

APS/Users Monthly Operations Meeting

B. Stephenson

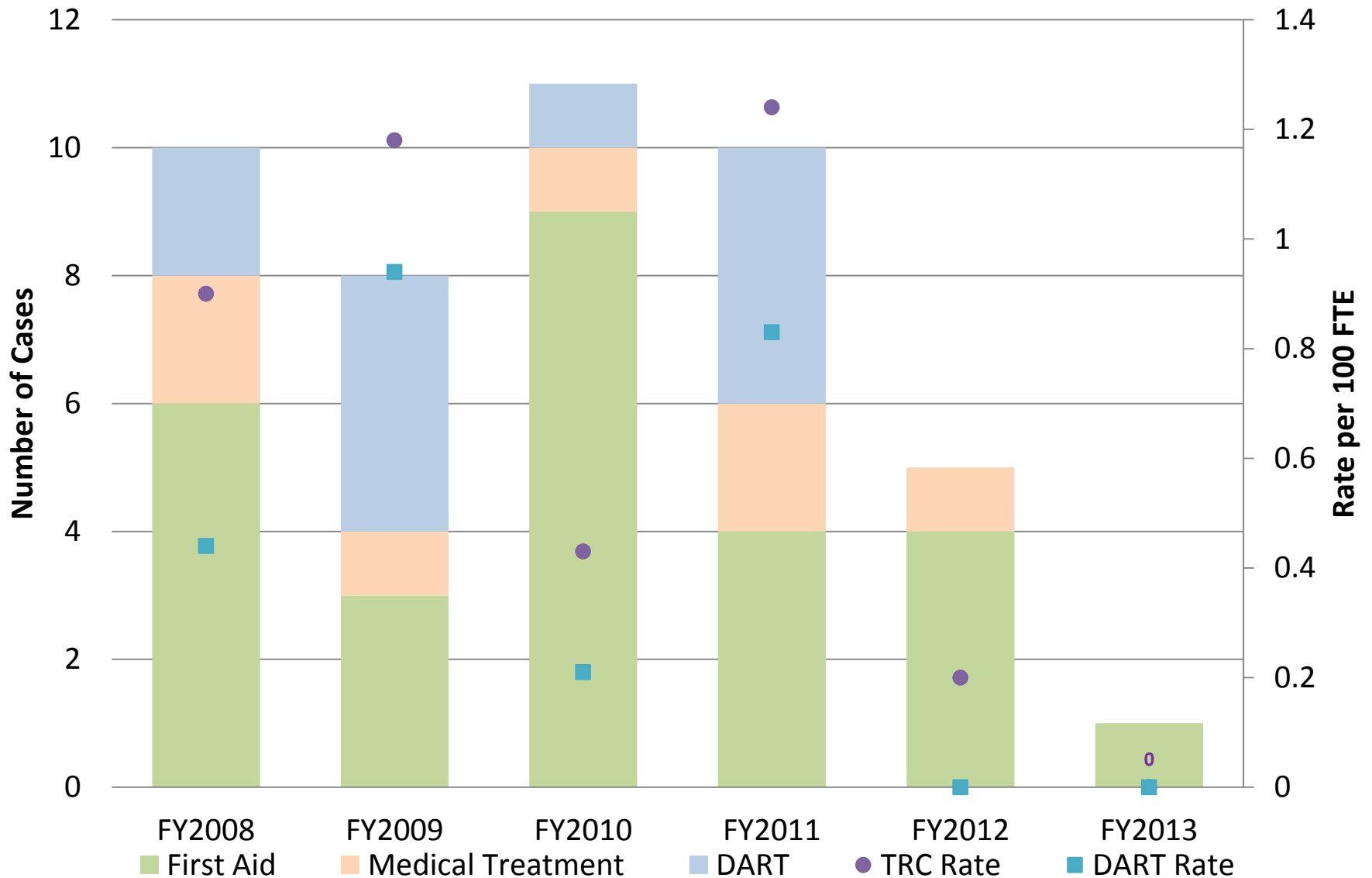
December 19, 2012

Agenda

- APS Update – Brian Stephenson
 - Safety
 - User Survey
 - Awards
- APS Upgrade Update – George Srajer
- The Evolution of the SAXS/WAXS Vacuum Chamber at 12ID-B
-- Byeongdu Lee



