

JULY 27, 2022

PSC ALL-HANDS MEETING

LAURENT C. CHAPON

Associate Laboratory Director for Photon Sciences
APS Director



Argonne National Laboratory is a
U.S. Department of Energy laboratory
managed by UChicago Argonne, LLC.



Laurent Chapon: PSC Update
Safety, DEI, staff matter, training, highlights, budget, APS-U

Mike Edelen: Operations & AES Update

Jim Kerby: APS-U Update

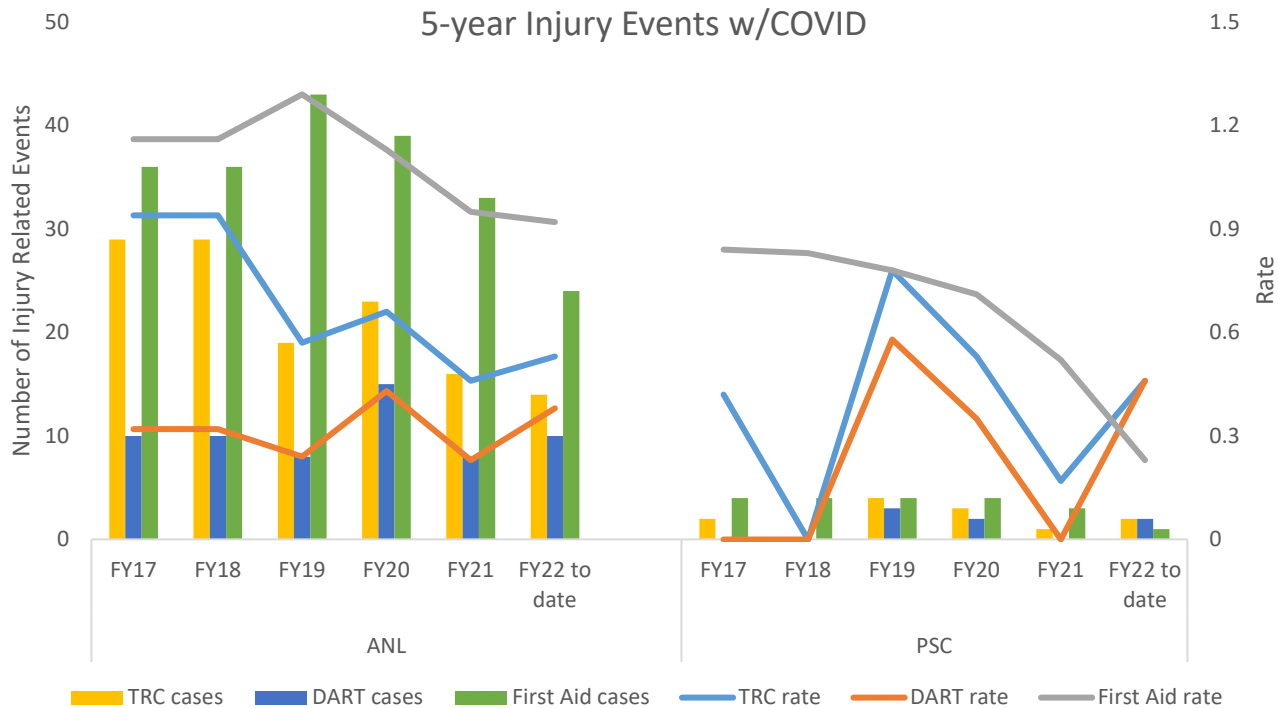
Geralyn Becker: HR Update: Performance Appraisals

Q&A

IN MEMORIAM: LEE C. TENG

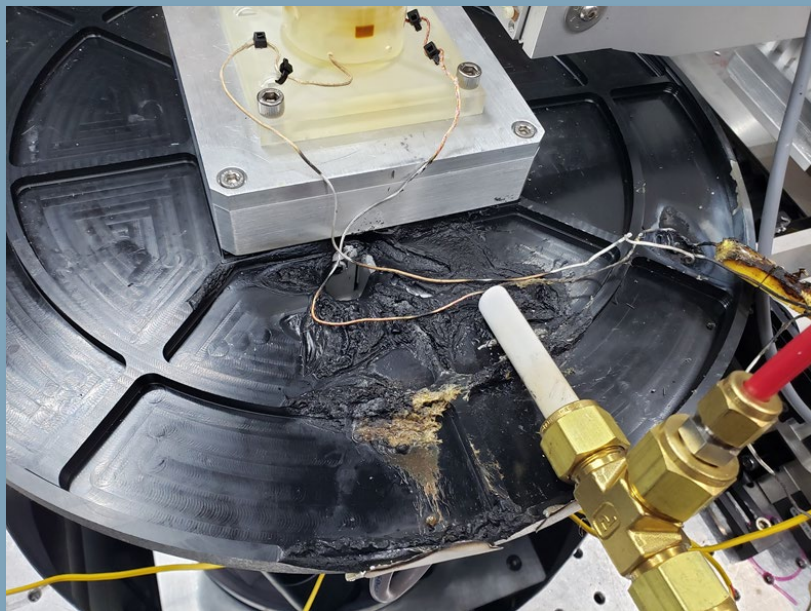


SAFETY



SAFETY

- Learning from minor issues to prevent major issues – FY22



Wrong Version of Interlock Software Modified

- Local copy of software modified and loaded
- Interlock failed validation
- Revised process for ensuring the most current software being modified

SAFETY

DOE Assessment of Work Planning and Control

Office of Enterprise Assessments WPC Assessment completed April 2022

Strengths

- WPC micro-learning sessions (**Best Practice**)
- Innovative utilization of Artificial Intelligence to link Lessons Learned with WCDs (**Best Practice**)
- Use of Laboratory Risk Analysis Tool
- Argonne Electrical Safety Manual

Opportunities to Improve

- Work scopes and scope limits in some WCDs not adequate
- 2 cases where WCDs did not have adequate implementation of hazard controls
- Radiological work permits were not adequate for some specific radiological monitoring

- No specific recommendations for PSC

SAFETY

APS evacuation drill on August 2nd at 9:30 AM

BUILDING	RELOCATION AREA
400 Sectors 1-4	Area in front of LOM 434
400 Sectors 5-8	Area in front of LOM 435
400 Sectors 9-12	Building 446 Southwest parking lot
400 Sectors 13-16	Corner of Bluff and Kearney Rd building 446
400 Sectors 17-20	Front parking lot of building 444 (LBB Building)
400 Sectors 21-24	Area in front of LOM 437
400 Sectors 25-29	Building 450 parking lot
400 Sectors 30-35	Building 450 parking lot
400 EAA	If you exit by 438 - 450 parking lot If you exit by 401 - 314 parking lot
401	Building 314 parking lot
402	Building 460 Guest House parking lot
400A, 411, 412, 413, 415, 420	Evacuate through infield access tunnel to perimeter fence on Bluff road

