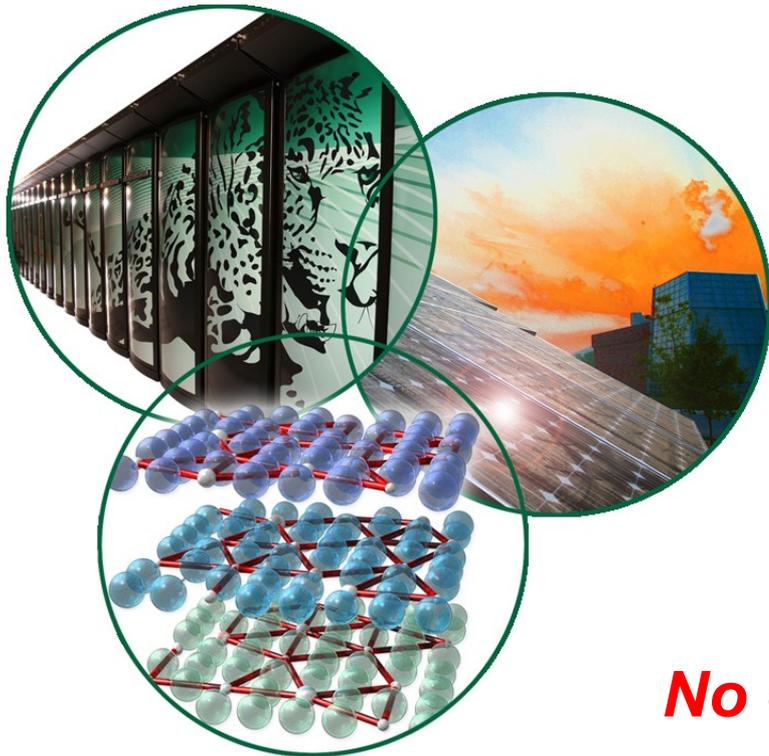


# ***Proposal Writing: Hints for maximizing your chances for getting beam time***

*(Scientists spend a lot of time writing proposals, reviewing proposals and giving presentations)*



***John Budai***

***Materials Science and Technology Division  
Oak Ridge National Laboratory***

***Bryan Chakoumakos***

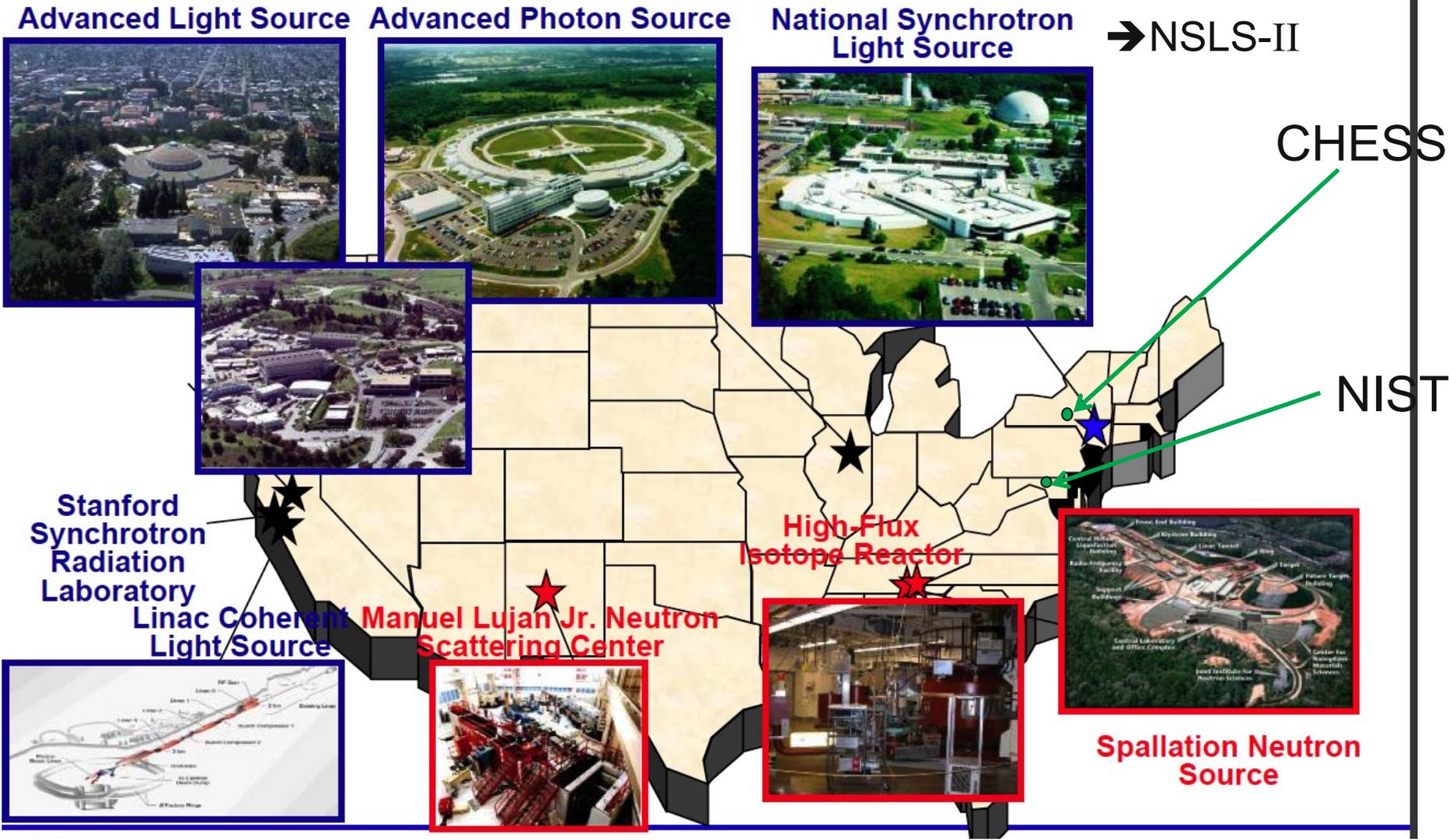
***Neutron Scattering Sciences Division  
Oak Ridge National Laboratory***