APS Injury Types and TRC/DART Rate FY2008-13



LUJAN Center Contamination - Basics

- The Los Alamos Neutron Science Center (LANSCE) Lujan Neutron Scattering Center (Lujan Center) has been shutdown since August 25, 2012, due to Tc-99 contamination
- Contamination was spread within and outside the Lujan Center, including offsite of LANL
 - 256 employees were screened
 - 25 employees with clothing contamination
 - 5 employees seen with skin contamination up to 20000 dpm/cm² (*10000 dpm skin contact delivers 0.2 mrem/hr*)
 - 36 locations external to the Lab surveyed by the RAP teams
- Contamination originated from a tungsten powder sample that had been placed in a sample holder which had previously contained a Tc-99 bearing chemical sample



LUJAN Center Contamination - Background

- Source eventually traced to one of three samples shipped to Lujan Center in 2010
 - Two samples run in late 2010
 - Third sample not run until January 2012 (*this sample was the source*)
- The Lutetium Technetate sample massed about 405 mg and contained about 168 mg Tc-99 (*around 2.3 mCi*)
- Lujan person who mounted the third sample had not been previously involved and was not aware the sample was radioactive



LUJAN Center Contamination - Sample Holder

- Sample holder was not marked with any radiation symbol
- “Lu” was written on holder with a Sharpie
- Holder was a Vanadium cylinder with flanged lid
- Vanadium holders were reused to avoid cost of purchasing new containers (≈\$500 each)
- Parts were kept in a supply cabinet and holders assembled as needed
- Poor control and housekeeping of parts – relied on knowledge of researchers and staff



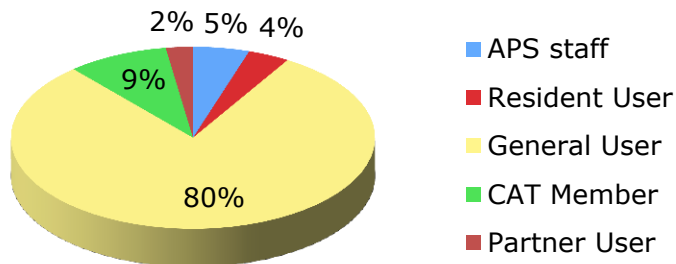
LUJAN Center Contamination - Findings

- Federal Accident Investigation was conducted in September 2012
- Root cause determined to be:
Lujan Center management did not ensure development and implementation of sufficiently rigorous formality of operations and quality assurance programs for the handling of radioactive and toxic samples.
- Reached 25 formal “Conclusions” (deficiencies)
- Identified 14 Judgment of Needs (JONs - what Lujan management must fix)
- Lujan management must develop and implement a corrective action plan addressing the 14 JONs

