APS/Users Monthly Operations Meeting

B. Stephenson

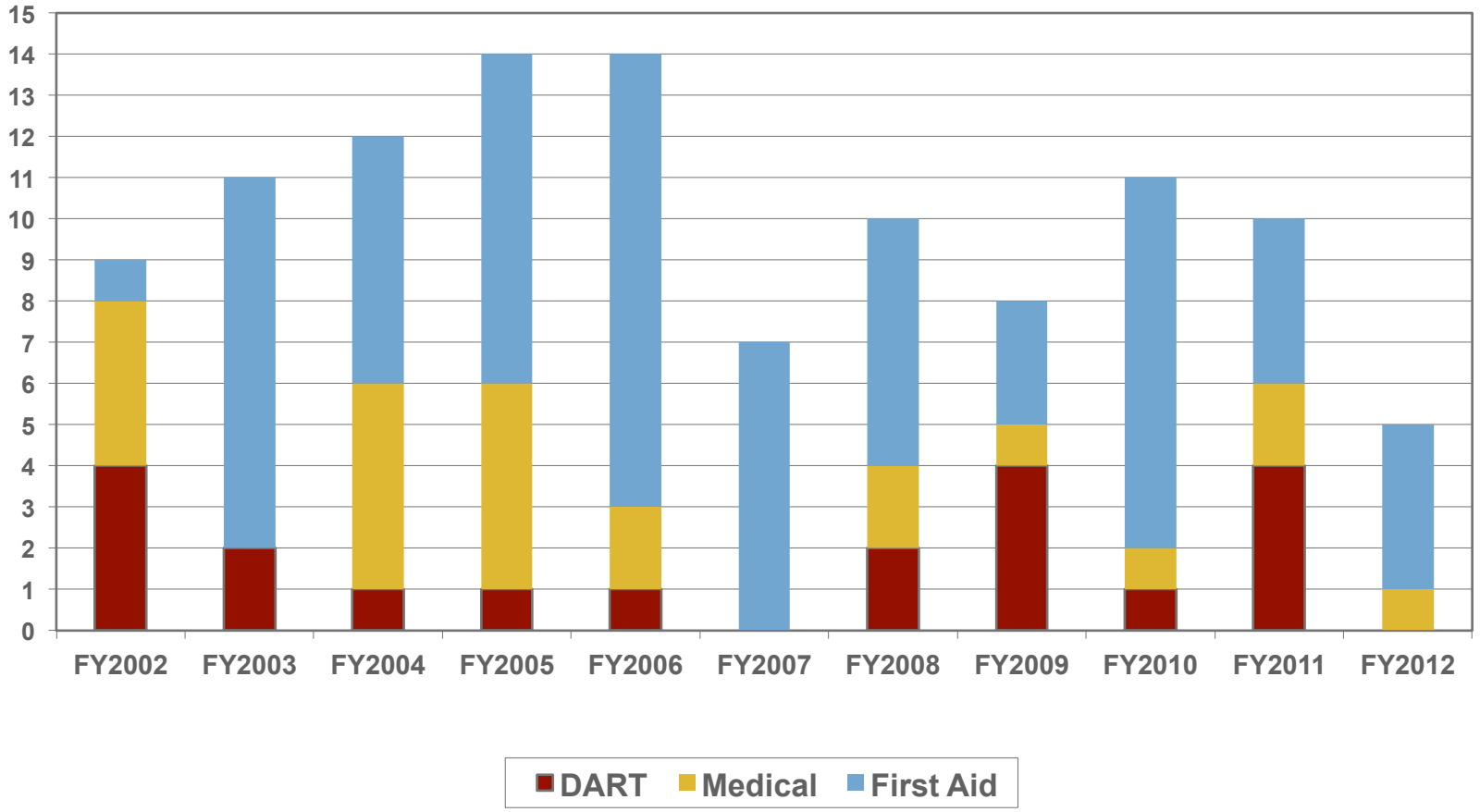
October 31, 2012

Agenda

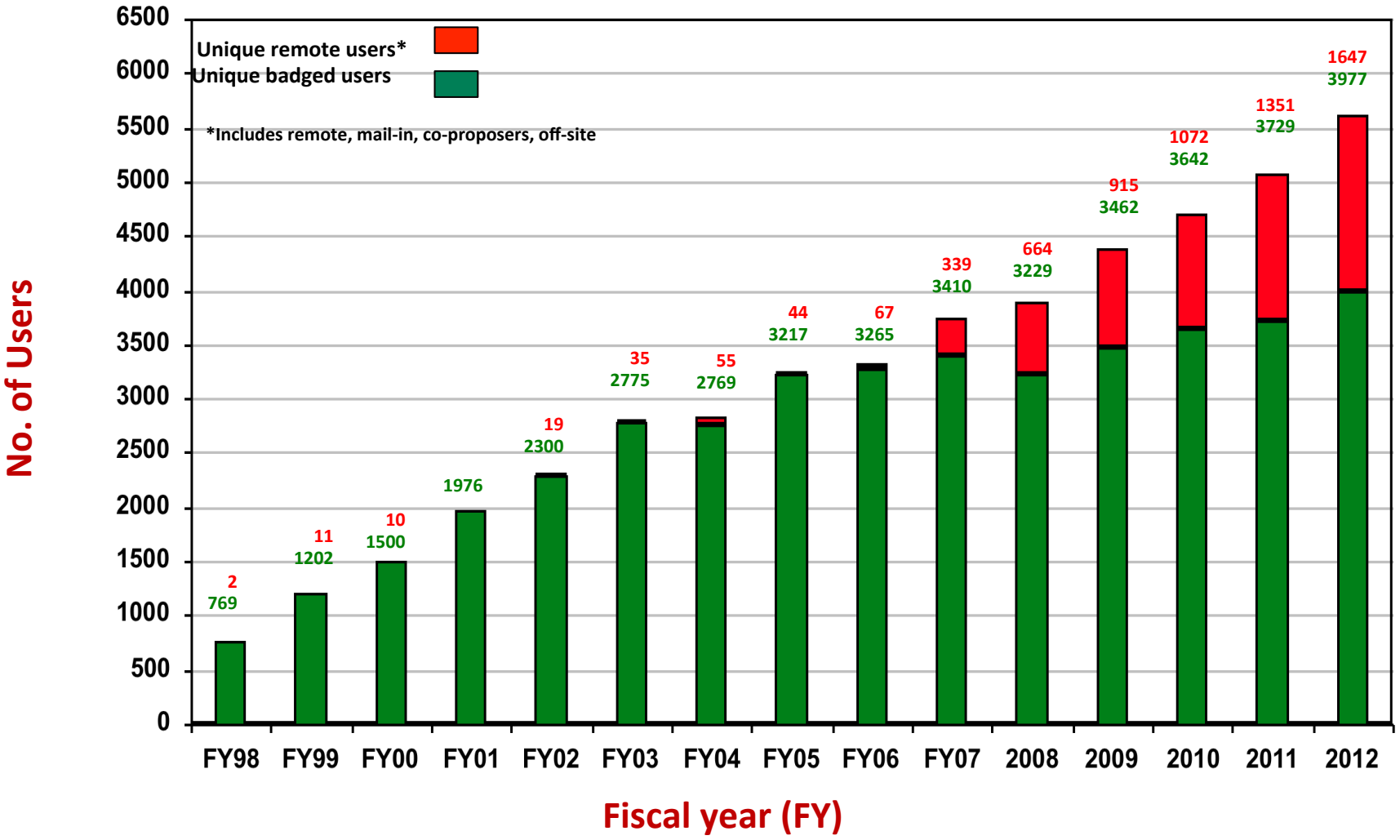
- APS Update – Brian Stephenson
  - New Fiscal Year Records for Safety, Users, Experiments
  - Nobel Prize in Chemistry
  - SAC Reviews of Beamlines
  - 7 Pacesetter Awards
- APS Upgrade Update – George Srajer
- Dynamic Compression Sector Update – Tim Graber