***No equations! No guitar playing.***

*Neutron X-ray Scattering School*

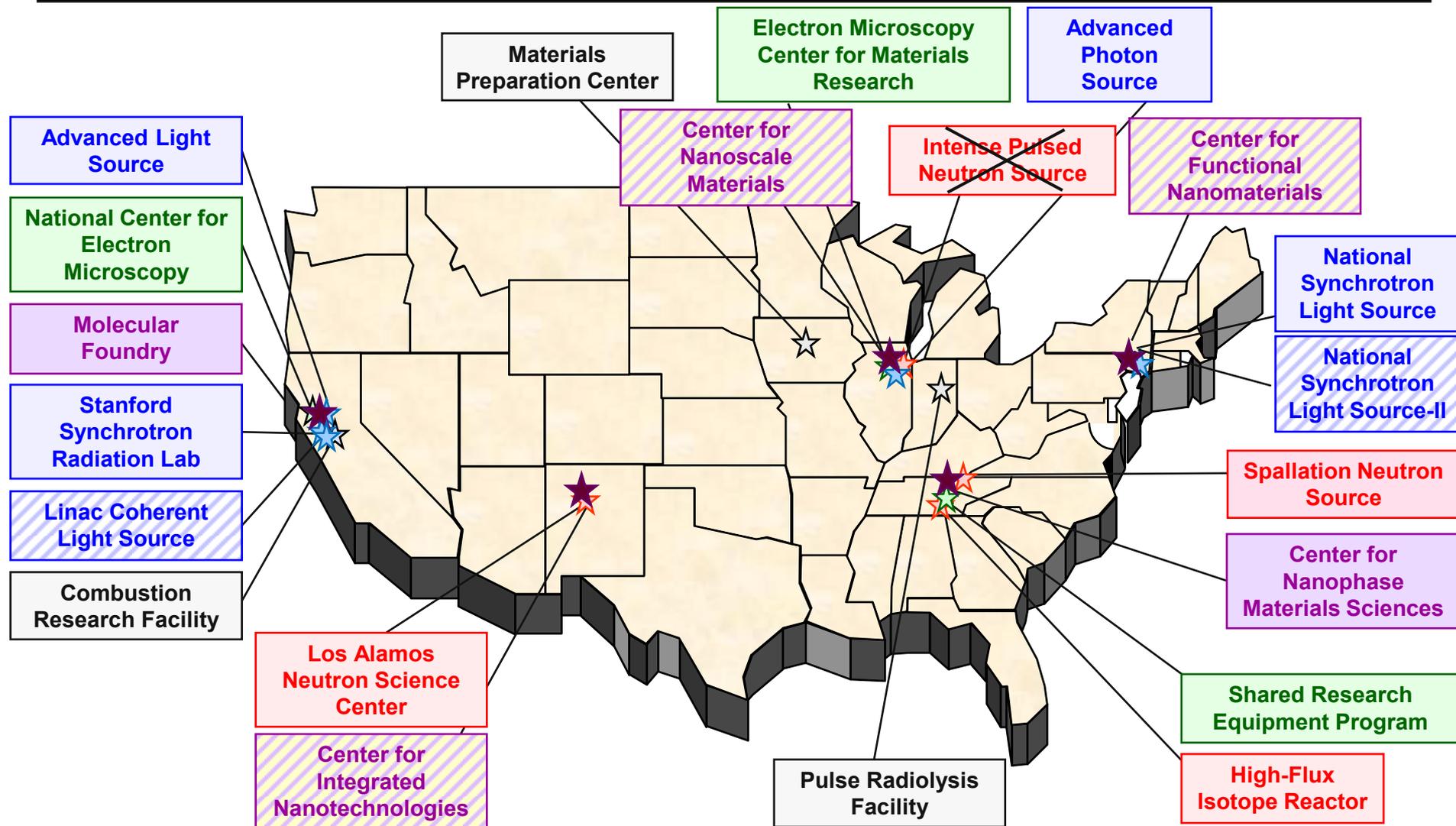
*June 25, 2010*

# DOE X-ray and Neutron Sources



Also 5 DOE Nanoscience Centers (BNL, SNL/LANL, ORNL, ANL, LBNL)  
 3 DOE Electron Microscopy Centers (ANL, LBNL, ORNL)

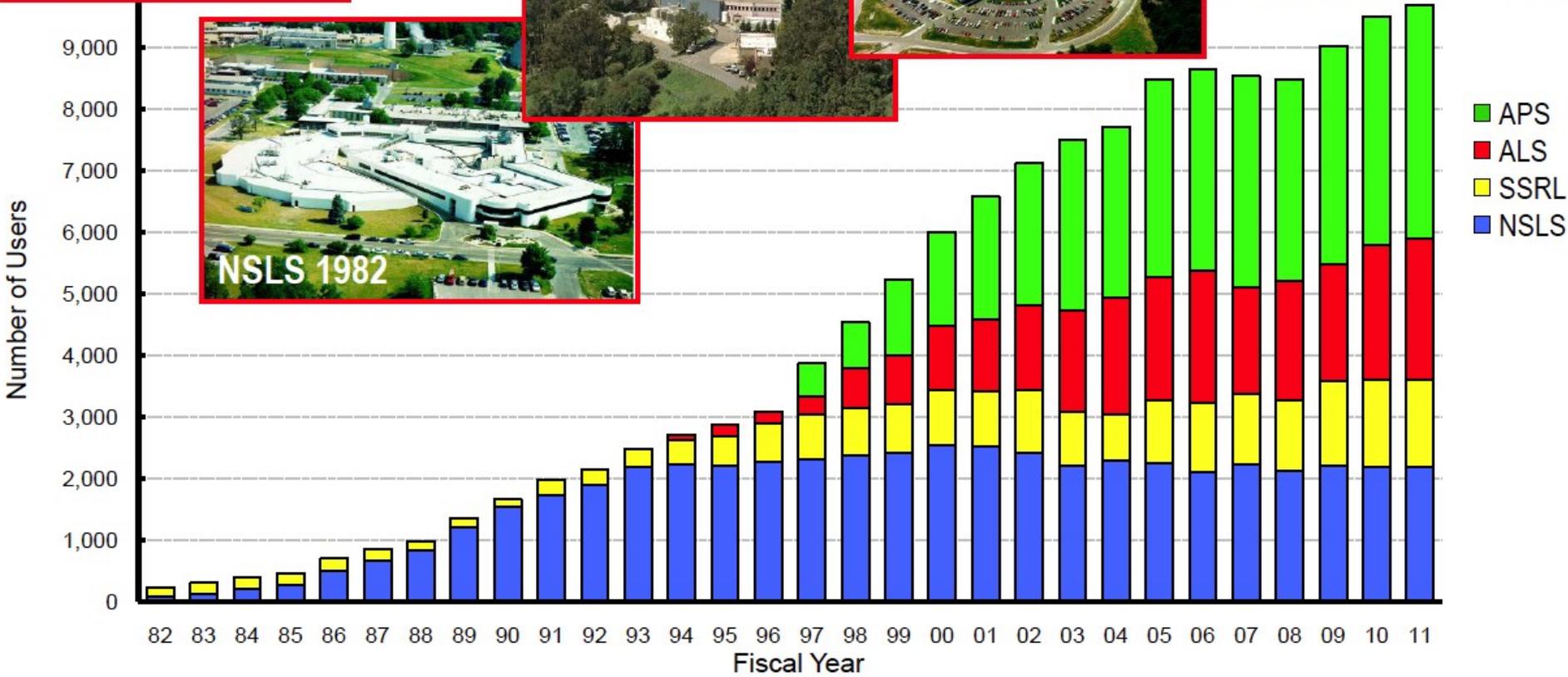
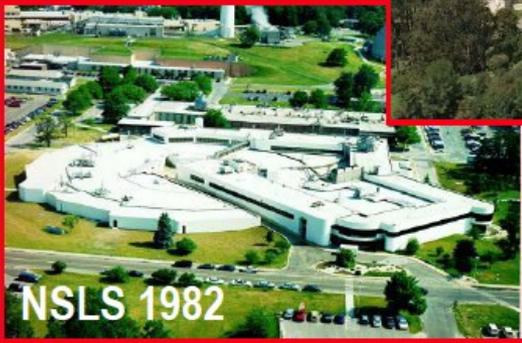
# BES Scientific User Facilities - (from Pat Dehmer presentation)