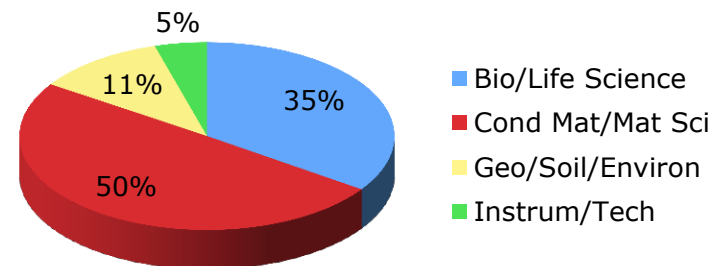


FY12 User Survey - Demographics of Users Responding

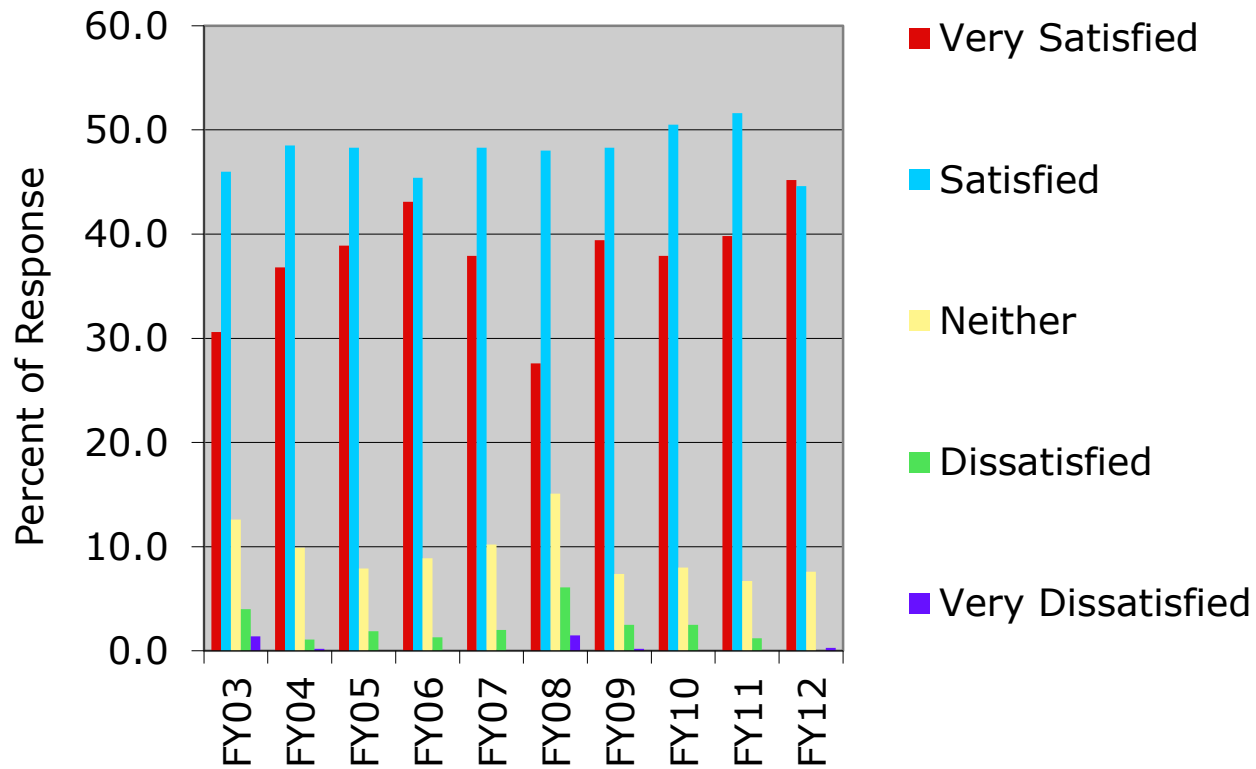
FY12 Respondents Affiliation