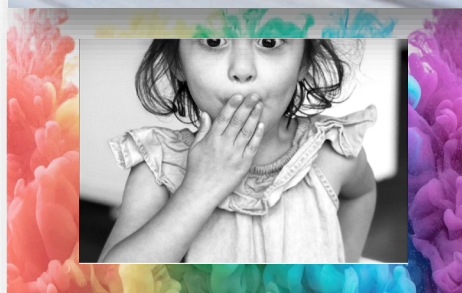
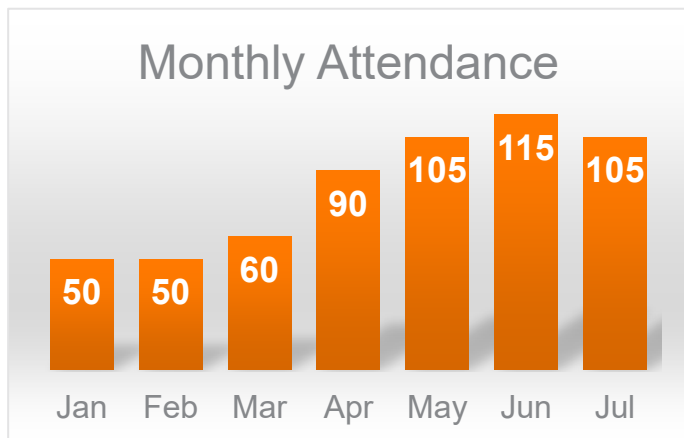
BUILDING	RELOCATION AREA
314	Area in front of LOM 431
431	Area in front of LOM 434
432	Area in front of LOM 435
433	Building 446 Southwest parking lot
434	Corner of Bluff and Kearney Rd building 446
435	Front parking lot of building 444 (LBB Building)
436	Area in front of LOM 437
437	Building 450 parking lot
438	Building 450 parking lot
444	Front parking lot of 440 (CNM Building)
450	Area in front of LOM 433

Diversity, Equity & Inclusion

Recording, slides and info
available on our website



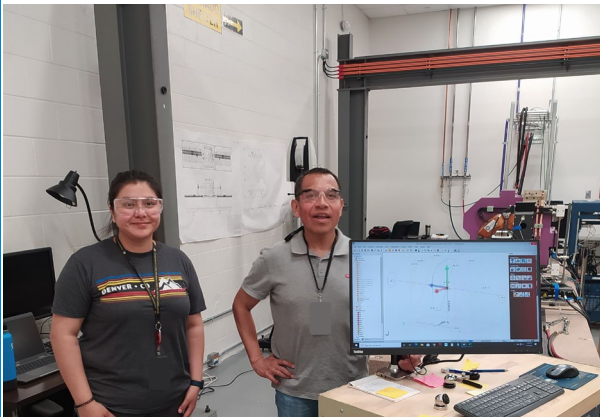
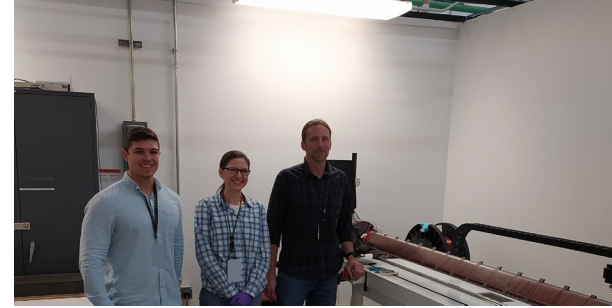
“The Voice of PSC” - every 3rd Thursday 1:00 PM



Diversity, Equity & Inclusion

SPEAKING UP





SECRETARY GRANHOLM VISIT



Robert Winarski Kevin Wakefield



STAFF CHANGES



Barbara Erickson

PSC Human Resources Manager



Jiyong Zhao, Group leader

XSD Inelastic X-ray & Nuclear Resonance Scattering

NEW STARTERS



Joel Fuerst



Thomas Naughton



Sarah Wiegold



Anakha Babu



Mark Wolfman



Aleks Solovyev



Rebecca Weber



Chris Gorman



Chris Kirsten

NEW STARTERS - APS-U



Jimmy Alba



Larry Pitre

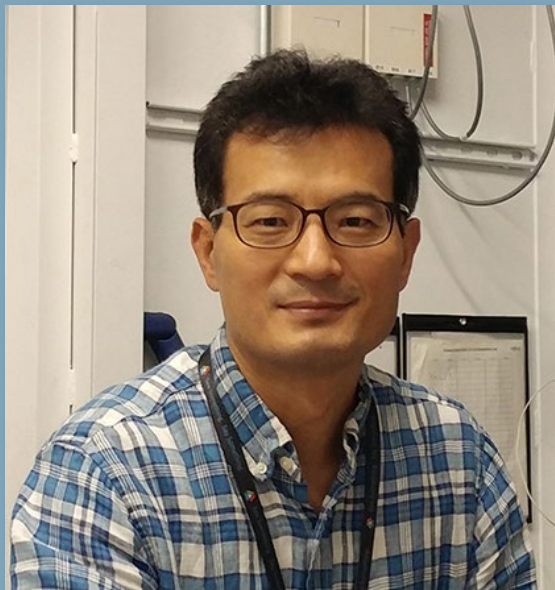


David Williamson

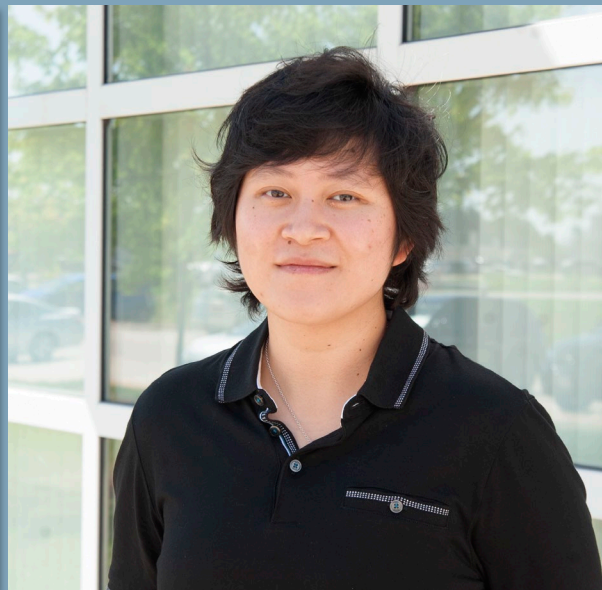


Konrad Witek

AWARDS & RECOGNITIONS



Sungsik Lee



Yanqi (Grace) Luo



Gilberto Fabbris

NX SCHOOL



- Great opportunity to train the next generations of scientists
- Several COVID cases last week, despite measures
- PCR testing Wednesday of last week and quarantined positive cases
- Decided to limit interactions with staff in the last few days of the school