Excellent APS Safety Record in FY12

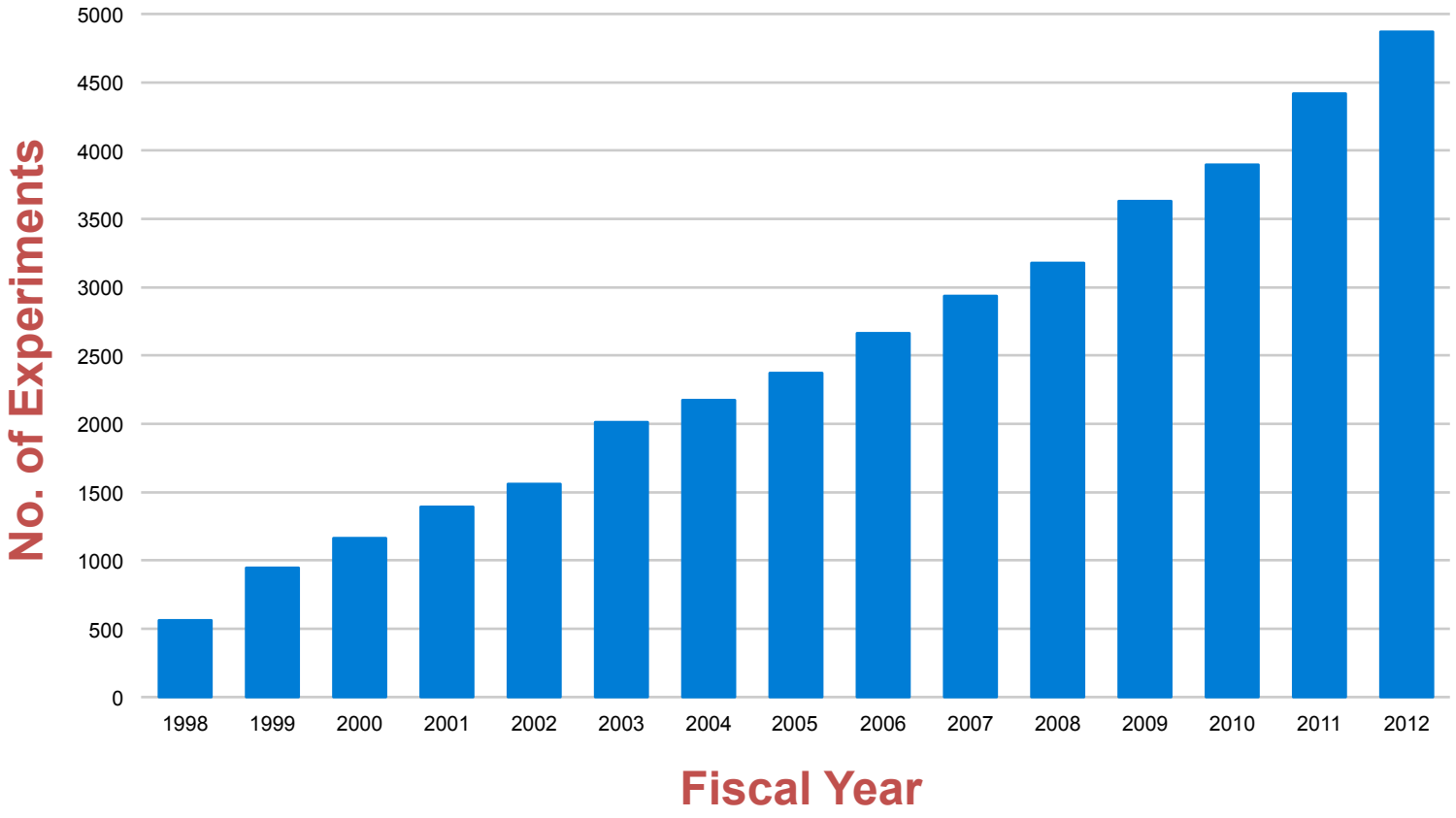
- FY12 best year yet for APS injury statistics