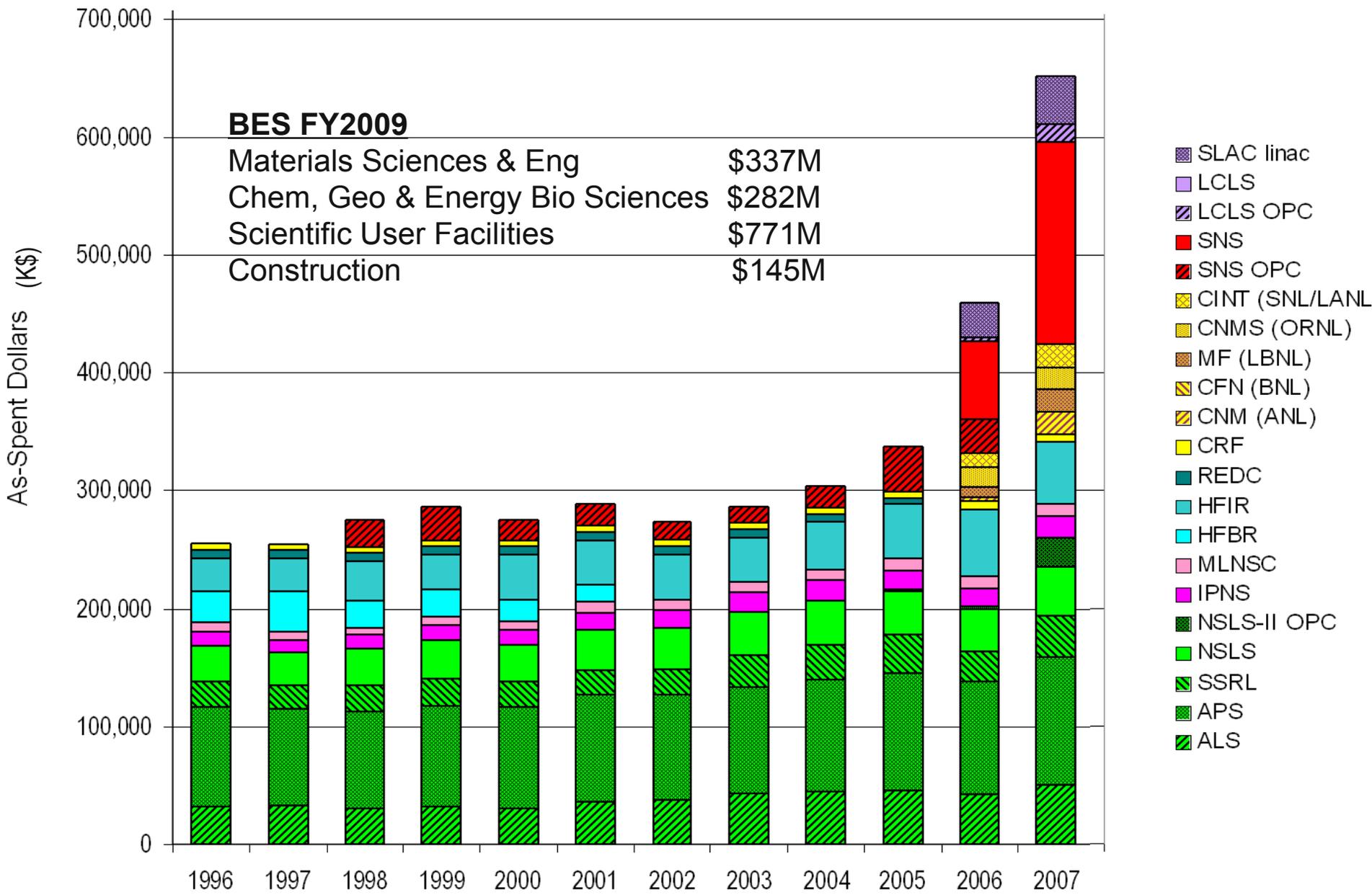
- 4 Synchrotron Radiation Light Sources
- Linac Coherent Light Source
- 4 Neutron Sources
- 3 Electron Beam Microcharacterization Centers
- 5 Nanoscale Science Research Centers
- 3 Special Purpose Centers

Also 4 Advanced Scientific Computing Centers

# The 4 BES Synchrotron Light Sources Serve Nearly 10,000 Users



# Operating Budgets for the BES Scientific User Facilities



## ***ORNL Home to 12 User Facilities***

---

- Building Technologies Research and Integration Center
- Center for Nanophase Materials Sciences (CNMS)
- Center for Structural Molecular Biology (Bio-SANS)
- High Flux Isotope Reactor (HFIR) User Facilities
- High Temperature Materials Laboratory (HTML)
- Holifield Radioactive Ion Beam User Facility (HRIBF)
- National Center for Computational Sciences
- National Transportation Research Center (NTRC)
- Oak Ridge Electron Linear Accelerator (ORELA)
- Safeguards Laboratory (SL)
- Shared Research Equipment (SHaRE) User Facility
- Spallation Neutron Source Experimental Facility (SNS)

## *Basics of the facility proposal systems*

---

- All the DOE (NIST & NSF) neutron and x-ray sources offer access to beam time through an experimental proposal system. “General Users (GU)”.
- Proposal submission is done through a web-based application. When and how often proposals are submitted varies by facility.
  - APS and NSLS three times (“cycles”) per year.
  - SNS/HFIR and ALS two times per year
- All proposals are peer-reviewed and rated, and beam time is allocated using the scores of these reviews. Once time has been allocated, the beamline staff schedule the proposals.



## *Upcoming Proposal Deadlines:*

---

### **X-ray sources**

(<http://www.lightsources.org/cms/?pid=1000336>)

APS

October 26, 2012

ALS

September 5, 2012

NSLS



NSLSII (2015)

LCLS

November 13, 2012

### **Neutron sources**

HFIR/SNS

Sept 5, 2012

LANSCÉ

NIST-NCNR

Sept 10, 2012

Note at most facilities these are hard deadlines:

APS always at Friday midnight (12:05 → next cycle)

# *Users Get Started with Assistance of the Instrument Scientists*

---

- Study instrument web pages
- Contact an Instrument Scientist to discuss your research
  - What is the research problem?
  - Which instrument(s) are appropriate?
  - How mature is the research project (risk, size)?
  - What is the material – sample composition, form, size, availability?
  - What are the experimental conditions (temperature, pressure, magnetic field, etc)?
  - What will be measured?
  - Probability of success? Impact? Significance?
  - How will results be presented and to whom?
  - What is the timeline?



## *Instrument Scientists Assist First-time and Returning Users*

---

- **Provide technical advice, guidance, and assistance**
  - Instrument options
  - Sample and experiment preparation
  - Number of experiment days
  - Logistics (scheduling, transporting and storing samples)
  - Proposal preparation tips and assistance
  - Experiment team members
  - Data analysis
  - Publication considerations

# Submitting a proposal

# Facilities have link on home page

NSLS

National Synchrotron Light Source

NSLS

NSLS Synchrotron Catalysis Consortium Receives 3-Year Funding Renewal

Next general user proposal deadline: January 31, 2009.

Call for Proposals

Recent News

Call for Publication Citations, Reviews and Indexed Lectures

Facility Updates

Chang's Corner: DOE Grant Boosts NSLS Advanced Detector Development

Safety Update: Fiscal Year 2008 Injuries

Notes from the UEC: Past and Present

Scientific Highlights

Upcoming Seminars

Upcoming Meetings & Workshops

APS

Advanced Photon Source | Argonne National Laboratory

Argonne

U.S. DEPARTMENT OF ENERGY

The Advanced Photon Source (APS) provides the brightest x-ray beams in the Western Hemisphere to more than 5,000 scientists worldwide.