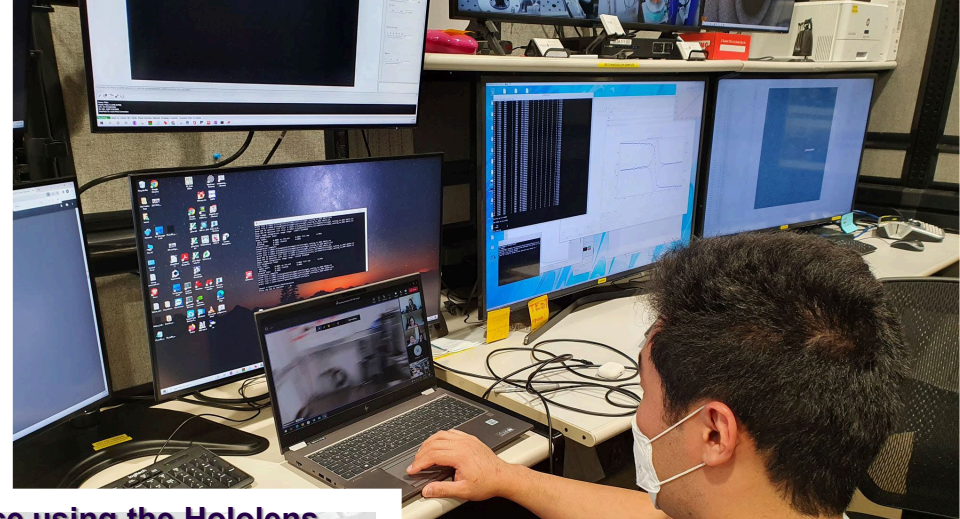
*"It has been so beneficial to spend time with beamline scientists! In addition to learning about their beamline and relevant experimental techniques, it has been **inspiring to hear the scientists' stories** about what led them to their current **careers at APS**. The numerous online resources they shared are also **invaluable and will greatly benefit our future research and collaborations.**"*

"Overall, I experienced everyone caring a lot and being respectful of one another's circumstances which made it still a good experience :)"

NX SCHOOL

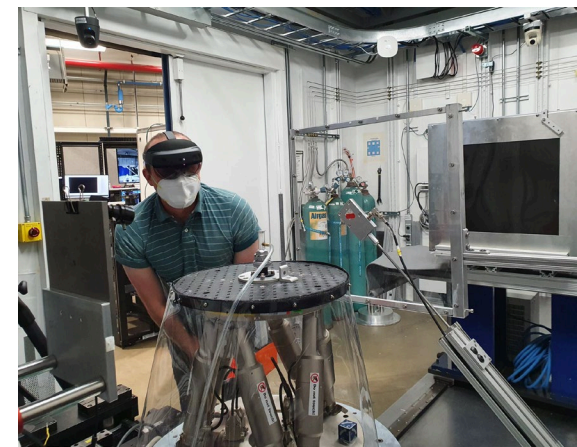
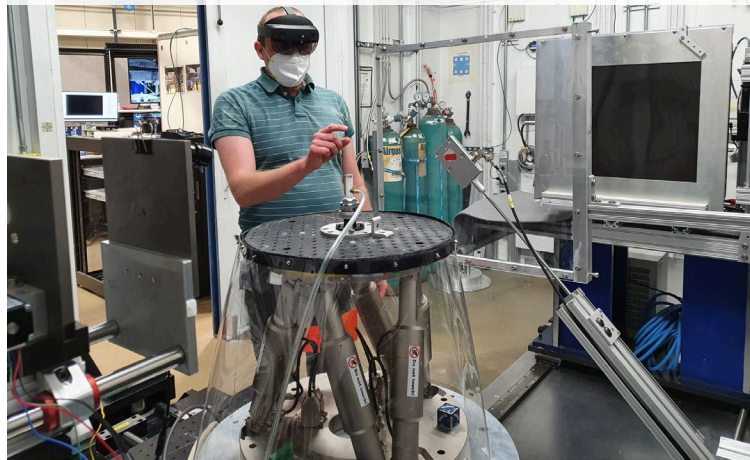
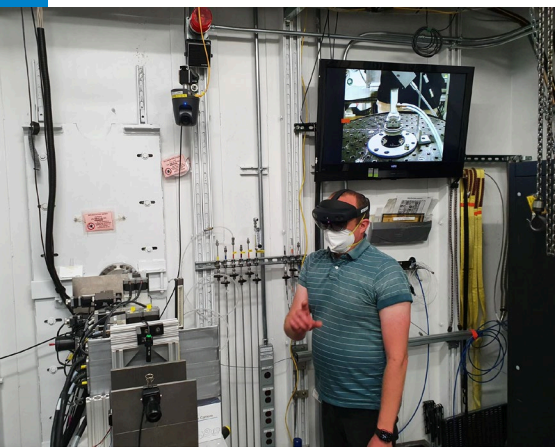