Record Numbers of APS Users (Remote & Badged) in FY12



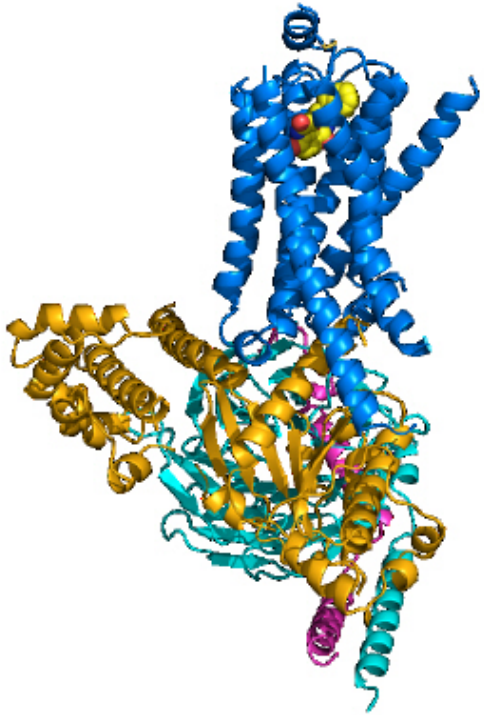
Record Number of User Experiments at APS in FY12



The 2012 Nobel Prize in Chemistry to APS Researcher

- 2012 Nobel Prize in Chemistry awarded to Brian Kobilka (Stanford U., left above) and Robert Lefkowitz (HHMI, Duke U.) for work on G-protein-coupled receptors (GPCRs)
- 2011 study by Kobilka et al. at APS Sector 23 provided the first high-resolution look at transmembrane signaling by GPCR
- Added critical insight about signal transduction across the plasma membrane, a discovery the Nobel announcement deemed "The Holy Grail, a high-resolution structure of an active ternary complex"

S.G.F. Rasmussen et al., Nature **477**, 549 (29 September 2011) DOI:10.1038/nature10361