LEARN about x-ray research

START become an APS user

WORK resources for users

EVENTS AND ANNOUNCEMENTS

June 25 : Friday

User Science Seminar

APS Seminar 1401-A1100 @ 12:00 PM

Superconducting Niobium Accelerator Cavity Defect Localization and Repair

APS Seminar 1203-R150 @ 1:30 PM

Reminders

SRI2010 Abstract Submission Deadline: June 28, 2010

Information for Industrial Users

Next GUP Deadline: July 9, 2010

XSD Visitor Program

APS Upgrade Project

Project Home

User Input Invited

Upgrade News

NIST

NIST Center for Neutron Research

Coming to the NCNR? Click Here.

Visa question? Log on to your NCNR-IMS account

NCNR SiteMap

About the NCNR What We Do Staff Annual Report Summer School Working at the NCNR

Facility Information Live Data Instrumentation Instrument Contacts Schedules Center for High Resolution Neutron Scattering (CHRRNS) Sample Environment Sample Prep Labs Lab Safety

User Information Planning Your Experiment Obtaining BeamTime Data Reduction/Analysis Publishing Your Results Financial Assistance Travel & Lodging NCNR User Group

Other Sites

RECENT RESEARCH HIGHLIGHTS

Neutron reflection studies of tethered membranes give insight on Alzheimer's disease.

Restacking organic semiconductors may lead to cheap and flexible electronics.

HOT PAPER! New materials for hydrogen storage undergo intense scrutiny with NCNR instruments

NEWS FOR NCNR USERS

NCNR Seminar Schedule

Pat Gallagher named NIST Deputy Director

Pat Gallagher, NCNR Director for the past four years, has been appointed NIST Deputy Director, assuming until further notice the responsibilities and duties of NIST Director. Rob Dimeo has assumed the responsibilities of NCNR Director.

CALL FOR PROPOSALS - NEW!

The next proposal deadline is November 3, 2008. Successful proposals will be allocated instrument time from January 2009 through August 2009.

We have posted some proposal statistics summarizing the last five calls.

NCNR Expansion Initiative

A significant expansion of the NCNR is underway. The project comprises development of a new cold neutron moderator, and a new guide hall with five state-of-the-art instruments. A workshop was held on July 17-19, 2006.

Major Upgrade to SANS Analysis Software

With a new user interface and calculations up to 10x faster, this new release makes

SNS  
HFIR

ORNL Neutron Sciences

STAFF | STUDENTS | INDUSTRY | COMMUNITY | VISITORS

Home | Find People | Contact Us | Site Map | Search

OAK RIDGE NATIONAL LABORATORY

NEUTRON SCIENCES

About Us Why Neutrons? Research Facilities Instruments Users Jobs News & Media Calendar

Researching a cure for Huntington's Disease

Operating Status

SNS Beam on target at ~870kW. The plan for Tuesday is Neutron Production without any interruption.

HFIR is operating at 85MW for fuel cycle 429

Upcoming Events

13 JUN Goldschmidt Conference Knoxville, TN, USA

19 JUN National School on Neutron and X-Ray Scattering Oak Ridge, TN, USA

NEWS & UPDATES USER INFO EDUCATION PUBLICATIONS

Neutron Scattering Science Call for Proposals

Thank you for submitting more than 570 proposals for the current call. The next call deadline is August 25, 2010.

Call for Proposals

Let us know what capabilities would you like to see at SNS and HFIR.

More User Information

News Feed

## *Different types of proposals allow facility flexibility*

---

Each facility has particular systems or proposal modes:

### **APS**

**GUP** - General User Proposal. A "rapid-access beamtime request" against a submitted proposal can be considered for any unallocated general user time during the current run.

**PUP** – Partner User Proposal - Groups whose work involves a greater degree of collaboration with the APS. (e.g. major new instrumentation).

**11-BM User Program** – Accepts user proposals for both on-site experiments and for the rapid-access mail-in service (~60% of user beamtime reserved for mail-in samples). Very easy – they send you capillary tubes. This capability is not obvious on the GUP website.

### **CHESS - Cornell**

**Express-Mode proposals** are for a single visit of limited duration to CHESS to perform a straight-forward experiment. Express-Mode proposals undergo a rapid on-line review process to enable users to quickly gain access to beam time.

**Feasibility Study** proposals are to test an idea or procedure at one of the CHESS stations.

### **NSLS**

#### **MAIL-IN EXAFS Service at Beamline X18B**

Prepare your samples according to their thickness guide and mount on standard holder.

Transmission mode. Charges are ~\$100/hr.

## *Different types of proposals allow facility flexibility – cont.*

---

### **NIST NCNR**

#### **MAIL-IN SAMPLES FOR POWDER DIFFRACTION**

We will accept proposals for experiments on the BT1 powder diffractometer on "mail-in" samples. That is, samples may be mailed to NCNR staff, who will execute the data collection.

#### **QUICK ACCESS PROPOSALS**

If a user feels that beam time is required very soon to carry out important measurements that cannot be delayed, a proposal may be submitted requesting expedited access. The proposal will be reviewed by the BTAC, and held to a substantially higher standard than regular proposals.

**Crystallography** is somewhat a separate, self-contained community

- A separate proposal system at APS.
- Highly automated for mail-in measurements.
- Beamtime relatively available.

# Proposal forms at SNS and APS

## SNS/HFIR

The screenshot shows the 'Create Proposal' form in Mozilla Firefox. The browser address bar shows the URL: <https://snsapp1.sns.ornl.gov/pls/eprod/tp=100:49:3910448804620322:NO>. The page title is 'Integrated Proposal Tracking System'. The main heading is 'Create a New Proposal'. The form is divided into sections: 'Base Proposal Information' and 'Abstract'. The 'Base Proposal Information' section includes fields for 'Proposal Number', 'Name', 'Date', 'User Institution', 'Proposal Title', and 'Proposal Type'. It also contains several yes/no questions regarding data collection, student theses, and hazardous materials. The 'Abstract' section has a text area with a character count of '0 of 4000'. The bottom of the page shows 'Related Proposals' and a 'Done' status.

## APS

The screenshot shows the 'General User Proposal' form in Mozilla Firefox. The browser address bar shows the URL: [https://beam.aps.anl.gov/pls/apweb/gup0001.display\\_exp?pid=792659010841428&page\\_num=1&gup\\_id=10](https://beam.aps.anl.gov/pls/apweb/gup0001.display_exp?pid=792659010841428&page_num=1&gup_id=10). The page title is 'APS - General User Proposal'. The main heading is 'APS - General User Proposal'. The form is divided into sections: 'General', 'Experimenters', 'Abstract', 'Beamtime Request', 'Questions', and 'Review Panel'. The 'General' section includes a 'Proposal Title' field and a table with columns: 'Shifts Recommended by PRP', 'Shifts Allocated by BAC or Scheduled by Beamline in current cycle', 'Shifts Used to date', and 'Shifts Remaining'. Below this are several yes/no questions regarding project status, mail-in service, macromolecular crystallography, data classification, human subjects, live animals, safety hazards, student theses, and related proposals. The 'Subject of Research' section includes checkboxes for various scientific fields. The bottom of the page shows 'Generate Report', 'Copy Proposal', 'Next Page', 'Save', and 'Submit' buttons. The 'Proposal #' is 10325. The bottom of the page shows 'Done' and 'beam.aps.anl.gov'.

