

# APS Update

APS Users Monthly Operations Meeting  
November 20, 2013

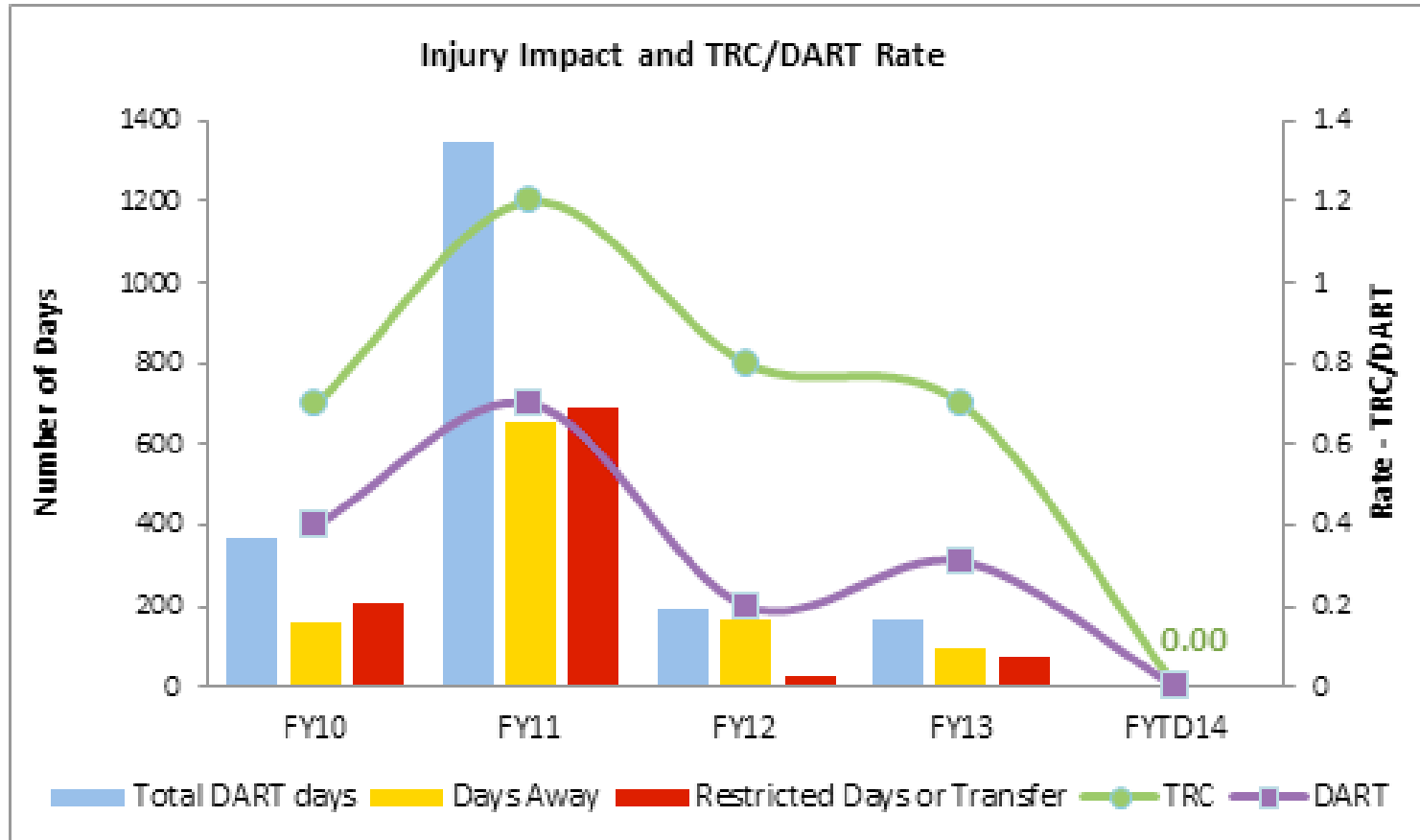
Dennis Mills

# Agenda

- APS Update
  - Safety
  - APS Updates
  - Meeting Updates
- APS-U Update
- *“Optics Testing at a Repurposed Beamline 1-BM”*, Al Macrander, XSD



# Safety- So Far So Good for FY14! Keep it up.



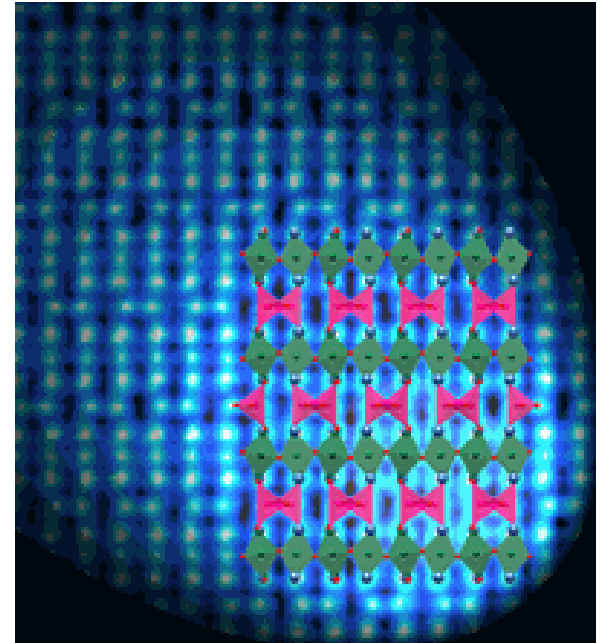
# Non-Experimental Work Planning & Control - WP&C