The structure of the β_2AR-Gs complex

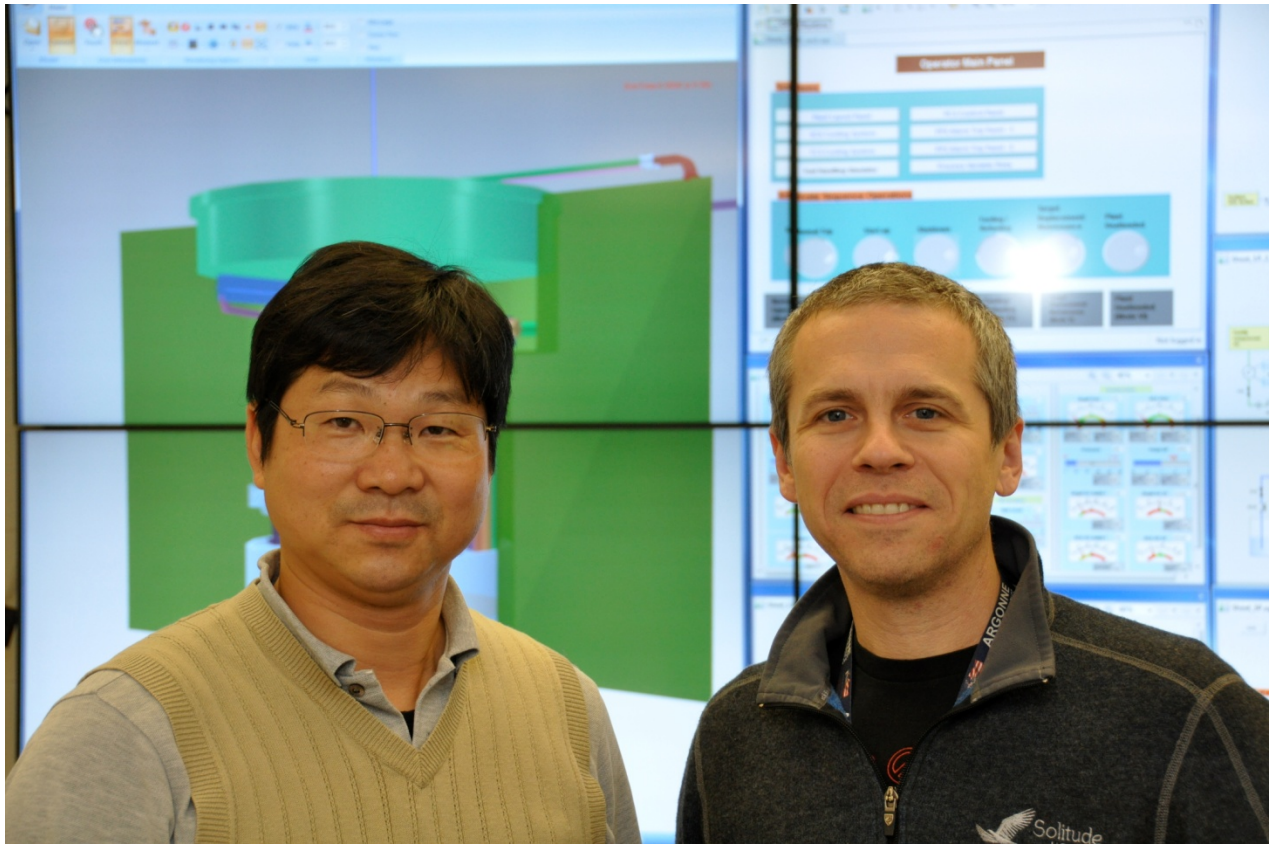
Scientific Advisory Committee Beamline Reviews

- October 3-5, 2012:
  - 3 (HERIX, NRS), 30 (HERIX)
  - 8 (GISAXS, XPCS), 12 (SAXS), 15 (USAXS)
- March 5-7, 2013:
  - 10 (MR)
  - 16 (HP)
  - 17 (IMCA), 31 (LRL)
- November 2013:
  - three Life Sciences CATs
  - Physical Sciences projects prioritization

Pacesetter: Martin Smith (AES)

A new control system protocol converter gateway has been implemented to transfer data from Facilities Management and Services systems to EPICS. It is a vast improvement over older methods, and it has been achieved with the cooperation of multiple parties and with significant technical expertise from Martin Smith

Pacesetter: Young Soo Park (NE) and Joshua Stein(AES)



An innovative operator plant interface control system has been produced jointly for use in accelerator-driven experimental neutron source. It was created by synthesizing engineering expertise in both the accelerator and nuclear reactor domains. This collaboration shows the potential for both accelerator-drive subcritical reactor technology and inter-divisional technology cooperation.