**Running the beamline from the office using remote desktop
(Andrey Yakovenko)**

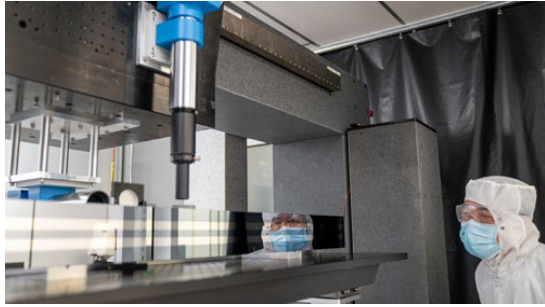


**Support for the beamline control
(James Weng)**

**Almost "real" experience using the HoloLens
to explain Grazing Incidence Total Scattering.
(Olaf Borkiewicz)**



XSD: UPGRADE TO THE METROLOGY LAB



Interferometers temporarily relocated to LOM-437 to continue measurements

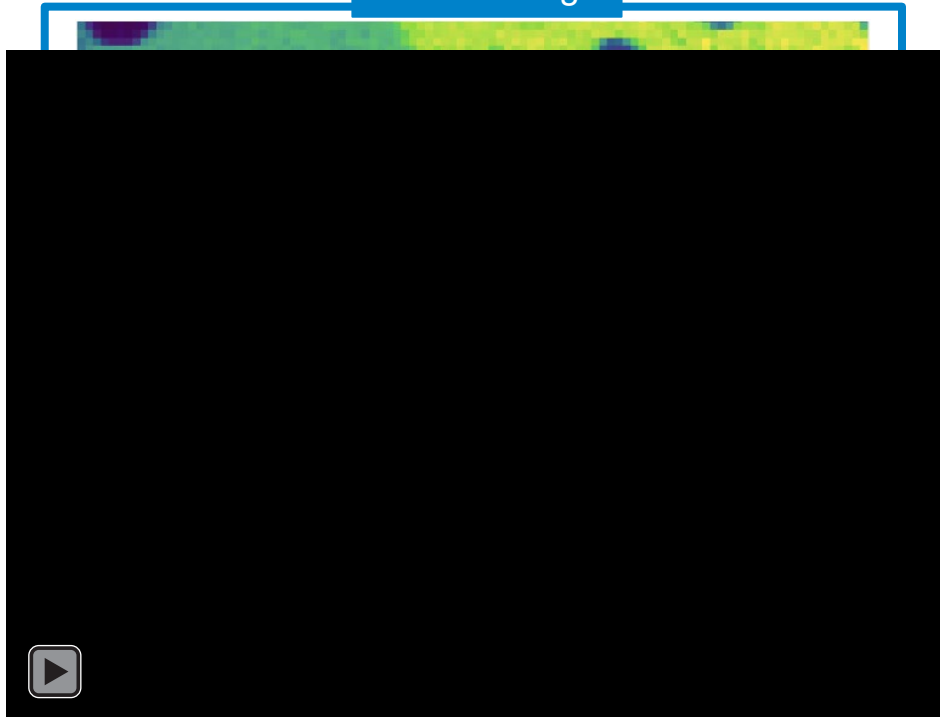


Long-Trace Profiler wrapped in packaging material during work

Jun Qian & Brandon Stone (XSD-OPT)

XSD: SMART DATA ACQUISITION

Full-res image



Locations chosen by AI to scan - Dot = scan point

Saugat Kandel, Anakha Babu, Antonino Miceli, Mathew J. Cherukara (XSD), Tao Zhou, Martin V. Holt (NST), Zichao (Wendy) Di (XSD/MCS), Charudatta Phatak (MSD)

ASD: APS LINAC REFURBISHMENT IS HAPPENING

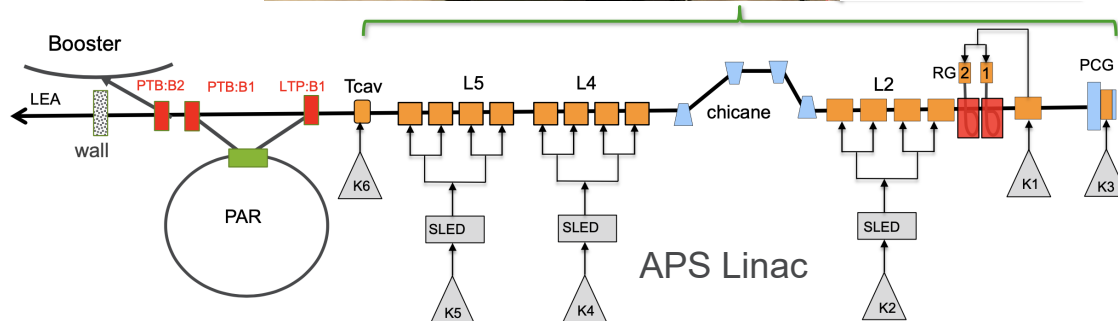
- Addresses obsolescence issues in the APS linac to support APS-U operation