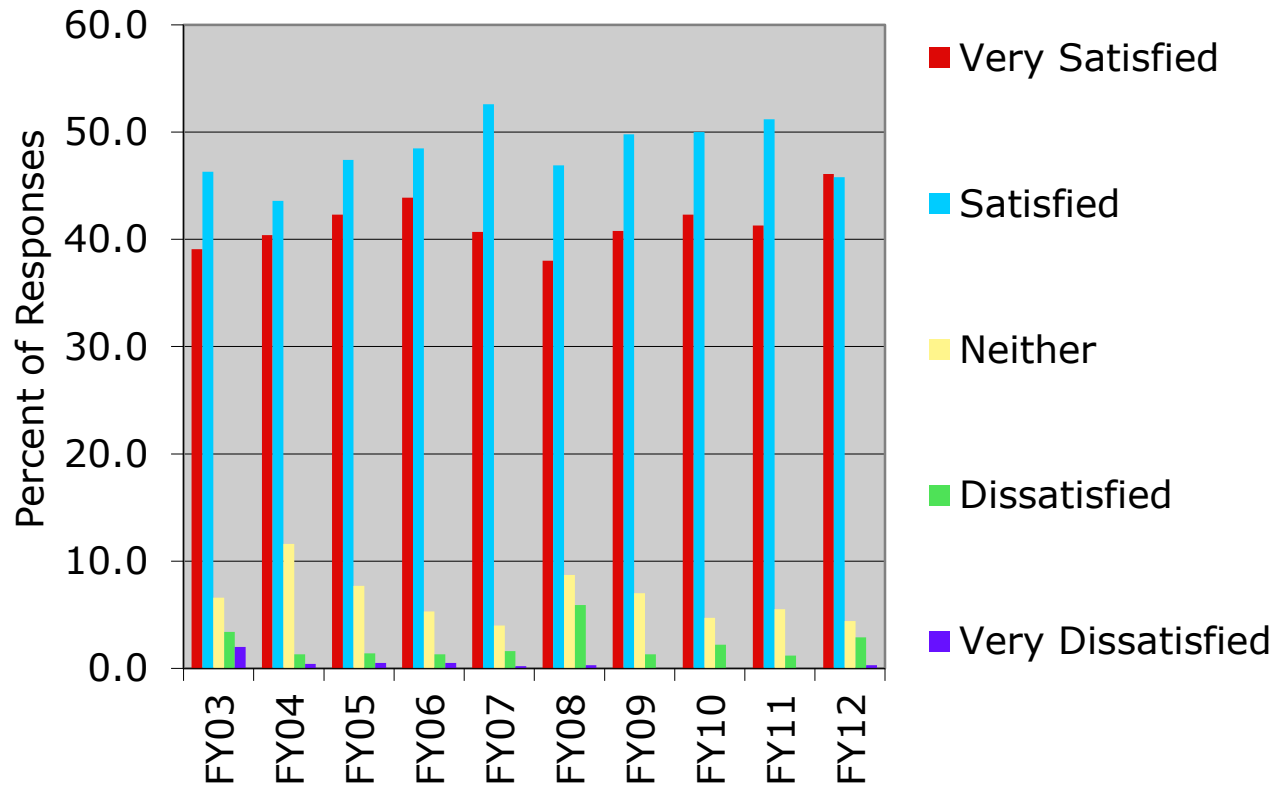
FY12 Respondents Field of Research



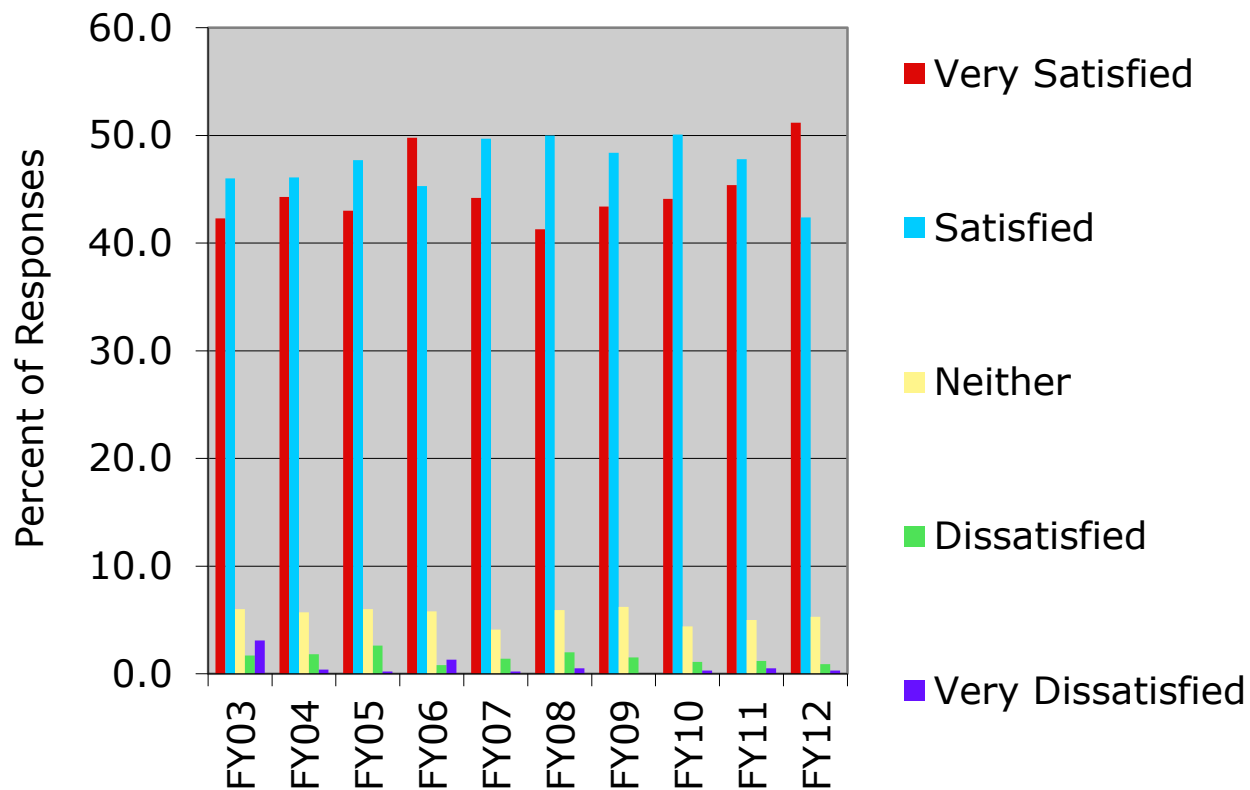
1. How satisfied were you with the fraction of the year that the facility operates?