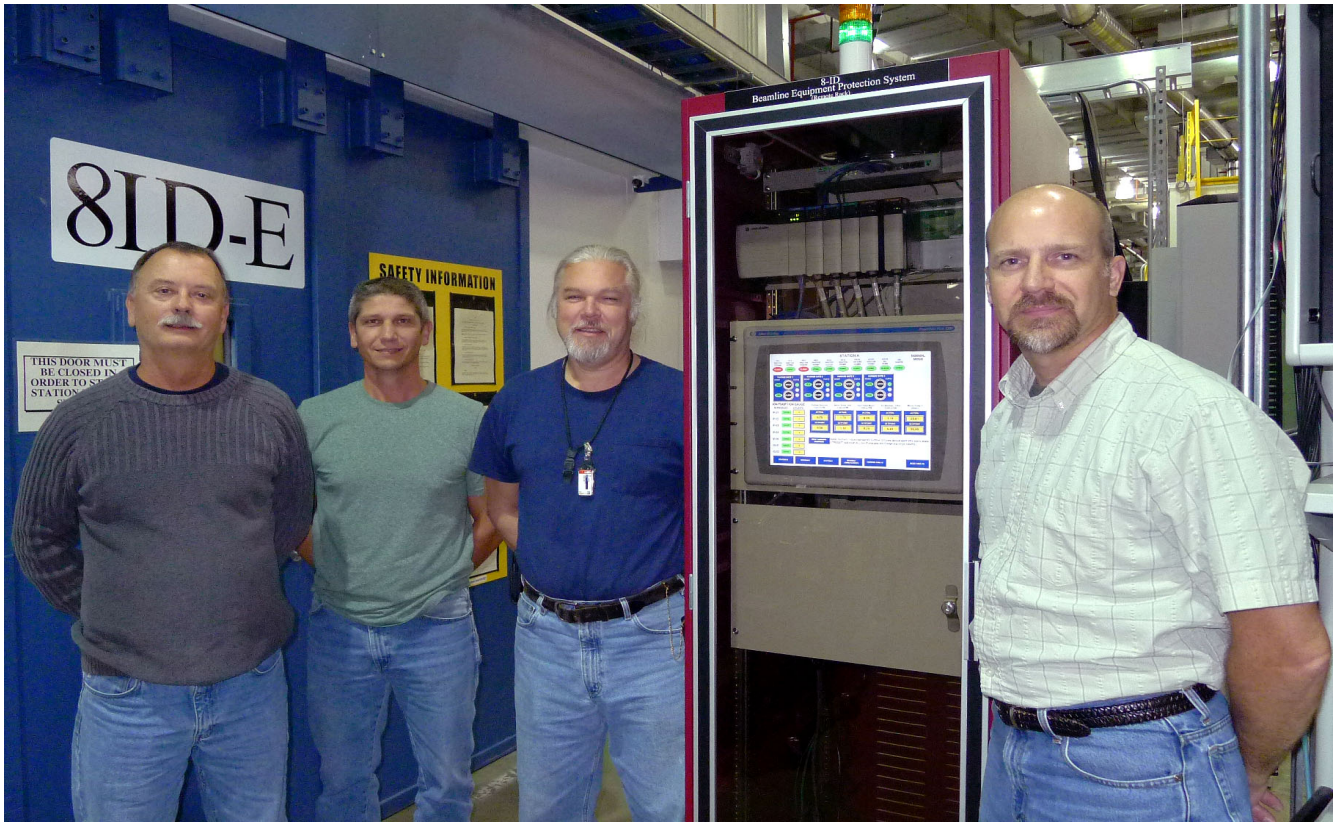
Pacesetter: Roger Sersted(AES)

A new disk array delivered to Sector 34 late on April 6, was desperately needed by 8:00 a.m. on April 7 when a critical experiment was scheduled to start. Roger worked all night and finished the installation by 7:00 a.m. The installation was not easy, he ran into several pieces of failed hardware and incomplete software. The fact that he was able to complete this task under very tight time constraints is a tribute to his ingenuity and hard work

Pacesetter: Diane Wilkinson(PSC)