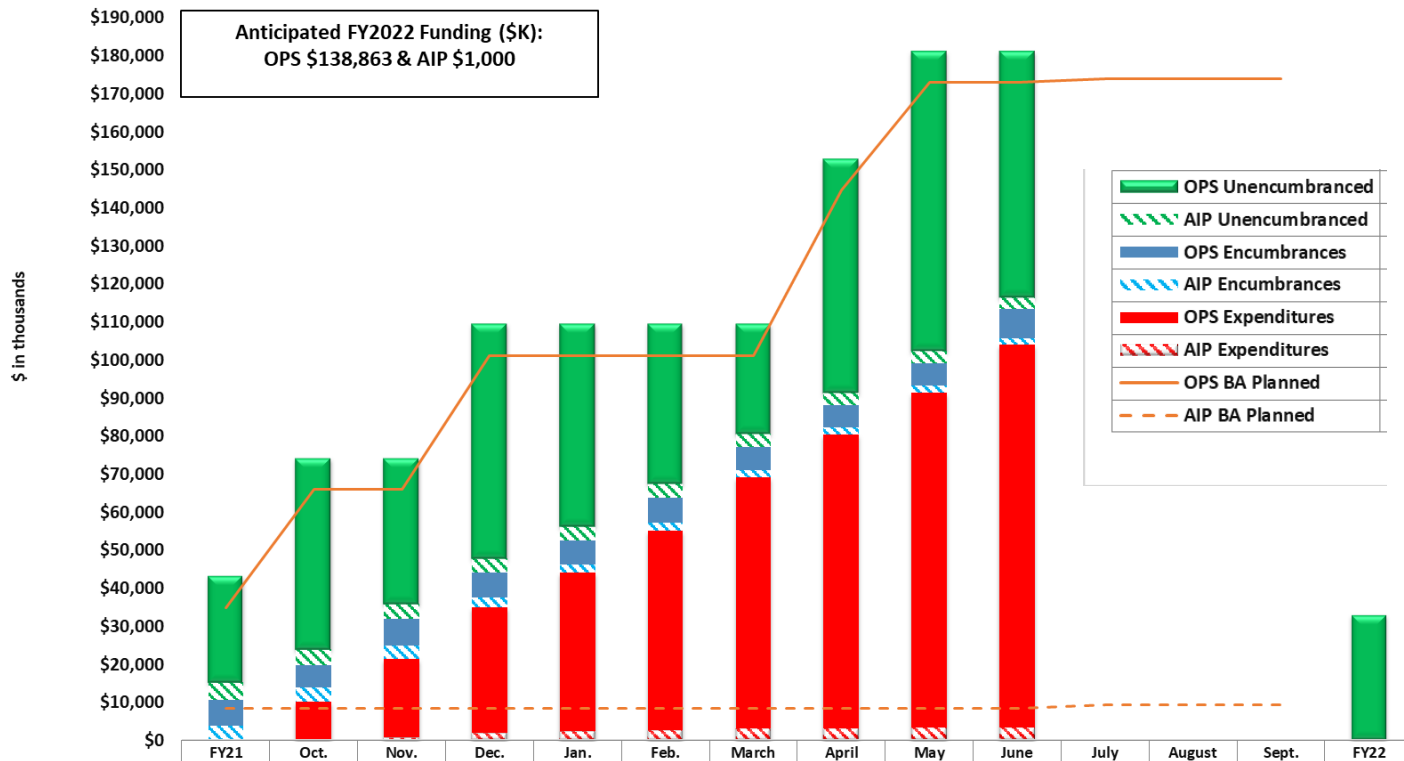
David Meyer



Terry Smith

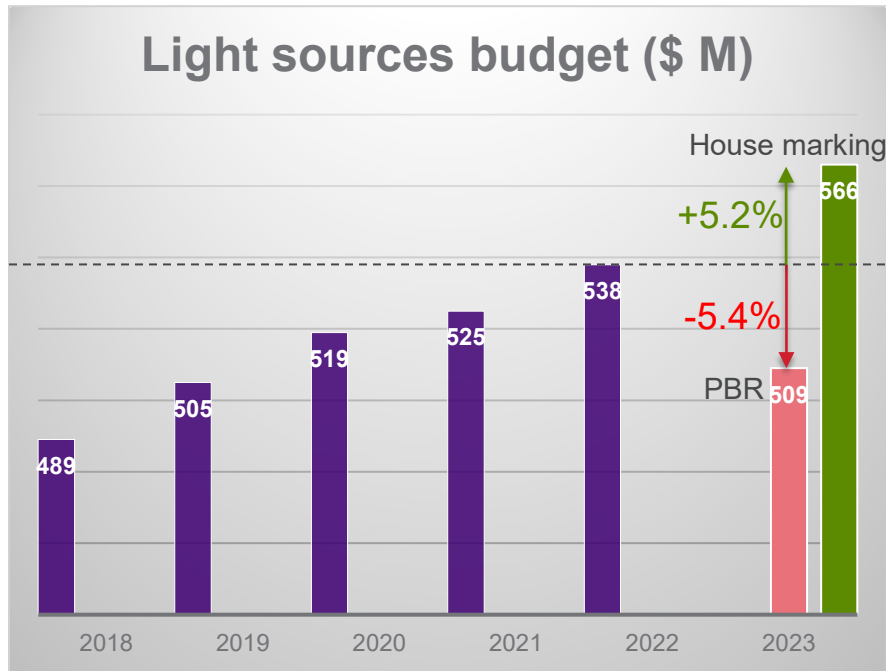


BUDGET FY22



BUDGET

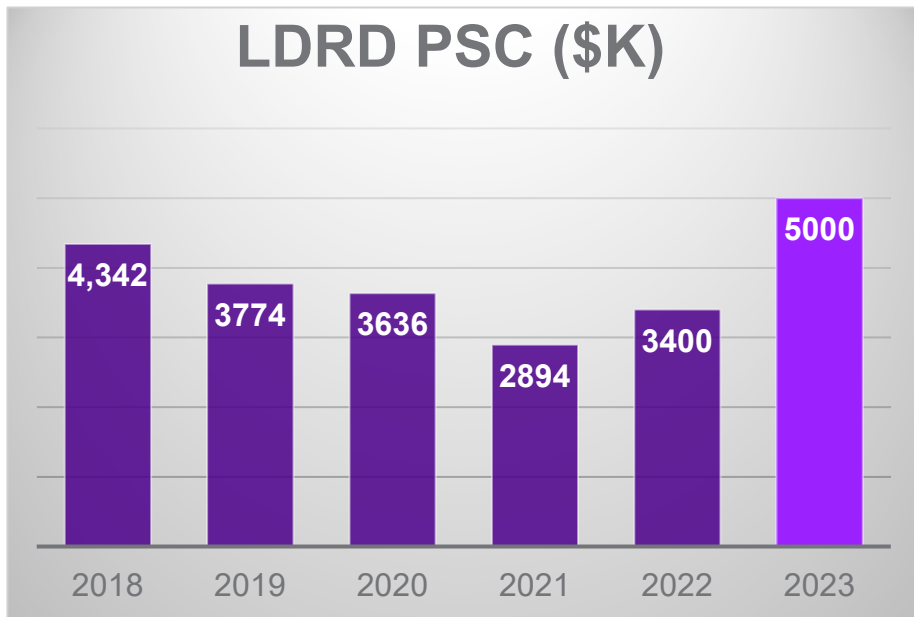
Light Sources Operations Budgets



- Light source directors, national lab directors working together
- Define optimal budgets for out-years bottom-up
- Budget for out-years focus on additional beamline staff and integrate essential capex in the baseline to modernize our high-power RF system, and support a rolling program of instrument upgrades

BUDGET

- LDRD – Allocation FY23



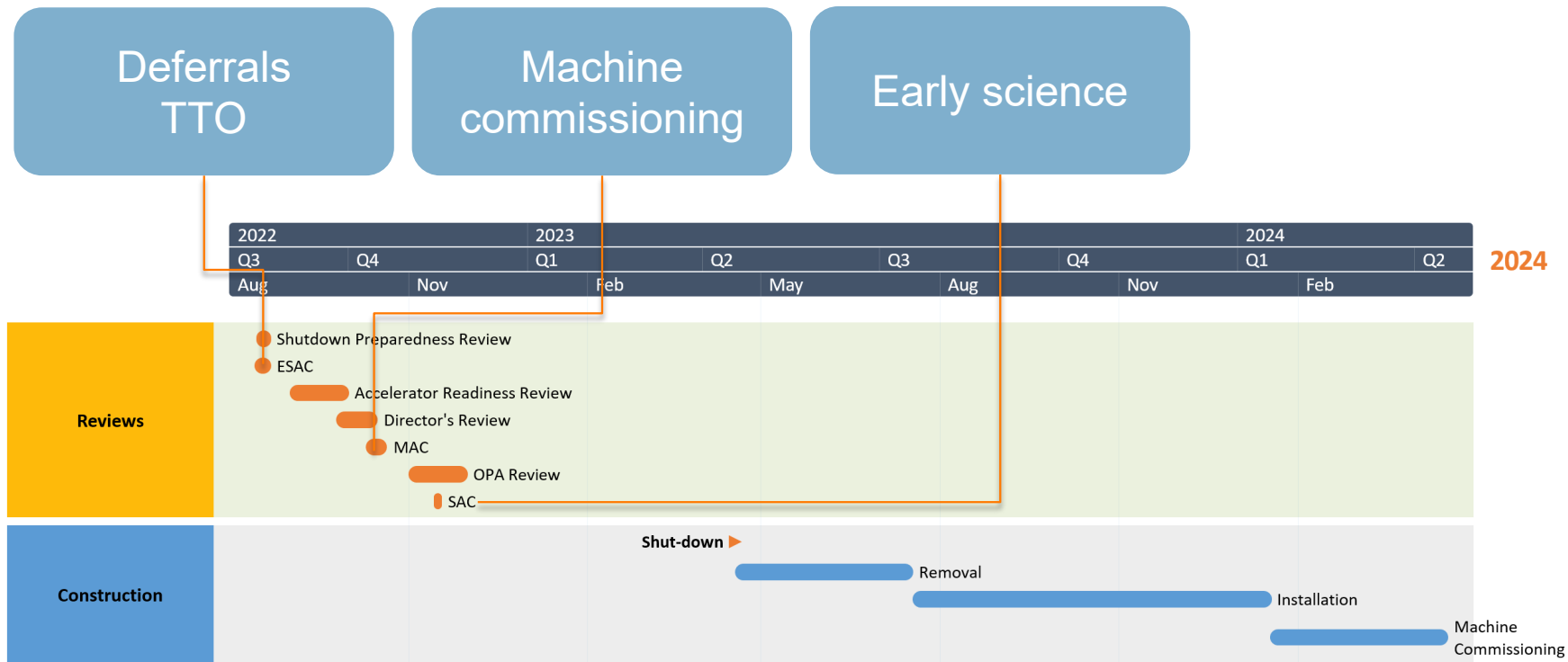
- Strong support from the Lab for the hard x-ray sciences initiative
- Early Science at APS-U
 - Develop and mainstream novel, user-friendly methods and tools for a 100-fold improvement in hard x-ray coherent imaging and scattering
 - Establish data analysis pipelines to enable near-real-time science on APS-U feature beamlines, efficiently handling the 10-fold increase in the volume of data that will be produced
 - Provide dedicated support for early science using the new experimental capabilities at the upgraded APS
- Technology for compact accelerator