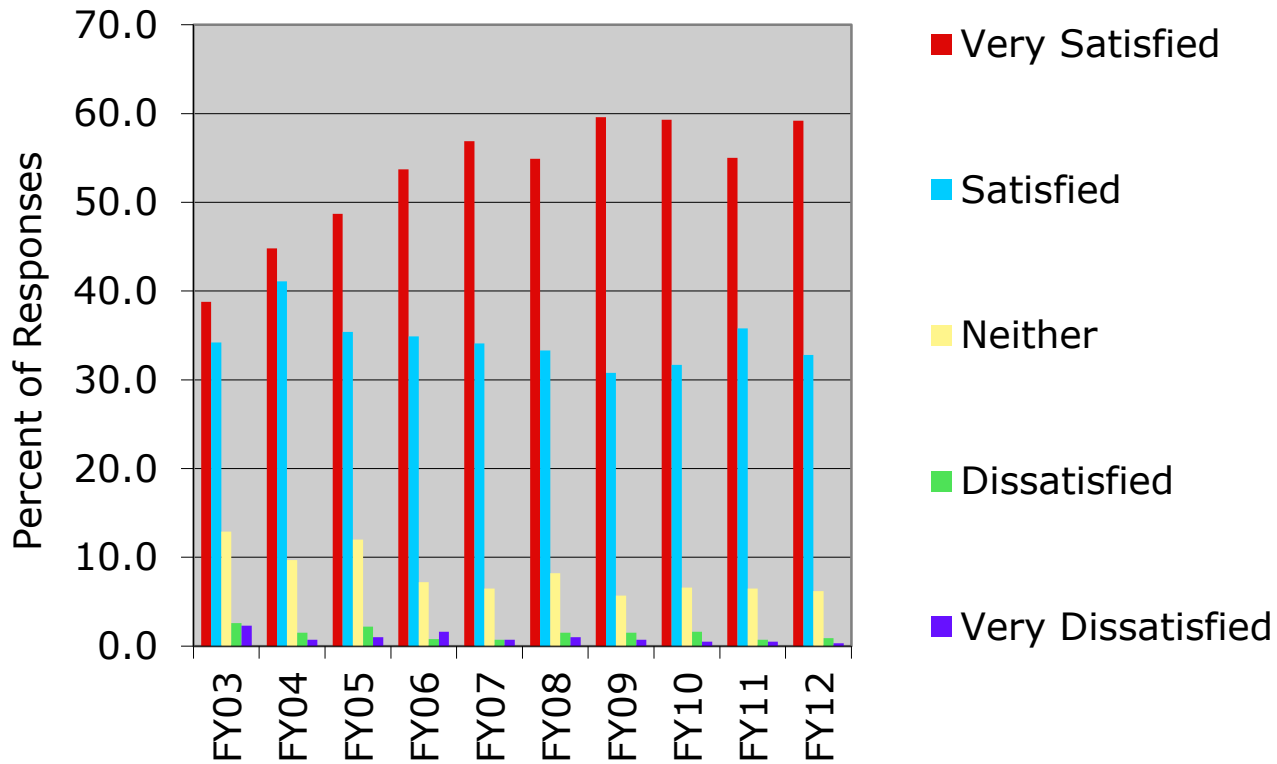
2. How satisfied were you with the schedule or service?