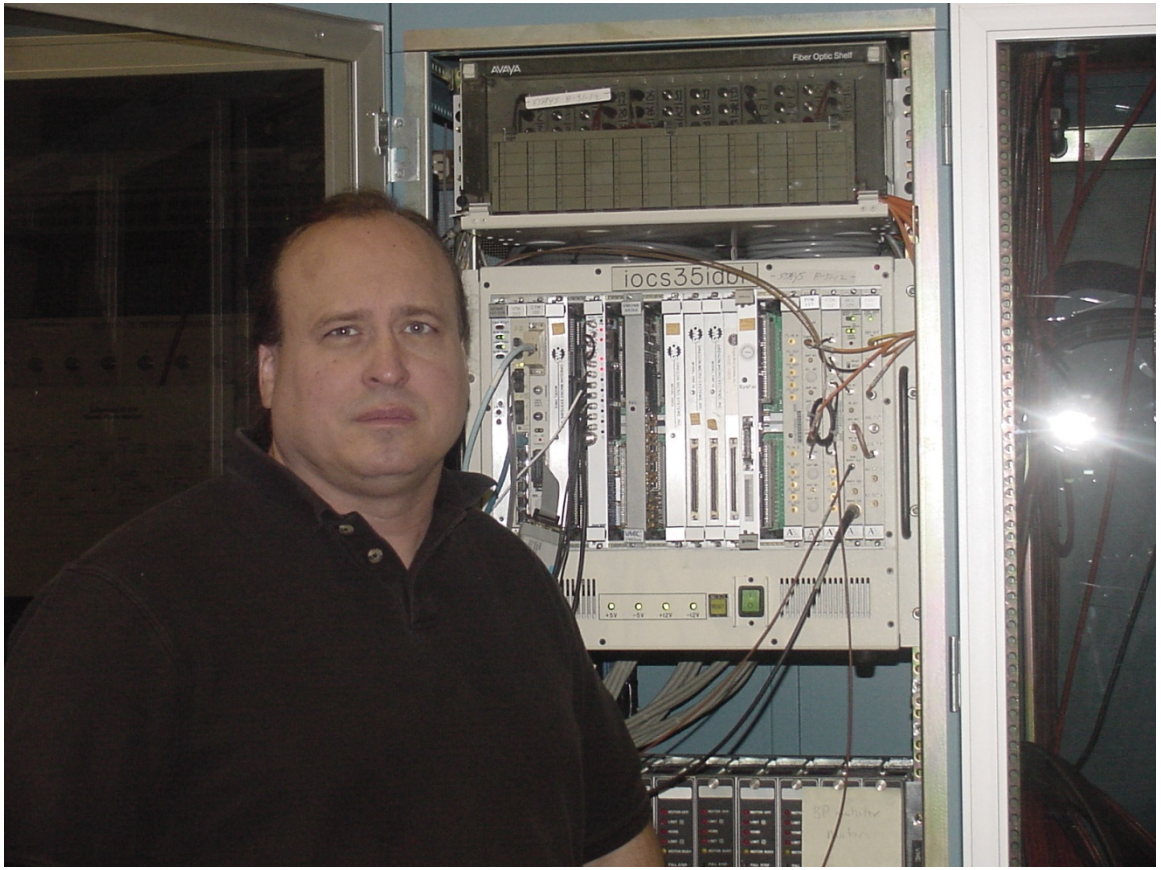
For extraordinary effort in successfully leading a team to completing all administrative and logistical needs of the Upgrade Project over the past four months.

Pacesetter: Mark Gibson, Joe Budz, Chris Sawatski and Ray Ziegler (AES)