Each proposal system will ask very similar questions

## Questions asked

---

- Proposal Title
- General Info (Title, Experimenters, Funding source, etc.)
- Abstract - What is the scientific importance of the proposed research?
- Why do you need the facility to do this research?
  - Neutron vs. X-rays
  - Why do you need an insertion device beamline instead of a bending magnet?
  - Spallation source vs. reactor source
  - Hard X-rays vs. Soft X-rays
- Why do you need the beam line ( and/or instrument)?
  - Particular technique or sample environment
- What previous experience / results do you have?
- Describe the proposed experiment(s), including samples and procedures.
- Justification of the amount of time requested.

# General Information

**Edit Proposal - Mozilla Firefox**

File Edit View History Bookmarks Tools Help

https://snsapp1.sns.ornl.gov/pls/xprod/f?p=100:11:3910448804620322::NO::P11\_PRP5L\_ID:1498&cs=379C651964E7D8D6B013400184A7F54

Most Visited Getting Started Latest Headlines Hotmail NetZero E-mail Argonne National Lab...

**Integrated Proposal Tracking System** PDF of IPTS-1498 Home Feedback FAQ Logout

Home Proposal Details Funding/Research Areas Facilities/Instruments Team Members Samples Scheduling Submit for Review

My Proposals > **Edit Proposal IPTS-1498**

Help

**Edit Proposal** Cancel Apply Changes

Proposition Number IPTS-1498

Status Saved for Further Editing by Applicant

Name Suzanne Te Velthuis

Email tevelthuis@anl.gov

\* Proposition Date 23-SEP-2008 15:23

\* User Institution US - Argonne National Laboratory Search

\* Proposition Title test

\* Proposition Type General User

\* Will the data collected be considered proprietary?  Yes  No

\* Will the data collected be considered classified?  Yes  No

\* Is this research required for a student's thesis?  Yes  No

\* Does this experiment involve exposure to, or use of, biological materials? Such as recombinant DNA, virus or components of a virus, a biological toxin, exposure or handling of risk group 1 or 2 microorganisms (dead or alive), select agents or toxins (dead or alive) or any other sort of biologically hazardous material, to either plants or animals.  Yes  No

\* Will human subjects or laboratory animals be used in this experiment, or does this operation involve exposure to, or handling of, human tissue or body fluids, human cells in culture or animal matter?  Yes  No

\* Will Hazardous substances, equipment, or procedure be brought to ORNL as part of this proposed experiment? If Yes, provide detailed safety procedures in proposal text.  Yes  No

\* Abstract

This is the abstract

20 or 4000

Download Template Attach Statement of Research (.pdf)

Please use the Template Provided to Prepare your Proposal.

Last Modified Date 23-SEP-2008 15:23

Done snsapp1.sns.ornl.gov

## ***Proposal: General information***

---

- Pick a good title. Specific and to the point is better than spectacular and vague.
  - Good: “XAS study of Fe valence in  $\text{CaFe}_2\text{As}_2$  under pressure ”
  - Bad: “Understanding superconductivity in iron pnictides”
- Is it thesis related? Is there a deadline?
  - Will push your proposal up if scores are close
- Fill in the abstract. Do not just upload a PDF document!
  - More work for reviewer.
- Do upload a publication from previous work (mention previous proposal).
  - Shows you made good use of beam time.
  - Do not upload a 20 pages of supplemental information (figures often help, couple of plots with text OK)

# Proposal: Experimenters page

General Experimenters Abstract Beamtime Request Questions Review Panel

Proposal : GUP-10325

Spoke person: [Find](#)

First Name :  Last Name

Phone:  Email  Badge

Institution:

Mailing Address:

Experimenters Coming to APS:

Badge	First Name	Last Name	Affiliation	Phone	Email	Delete
<a href="#">Find</a>						
<a href="#">Find</a>						
<a href="#">Find</a>						
<a href="#">Find</a>						

Experimenters Not Coming to APS:

Badge	First Name	Last Name	Affiliation	Phone	Email	Delete
<a href="#">Find</a>						
<a href="#">Find</a>						
<a href="#">Find</a>						
<a href="#">Find</a>						

Previous Page  Next Page

Pressing SAVE will allow you to save this proposal and continue to make changes. Notifications will not be sent.

Pressing SUBMIT will save this proposal AND notifications will be sent to the APS. No changes can be made thereafter.

Proposal # : 10325

- Use the “find” feature
- List everyone involved in experiment

# Experiment Description

General Experimenters Abstract Beamtime Request **Questions** Review Panel

Proposal : GUP-10325

**Please specify the funding source(s) for your proposed research:**

<input type="checkbox"/> DOD (specify)	<input type="checkbox"/> DOE, Office of Basic Energy Sciences	<input type="checkbox"/> DOE, Office of Biological and Environmental Research
<input type="checkbox"/> DOE, Other (specify)	<input type="checkbox"/> Foreign (specify)	<input type="checkbox"/> HHIH
<input type="checkbox"/> Howard Hughes Medical Institute (HHMI)	<input type="checkbox"/> Industry	<input type="checkbox"/> NASA
<input type="checkbox"/> NIH	<input type="checkbox"/> NSF	<input type="checkbox"/> Other U.S. Government
<input type="checkbox"/> USDA	<input type="checkbox"/> Other (specify)	<b>Specify Other:</b> <input type="text"/>

**What is the scientific or technical purpose and importance of the proposed research? (limit : 500 words)** ←

**Why do you need the APS for this research? (limit : 100 words)**

**Why do you need the beamline you have chosen? (limit : 100 words)**

Note guidance.  
Don't write one sentence or 1000 words.

## Experimental Details

---

- Give background information why it is important.
  - Science at facilities is very diverse. Reviewer is not necessarily an expert on your subject.
  - @ APS each committee gets ~60 proposals each cycle (~700 total/cycle)
- Clearly state what you want to measure and how
  - Give details. Temperature range, X-ray Energy, Sample geometry
  - What sample characterization has been done already? (XRD, SEM, etc.)
  - Reviewer needs to judge if experiment is feasible
    - *Does x-ray energy match laser penetration depth*
    - *% of dilute atoms OK for fluorescence measurements*
- Why use x-rays or neutrons?
  - Neutron vs. X-rays
  - TEM, Mössbauer, Laser Raman, etc.
- Justify the amount of beam time requested (ask instrument scientist!)

# Beamtime Request

- Proposals are valid for two years, but need to put in beamtime request each cycle.
- Chose multiple beamlines.
  - SAXS (12-ID, 5-ID, 15-ID)
  - XAFS (20-BM, 10-ID, 12-BM)
  - General Diffraction
- Don't list only one week that you can come. Holidays?
- Special sample environment / detectors will place more constraints on schedule.
  - GE amorphous Si detector
  - Magnet
  - ....

# Ratings for APS Proposals

Table 1. Definition of Ratings Used in Reviewing General User Proposals

1 - Extraordinary	The proposal involves highly innovative research of great scientific importance. Proposed research will significantly advance knowledge in a specific field or scientific discipline. Considerable societal relevance is demonstrated. The radiation characteristics of the APS are highly desirable for the success of the proposed work.
2 - Excellent	The proposed research is of high quality and has potential for making an important contribution to a specific field or scientific discipline. The work is cutting edge and is likely to be published in a leading scientific journal. The radiation characteristics of the APS are important to the success of the proposed work.
3 - Good	The proposed research is near cutting-edge and likely to produce publishable results. Impact on a specific field or scientific discipline is likely. Synchrotron radiation is essential to accomplish the intended goals of the research. The proposed work will greatly benefit from access to the APS.
4 - Fair	The proposed research is interesting but may not significantly impact a specific field or scientific discipline. Publication may or may not result from this research. Synchrotron radiation is required, but the proposed work could be performed at other facilities.
5 - Poor	The proposed research is not well planned or is not feasible. Results would not make important contributions to fundamental or applied understanding, and work is not likely to result in publication. The need for synchrotron radiation is not clear.