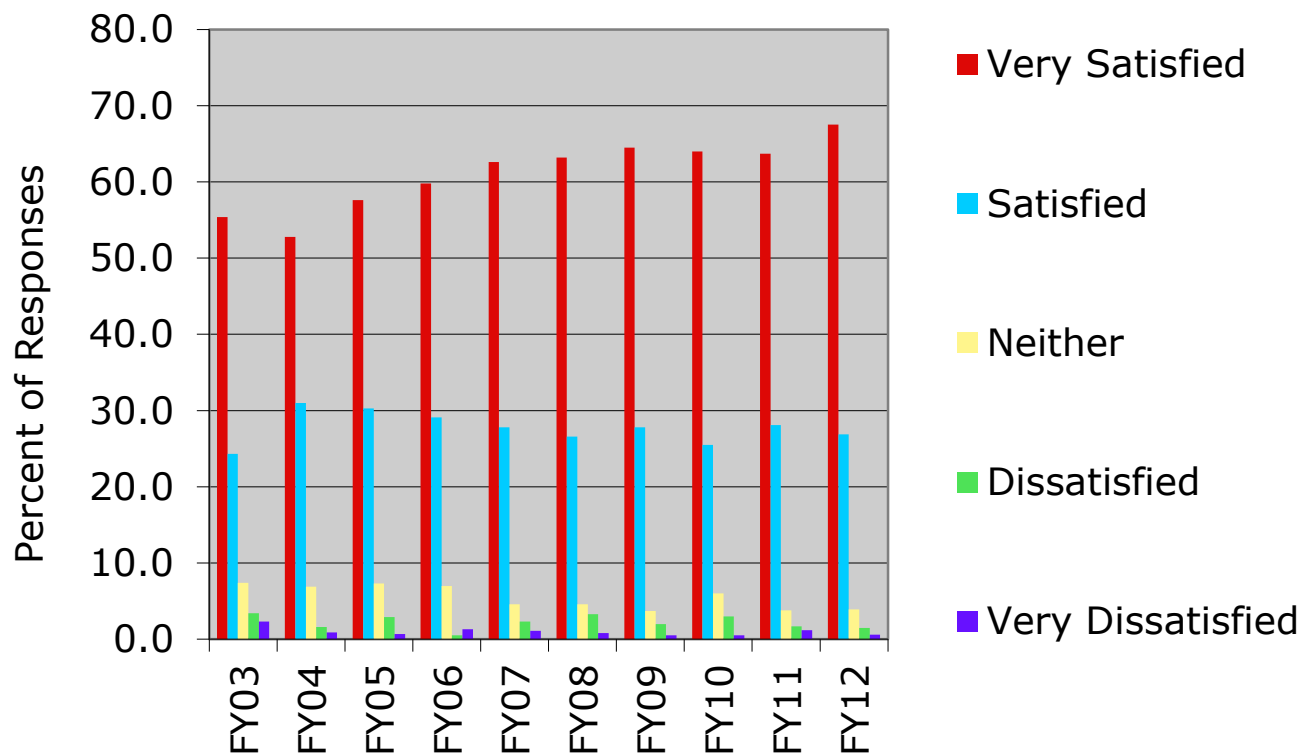
3. How satisfied were you with the performance?