APS-U DESCOPING



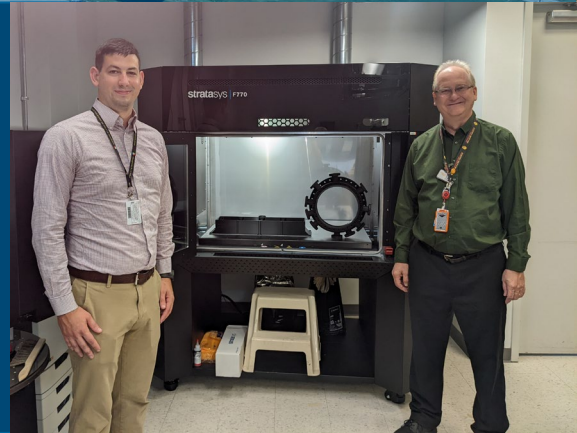
- Supply chain issues and pandemic-related impacts have reduced our contingency to sub-optimal levels (23% on cost to go)
- Reducing scope at this stage is required to reach our immediate objectives....
... but will not affect our final goals
- PSC and Lab management committed to realizing the full potential of the new APS
- Essential to preserve April 2023 shutdown

PREPARATION FOR APS-U





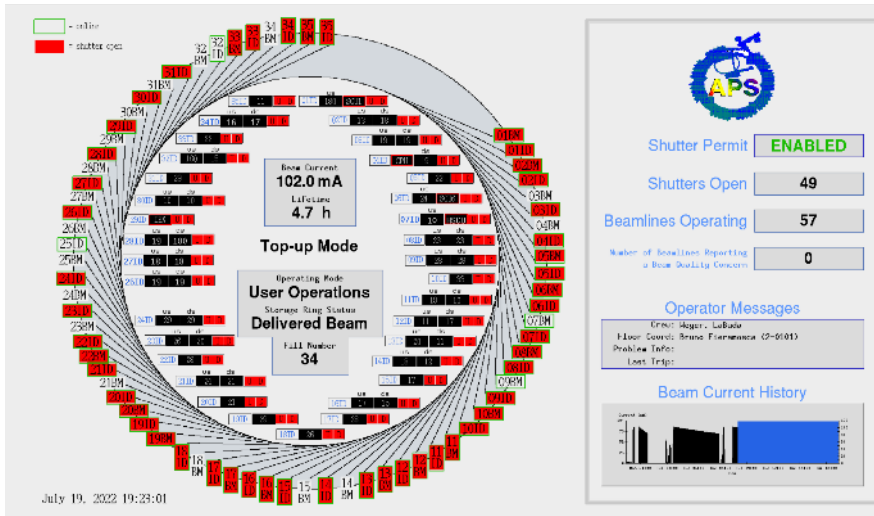
APS OPERATIONS AND AES UPDATE



Mike Edelen
Director, APS Engineering Support Division
July 27, 2022



APS OPERATIONS UPDATE



Shutter Permit **ENABLED**

Shutters Open **49**

Beamlines Operating **57**

Number of Beamlines Reporting a Beam Stability Concern **0**

Operator Messages

Operator: Roger LaBrie
 Alarm Control: Bruce Finerman (2-0013)
 Problem Type: Lost Trips

Beam Current History

APS Operations dashboard on Tuesday, July 19, following study period

APS 2022-3 Maintenance Shutdown Schedule

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Non-Routine Work																														
APS Pre-Shutdown Meeting																														
APM load change of storage ring equipment																														
FAC components for harvesting																														
Image 2300 Test Table																														
Link Storage system refreshment																														
Swap of Insertion Devices to S4D5																														
Mount wireless antennas in SR																														
New WinCC Server System Rollout																														
SR Control Computer Measurements Zone E																														
PARK Kick Magnets Vacuum Chamber Installation																														
SR2922 Residual Water Blows in-Line																														
PHOENIXES-BID-420 Pump Control Upgrade: Allen Bradley																														
Install mirror and camera in booster light port																														
SRD and 2SRD-BEPPS install																														
Modify 3SRD-BEPPS																														
Install new PLC and VFD code at 2SRD-BEPPS																														
Facilities Work																														
Storage Ring Shutdown																														
Storage Ring Cleaning Zone E																														
Install elect. Outlets in PARK Enclosure																														
Switchgear Preventative Maintenance -SS-X7																														
Switchgear Preventative Maintenance -SS-98																														
400, install Emer. Pair For Mobile (D4D)																														
Fiber Installation for 400 (SR), 412/412, 420 Mobile Phone Distributed Antenna System (DAS)																														
Install Storage Ring W.F. Data, Conduit																														
Install Storage Ring W.F. Data, Cable																														
412, install Emer. Pair For Mobile																														
420, install Emer. Pair For Mobile																														
412, 4V-201, Upgrade Control, add VFD, Rep. Bus																														
Zone 4 Consult Mover																														
Mechanical Pump Work																														
IR Replacement (P16)																														


Legend:
 weekend
 possible early Turnells close if RF Couplers need to be Replaced