APS proposals are rated on a scale from 1 to 5

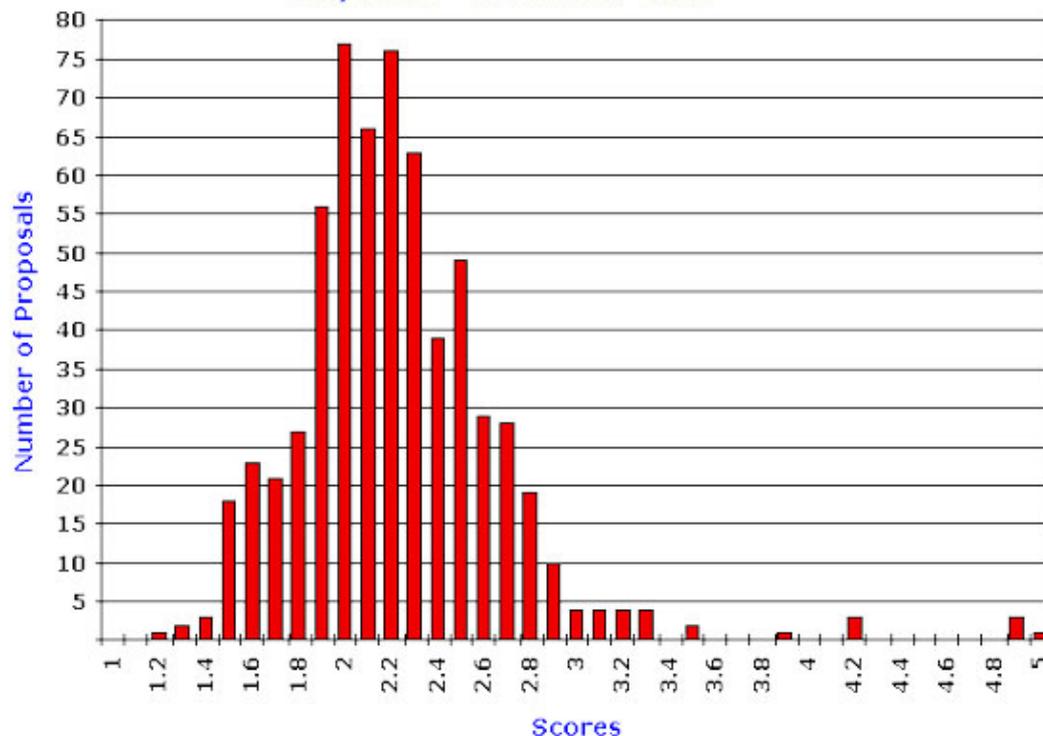
Average score is ~2.2

Cut off score for receiving beam time varies by beamline (1.5 - 2.2)

Proposal “**ageing**” (score improves by 0.2 each cycle it does not receive time). This is needed for getting time at some oversubscribed beamlines, so long-term planning is needed. But you have to remember to request beamtime again for every cycle.

# ALS provides cutoff scores – Helps you know what to expect

Distribution of Proposal Scores for General Science Proposals  
All Beamlines  
July 2010 - December 2010



Beamline	Cutoff Score	
1.4 (IR)	2.70	easier
4.0.2 (EPU)	1.90	
5.3.2 (Polymers XAFS)	2.32	
6.0.1 (Femtosecond)	--	
6.0.2 (Femtosecond)	2.22	
6.1.2 (Soft X-Ray Microscopy)	2.40	
6.3.1 (Materials Sciences)	--	
6.3.2 (Calibration and Standards)	3.90	easier
7.0.1 (XPS, STXM, SXF, SPEM)	2.03	
7.3.3 (SAXS)	2.14	
8.0.1 (SXF)	2.14	
8.3.2	2.50	
9.0.2 (Chemical Dynamics, Coherent Imaging)	2.32	
9.3.1 (XAMS)	--	
9.3.2 (APSD/AMC, High-Pressure XPS)	2.04	
10.0.1. (HERS/AMO)	2.23	
10.3.2 (Micro XAFS)	2.20	
11.0.1 (Magnetic Microscopy, Spectromicroscopy; PEEM3)	2.43	
11.0.2 (Molecular Environmental Sciences)	1.78	harder
11.3.1 (Small Molecule Crystallography)	2.58	
12.0 (ARPES)	2.12	
12.2.2 (High Pressure)	2.29	
12.3.2	2.53	
*Total allocation		

## Tips

---

- Give a concise explanation of this specific proposal
  - Provide background on importance (i.e., “bigger picture”)
  - State clearly and exactly what you are going to measure and why.
    - *Reviewer want so assess likelihood of success.*
- Include relevant details to experiment but do not get too verbose
  - Reviewer needs to judge not only scientific importance, but also if the experiment is feasible and if you are asking for the right instrument.
- If you are a first time user, talk to the local contact/instrument scientist.
  - Find out about details of the instrument, typical measuring times...
  - Over-subscription rate? Can a less popular instrument do the same measurements?
  - Send them the proposal ahead of time and ask for advice.  
Collaborate?
- If you have previous results from other experiments include them!
  - Home, other institution, previous experiment.
  - Sample characterization.
- Take advantage of proposal ageing. **Plan ahead!**

## ***Several common pitfalls***

---

- Proposer assumes committee is familiar with their specialty.
- Proposer writes large general proposal asking for multiple weeks of time. Better to write a shorter proposal with a well defined objective. Be realistic with beam time request.
- Proposal deadline (for next cycle) is before scheduled beam time this cycle.