- WP&C addresses non-experimental beamline activities not covered under an ESAF.
- A hazard analysis and identification of controls has been performed and documented to cover common beamline activities. This document is applicable to all beamlines and can be obtained from Paul Rossi.
  - A significant benefit of this document is it relieves beamlines from having to use the Argonne web based process for the core activities covered – *otherwise each beamline would need to prepare and issue a document like it*
- CATS will need to identify and document all activities or specialty systems that are not included in the common document and that have not been covered by an ESAF. **This needs to be submitted to Bruce Glagola by beamlines before COB December 20, 2013.**
- **All new Non-Experimental Beamline WP&C hazard analysis and control identification documents need to be issued by October 1, 2014.**



# An “Oxygen Sponge” for Better Catalysts & Energy Materials

- Scientists from ANL, ORNL, Northwestern, and Hokkaido University used the APS to study a new oxygen “sponge” that can easily absorb or shed oxygen atoms at low temperatures.
- They grew epitaxially stabilized  $\text{SrCoO}_x$  in one of two distinct phases; either  $\text{SrCoO}_{3-\delta}$  or  $\text{SrCoO}_{2.5}$ .
- These two phases have different structural and electronic properties and show a fast, reversible phase transformation without deterioration of the crystal structure at relatively low temperatures.
- Materials containing atoms that can switch back and forth between multiple oxidation states are very rare in nature - most elements have a stable oxidation state, and they want to stay there.
- Materials with these novel characteristics would be useful in devices such as rechargeable batteries, sensors, gas converters, and fuel cells.



Schematic of new ORNL material that can easily absorb or shed oxygen atoms

H. Jeon, W.S. Choi, M.D. Biegalski, C.M. Folkman, I-C. Tung, D.D. Fong, J.W. Freeland, D. Shin, H. Ohta, M.F. Chisholm, H.N. Lee, “Reversible redox reactions in an epitaxially stabilized  $\text{SrCoO}_x$  oxygen sponge,” [Nat. Mater.](#), published online (2013). DOI: 10.1038/NMAT3736

# DCS Scientific Workshop

DSC Scientific Working Group  
November 15, 2014

- 8:15 DCS Project Status and Update (K. D'Amico and T. Graber)
- 9:30 APS Perspective (D. Mills)
- 9:45 Laser Shock Driver Update (J. Sethian)
  
- 10:15 *Break*
  
- 10:30 Impact Facilities Update (C. Konrad and E. Zdanowicz)
- 11:00 Diagnostics (X-Ray Detectors, Laser Interferometry, etc.) Update  
(S. Turneaure, B. Jensen, S. Wang, and A. Iverson)
  
- 12:00 *Working Lunch (5th Floor Gallery, Building 401)*
  
- 1:00 Tour of Sector 35 and LOM 438F
- 1:45 Laser Shock Target Chamber Discussion (J. Eggert and J. Hawreliak)
- 2:15 Specific Experimental Needs (T. Hufnagel, T. Willey, J. Bernier, and T. Bjer)
- 3:15 General Discussion and Path Forward (All)
- 4:30 Adjourn



# Diffraction Limited Storage Ring Workshop

December 9-11, 2013  
at SLAC

## Monday December 9

- 8:30 Science opportunities with Hard X-rays
- 9:00 Science opportunities with Soft X-rays
- 9:30 Accelerator concepts for DLSRs - trade offs in machine deliverables
- 10:00 *Break*
- 10:30 MAX-IV update
- 10:50 ESRF plans
- 11:10 APS plans
- 11:30 Spring-8 plans
- 11:50 ALS plans
- 12:30 *Lunch*
- 13:30 Parallel sessions - accelerator and photons
- 17:30 Joint session - updates on discussions- update plans for the next day

## Tuesday December 10

- 8:00 Parallel sessions - accelerator and photons
- 12:00 *Lunch*
- 13:30 Parallel sessions - accelerator and photons
- 17:30 Joint session - updates on discussions- update plans for the next day

## Wednesday December 11

- 8:00 Workshop-prepare summaries
- 11:00 Joint - summaries and plans for next steps
- 12:00 Close of Workshop

# SAC Meeting -November 6-7, 2013

One of the main points of discussion at the SAC meeting was the potential incorporation of an MBA lattice into the APS Upgrade.

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|-------------------|--|
| <b>10:15</b>      | <b>Incorporation of an MBA Lattice into the APS Upgrade</b><br><i>George Srajer, Deputy Assoc. Lab Director/Facility Development</i>   |
| <b>11:00</b>      | <b>Report from "Workshop on New Science Provided by an MBA Lattice at the APS"</b><br><i>Dean Haeffner, Associate Project Manger for Experimental Facilities and Workshop Organizing Committee Chair</i> |
| <b>12:00 p.m.</b> | <b>Executive Session Lunch and Discussion: News from Other Facilities; Trends in Facility Upgrades</b><br><i>William Stirling, Discussion Leader</i>   |
| <b>1:15</b>       | <b>Accelerator Aspects of the Design and Implementation of an MBA Lattice at the APS</b><br><i>Glenn Decker, Associate Project Manager for Accelerators</i>  |
| <b>2:15</b>       | <b>SAC Discussion on a Potentially Revised APS-U Scope</b>   |