APS maintenance shutdown for Aug/Sept 2022

OPS: HELIUM CRISIS AND FORCE MAJEURE



Reduce dependency



Local recycling options

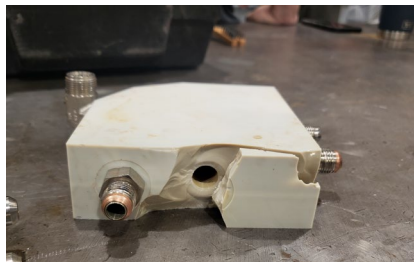


Lab-wide recovery system (August 22 PSC)

AES HIGHLIGHTS



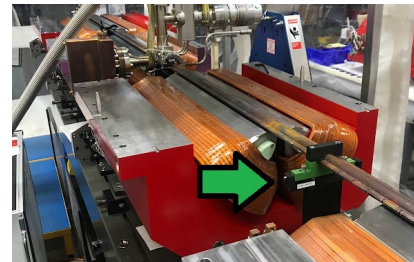
Water Leak Repair for Front-End Components



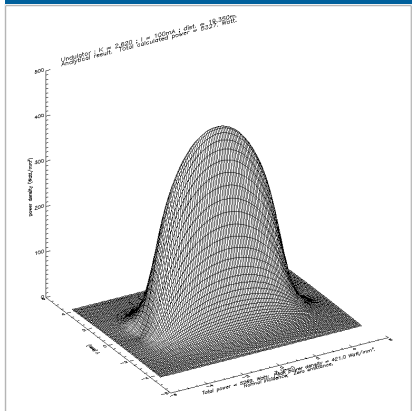
Sector 17 Damaged Quadrupole Magnet Repair



- Processed 4777 ESAFs
- Coordinated:
- RSS work for 70 CCWPs
 - 33 BSL2 experiments
 - 13 energized material experiments
 - 70 radioactive experiments



First FODO Vacuum String



L-bend Vacuum Chamber Welds

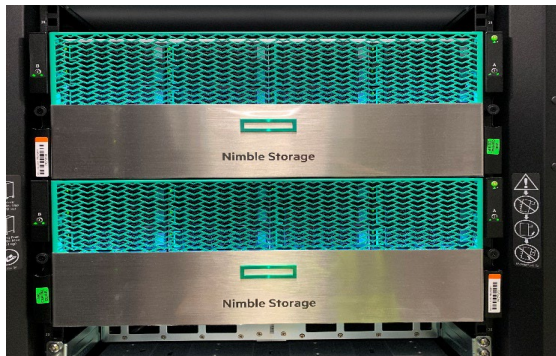
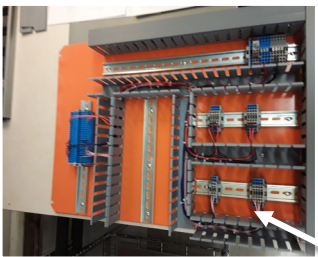


F770 Stratus

AES HIGHLIGHTS

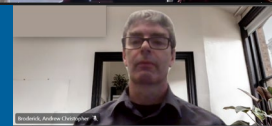
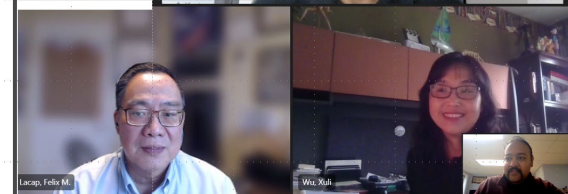
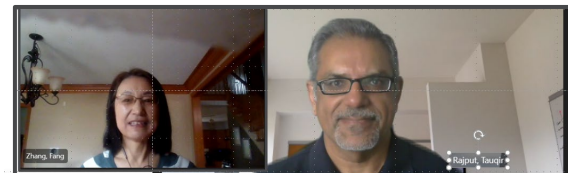


ACIS Upgrade
PSS and
BLEEPS
Panel Prep



Accelerator Cluster Disk Storage –
Two HPE Nimble Storage Chassis

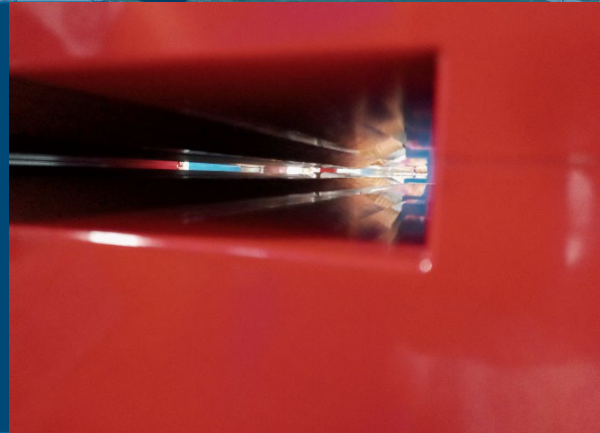
Fiber Shelves in
APS Datacenter
for the
Accelerator,
Beamlines, and
LOMs



Single Sign-ON
Authentication System
Upgrading ICMS Repository
Universal Proposal Management
System Collaboration