### ***Common Reviewer comments:***

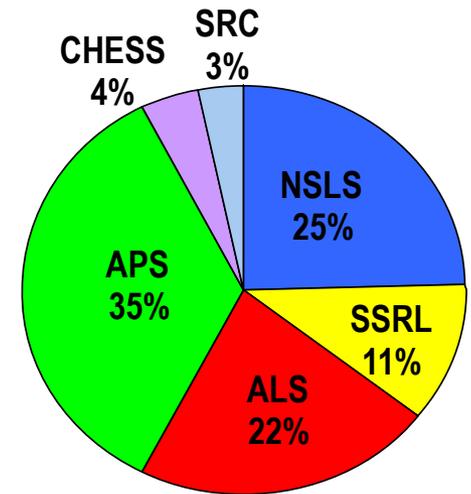
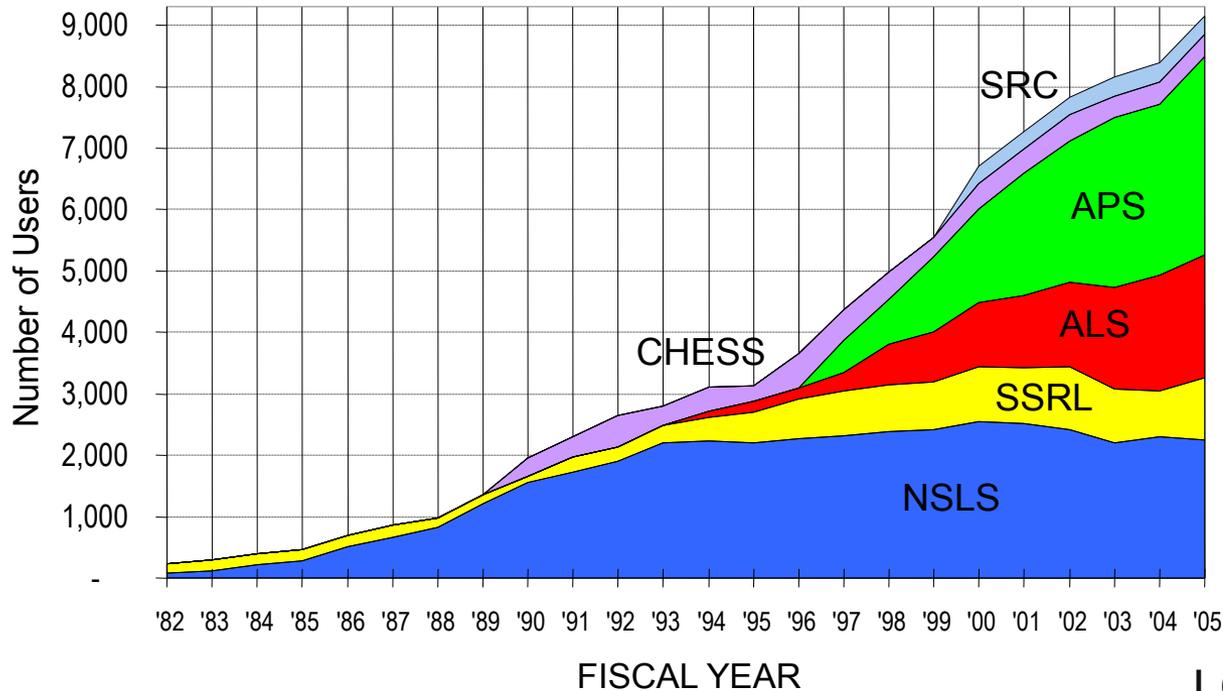
- “Proposers could improve their score by including more experimental details, attaching previous results and expanding on the purpose and importance of the research.”
- “Hasn't the proposed research been published previously?”
- “We do not feel that granting 20 shifts/cycle for 2 years is consistent with the history of publication of this work.”
- “Proposer should perform initial characterization with lab sources or TEM.”

## *After submission*

---

- Allow time for review and revisions
- Expect feedback several weeks from the call close
- Be ready to schedule experiment if approved
  - Identify participating team members
  - Respond to facility access approval information
  - Facilitate execution of user agreements
  - Complete required training
  - Confirm sample availability and description and laboratory needs
- Consider reviewer comments if not approved and plan to resubmit this proposal or a new proposal in the next call. Opportunities (# of facilities and beamlines/facility) continue to grow.

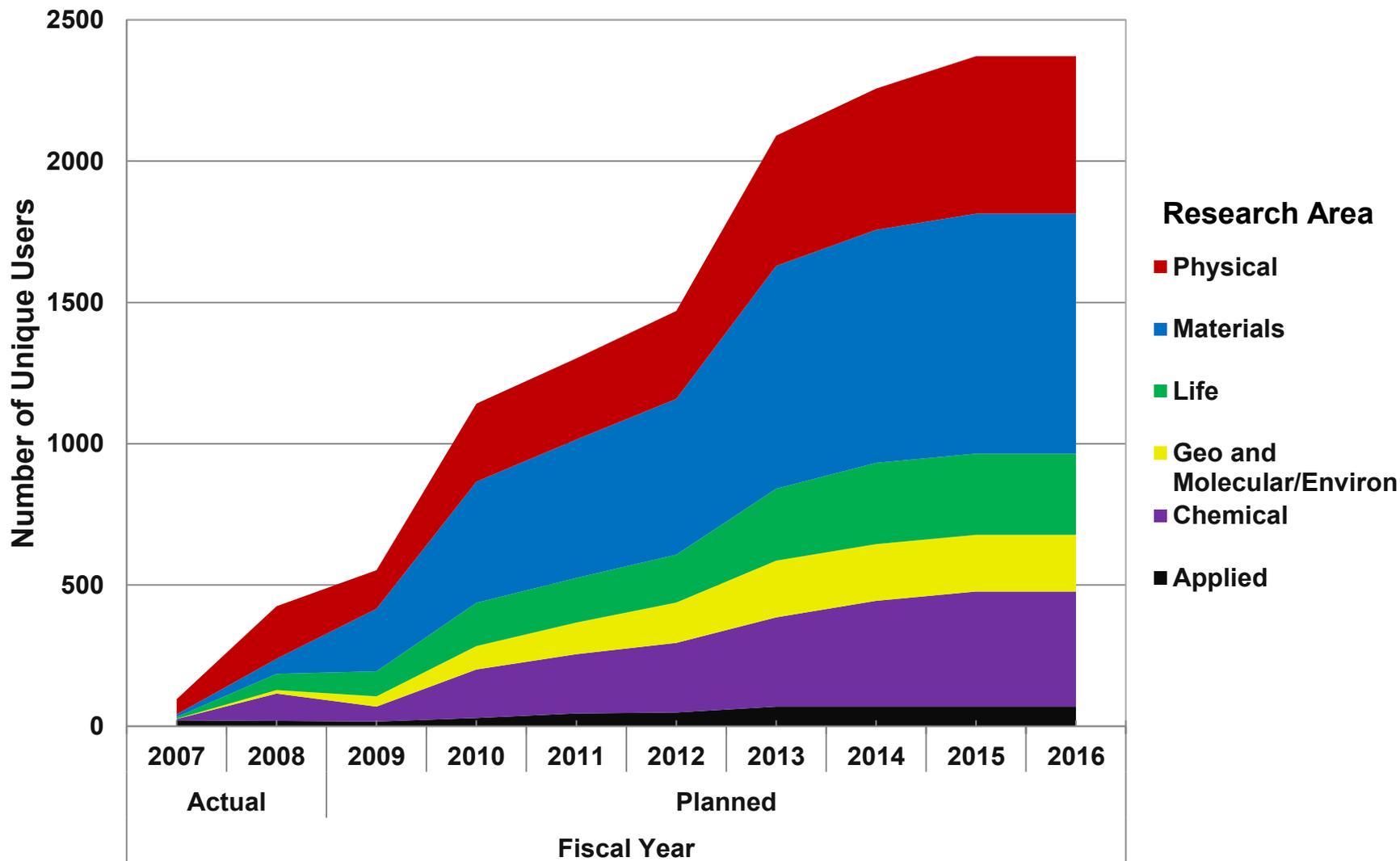
## The 6 Federally Funded U.S. Light Sources Hosted 9,159 Users in FY 2005



LCLS operating  
NSLS-II under construction.

The size and demographics of the user community have changed dramatically since the 1980s when only a few hundred intrepid users visited the synchrotron light sources each year. Here, “user” is a researcher who proposes and conducts peer-reviewed experiments at a scientific facility or conducts experiments at the facility remotely. A user does not include individuals who only send samples to be analyzed, pay to have services performed, or visit the facility for tours or educational purposes. Users also do not include researchers who collaborate on the proposal or subsequent research paper but do not conduct experiments at the facility. For annual totals, an individual is counted as 1 user at a particular facility no matter how often or how long the researcher conducts experiments at the facility during the year.