4a. How satisfied were you with the support for users provided by the facility staff?



4b. How satisfied were you with the support for users provided by the beamline staff?



Opportunities for Improvement

- Better food options for users working over weekend and holidays (401 grill is terrible) and more healthy/vegetarian options.
- Better cell phone reception for AT&T customers. Buy new mattresses for the Guest House.
- Improved data collection and handling.
 - Access to central data storage and computing facilities could be improved.
 - Improved data acquisition software, remote data collection.
 - Support data analysis and post-experimental processing of data - it is the big lag for us and the hardest thing about working at APS compared to other synchrotron facilities.
 - I wish there was more assistance in interpretation of data - not a complete data work up process, but staff available to start us on interpreting our data.
 - Offer more short courses or other training opportunities, especially regarding data analysis.
- More streamlined procedure for connecting computers and new instrumentation to the local beamline networks.
- Training feels a little excessive. It might be better to streamline, with emphasis placed on the most serious topics.



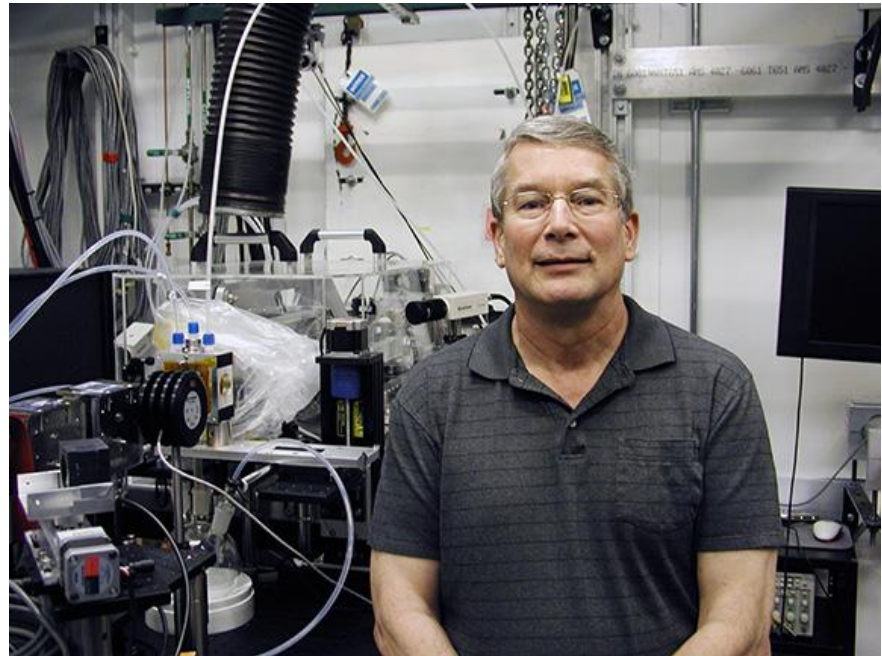
Some Kudos

- Zhonghou Cai was the best beamline scientist I have worked with at the APS. He was very professional and extremely helpful to us both leading up to the experiment and during our beamtime.
- BioCAT is a wonderful instrument to use.
- APS-33ID-E is well designed and really thoughtful in its function for multi-functional experiments, such as surface x-ray diffraction, x-ray reflection, resonant x-ray diffraction. It is now able to perform oxide thin film growth and real-time measurement.
- Sector 20 continues to be the best beamline I've used for conducting experiments.
- I look forward to continued research with the people of 13-ID. They continue to produce amazing results and new avenues of scientific research into Earth materials.



Steven Southworth Elected to APS Fellowship

- X-ray Science Division Senior Scientist Stephen Southworth has been named a Fellow of the American Physical Society, an honor limited to no more than one-half of one percent of the society's membership of more than 50,000.
- Southworth is recognized for "pioneering the development of atomic and molecular spectroscopies with 3rd and 4th generation light sources including such new effects as higher multipole asymmetries, double K-shell photoionization, and femtosecond electronic response of atoms to ultra-intense x-rays."



Steve Southworth