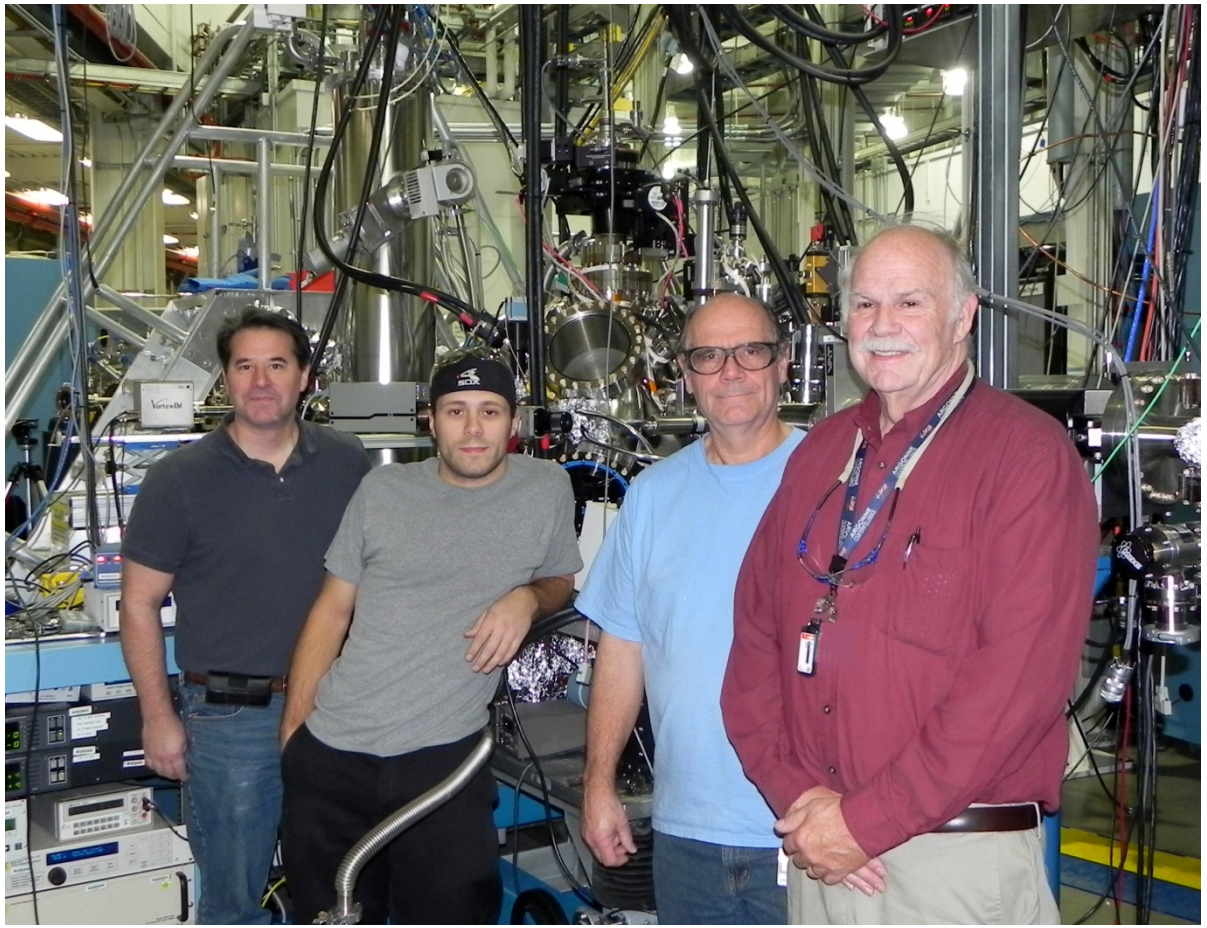
For their response to the impending failure of legacy BLEPS system at the APS Sector 8-ID beamline and their subsequent diligent effort to replace the system not only within budget and time, but also with no interruption to the beamline operation.

Pacesetter: Bill Berg (ASD)



Coordination of effort to develop the SLAC LCLS free-electron laser hard x-ray self-seeding monochromator systems, which demonstrated self seeding for the first time in early 2012. This breakthrough has initiated a new, highly desirable operating mode for hard x-ray free-electron laser experiments at LCLS.

Pacesetter: Mike McDowell, David Gagliano (XSD), Stanley Reinke and Gary Sprau (ASD)



Extraordinary efforts involving the installation and testing of the vector electromagnet and associated power systems on beamline 4-ID-C at the APS.