# Neutron User Community and Research Opportunities Growing



## *Join SNS HFIR User Group (SHUG)*

---

- Chartered 1998
- Open to individuals interested in using SNS and HFIR
- Provides input to management on user concerns
- Serves as a forum for keeping the user community informed
- Acts as an advocacy group for neutron scattering science



# ORNL's Neutron Scattering Facilities

## HFIR and SNS

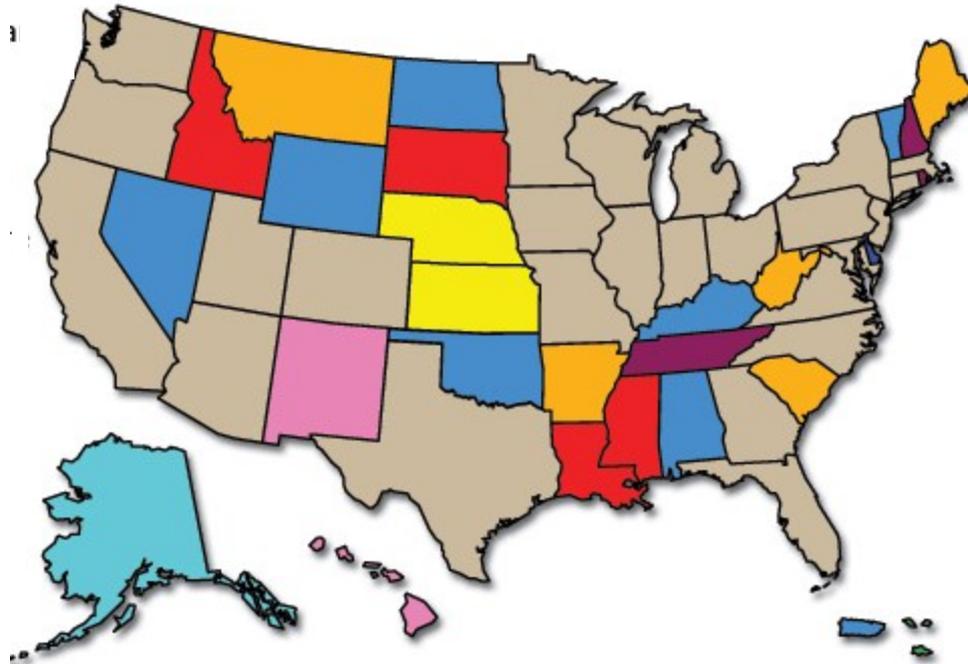
---

- Numerous opportunities for collaboration
  - Become a user
  - Join SNS/HFIR User Group (SHUG)
  - Have your friends and colleagues apply to the National School on Neutron and X-ray Scattering
  - Attend workshops and conferences
  - Seek EPSCoR grants
    - <http://www.nsf.gov/div/index.jsp?org=EPSC> and
    - <http://www.sc.doe.gov/BES/EPSCoR/about.html>
  - Promote ORISE internships, fellowships, and research participation programs <http://orise.ornl.gov/sep/index.htm>
  - Bring student groups to ORNL
  - Invite ORNL scientists to your campus

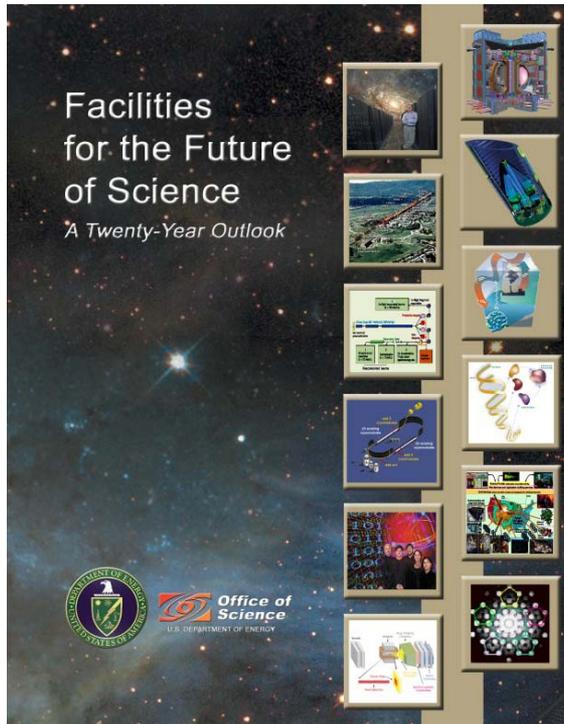
## Seek EPSCoR Grants

---

- EPSCoR State Institutions are eligible for grants to support research
  - <http://www.nsf.gov/div/index.jsp?org=EPSC>
  - <http://www.sc.doe.gov/BES/EPSCoR/about.html>
- Travel support for users from UT-ORNL Joint Institute for Neutron Sciences (JINS). Contact Takeshi Egami at [egami@utk.edu](mailto:egami@utk.edu)



# Scientific User Facilities – (mostly from Pat Dehmer presentation 2007)



BESAC evaluation February 2003  
Report released late 2003

Available at  
[www.science.energy.gov/bes/archives/plans/FFS\\_10NOV03.pdf](http://www.science.energy.gov/bes/archives/plans/FFS_10NOV03.pdf)

- Under construction at the time of the evaluation
  - Spallation Neutron Source *operating*
  - 5 Nanoscale Science Research Centers *operating*
  - SSRL (SPEAR3) upgrade *operating*
- Facilities underway since the evaluation
  - Transmission Electron Aberration Corrected Microscope *operating*
  - Linac Coherent Light Source *~ operating*
  - National Synchrotron Light Source - II *construction*
- Facilities rated longer-term priority at the time of the evaluation
  - Spallation Neutron Source power upgrade (CD-0 signed)

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  - Spallation Neutron Source 2<sup>nd</sup> target station
  - Advanced Light Source upgrade
  - Advanced Photon Source upgrade *CD-? signed*
- What's next in our planning?
  - Future Science Needs and Opportunities for Electron Scattering: Next-Generation Instrumentation and Beyond, March 1-2, 2007
  - BESAC Future Science Needs and Opportunities for Light Sources, 2007

**Impact of large Scientific User Facilities has grown significantly in the past ~25 yrs. They now represent more than 50% of BES budget and growth will likely continue. They enable powerful new techniques, but researchers (you) have to do the science.**

# Office of Science Early Career Research Program

*Investment in FY 2011 will bring 60 new scientists into the program*

**\$16 million requested in FY 2011 to fund about 60 additional Early Career Research Program awards at universities and DOE national laboratories.**

**Purpose:** To support individual research programs of outstanding scientists early in their careers and to stimulate research careers in the disciplines supported by the Office of Science

**Eligibility:** Within 10 years of receiving a Ph.D., either untenured academic assistant professors on the tenure track or full-time DOE national lab employees

**Award Size:**

- University grants \$150,000 per year for 5 years to cover summer salary and expenses
- National lab awards \$500,000 per year for five years to cover full salary and expenses

**FY 2010 Results:**

- 69 awards funded via the American Recovery and Reinvestment Act
- 1,750 proposals peer reviewed to select the awardees
- 47 university grants and 22 DOE national laboratory awards
- Awardees are from 44 separate institutions in 20 states

**FY 2011 Application Process:**

- Funding Opportunity Announcement issued in Spring 2010
- Awards made in the Second Quarter of 2011

[http://www.science.doe.gov/SC-2/early\\_career.htm](http://www.science.doe.gov/SC-2/early_career.htm)