinary matter together ... and even greater insights to follow.

Looking Ahead
RHIC findings have raised compelling questions about the forces that explain the formation of the most fundamental particles of matter and the forces through which they interact.

Prevent significant cuts to science funding

- The FY 2011 budget was not passed while Congress was in session last year. In an effort to prevent a government shutdown, lawmakers adopted a concurrent resolution to continue funding for 2011.
- This resolution is set to expire in three weeks, and legislators have announced that they will draft another resolution to fund the federal government for the seven months remaining in the fiscal year.
- This new bill has proposed significant cuts totaling \$100 billion from President Obama's FY 2011 budget request (non-defense).



FY 2011 CONTINUING RESOLUTION REDUCTIONS (in millions of dollars)		
Committee	Compared to FY10 Enacted	Compared to FY11 Request
Energy and Water Development		
Investigations, Corps of Engineers	(56.0)	-
Construction, Corps of Engineers	(441.0)	(100.0)
Mississippi River and Tributaries, Corps of Engineers	(121.4)	-
Operation and Maintenance, Corps of Engineers	(39.0)	-
Regulatory, Corps of Engineers	-	(3.0)
FUSRAP, Corps of Engineers	(4.0)	-
Flood Control and Coastal Emergencies, Corps of Engineers	-	(30.0)
Office of Assistant Secretary of Defense - Civil Works, Corps of Engineers	-	(1.0)
Central Utah Project Completion Account	-	(1.0)
Water and Related Resources, Bureau of Reclamation	(37.7)	(0.1)
Desert Terminal Lakes, Bureau of Reclamation	(115.0)	(115.0)
Central Valley project, Bureau of Reclamation	-	(14.6)
Energy Efficiency and Renewable Energy	(786.3)	(899.3)
Electricity Delivery and Energy Reliability	(35.4)	(49.3)
Nuclear Energy	(131.8)	(169.3)
Fossil Energy Research and Development	(116.4)	(30.6)
Naval Petroleum and Oil Shale Reserve	(2.1)	(2.1)
Clean Coal Technology	(18.0)	(18.0)
Strategic Petroleum Reserve	(120.2)	(15.3)
Energy Information Administration	(15.4)	(33.6)
Nondefense Environmental Management	(20.4)	(0.9)
Uranium Enrichment D&D Fund	(70.0)	(26.6)
Science	(893.2)	(1110.9)
Nuclear Waste Disposal	(2.8)	-
ARPA-E	-	(250.0)
Loan Guarantee Authority	(250.0)	(1410.0)
Adv. Tech. Vehicle Manu. Loan Program	(10.0)	-
Departmental Administration	(31.9)	(32.1)
Defense Environmental Cleanup Program	(208.9)	(120.9)
Other Defense Activities	(77.5)	(108.2)
Power Marketing Administrations	(189.4)	-
NNSA Office of the Administrator	(17.4)	(44.9)
Weapons Activities	-	(312.4)
Nuclear Nonproliferation	(97.1)	(647.5)

\$1.1 billion reduction in the DOE's Office of Science, \$1 billion from NIH, \$186 million from NIST, \$139 million from NSF. This is a 33% cut in federal spending, 20% for DOE-Science.

Prevent significant cuts to science funding

- It is **VITAL** that Users engage their legislators in Congress to avoid significant and disruptive cuts to basic scientific research.
- The window of opportunity is very small since the CR expires March 4th. Your voices need to be heard by next week!!
- Your letters can help ensure that the new bill includes predictable and sustained support for science.
- Specifically tailor and mention any connection you may have to affected programs and how you and others will be affected by their removal.

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Please send a letter to your federal legislators urging them to support science and innovation when considering the fiscal year (FY) 2011 continuing resolution that is now pending before Congress.

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Some pointers

- **Use Email**
Electronic submission is preferred over letters and phone calls.
- **Make Minor Edits**
While individualizing your letter is not essential, it does make your arguments more personal and compelling. It is best at least that you make minor edits to the subject line to personalize them and the first line of the text of each email.
- **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.
- **Sending Your Letter**
 - The ACS and APS sites will take you to a page where you will enter your name and address.
 - After entering your address, click **Edit/Send Email**.
 - A window with an individual email message to the four offices will appear. Click **Send Emails** to transmit your letter.