APS-U PROJECT UPDATE

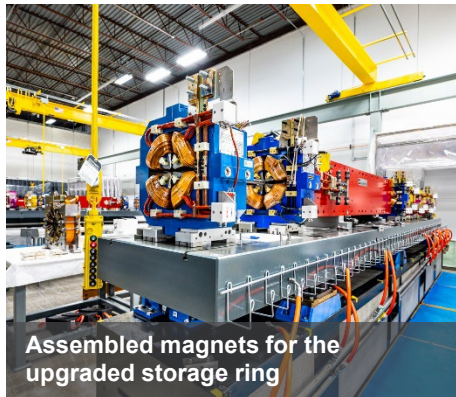


Jim Kerby
APS Upgrade Project Manager
PSC All Hands Meeting
July 27, 2022





x500



Assembled magnets for the upgraded storage ring



First new beamline instrument up and running



New front-end systems to deliver x-ray beams to experiments



\$815M



Long Beamline Building, which will house two of the nine feature beamlines



\$1.5B



U.S. DEPARTMENT OF ENERGY

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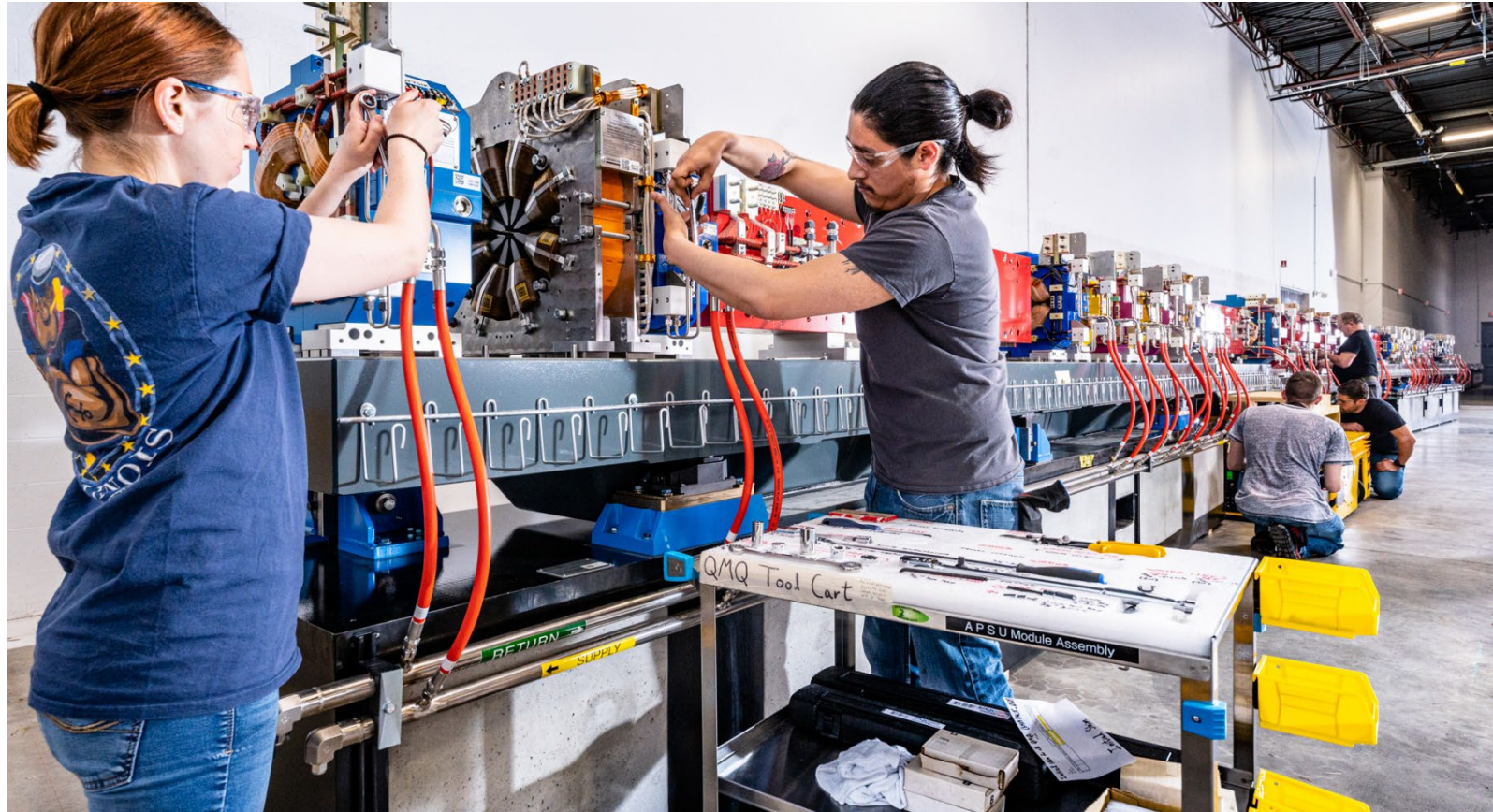
JULY 25, 2022



THANK YOU!



1ST SECTOR ASSEMBLY IN BLDG. 981



BLDG. 981 – 100,000+ SQ FT OF UPGRADE!



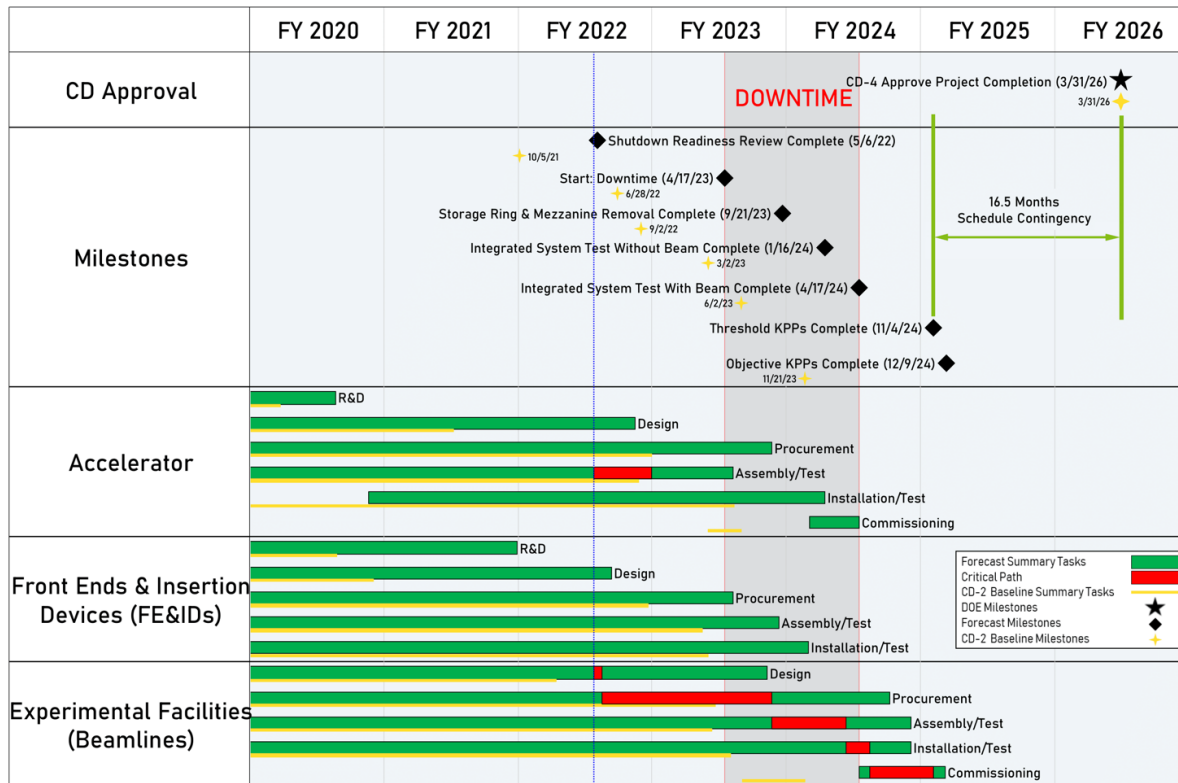
CURRENT STATUS AND SCHEDULE

68% complete by cost

- Cumulative performance - 3% over cost and 5% behind schedule
- FY22 – 9% over cost and 11% behind schedule

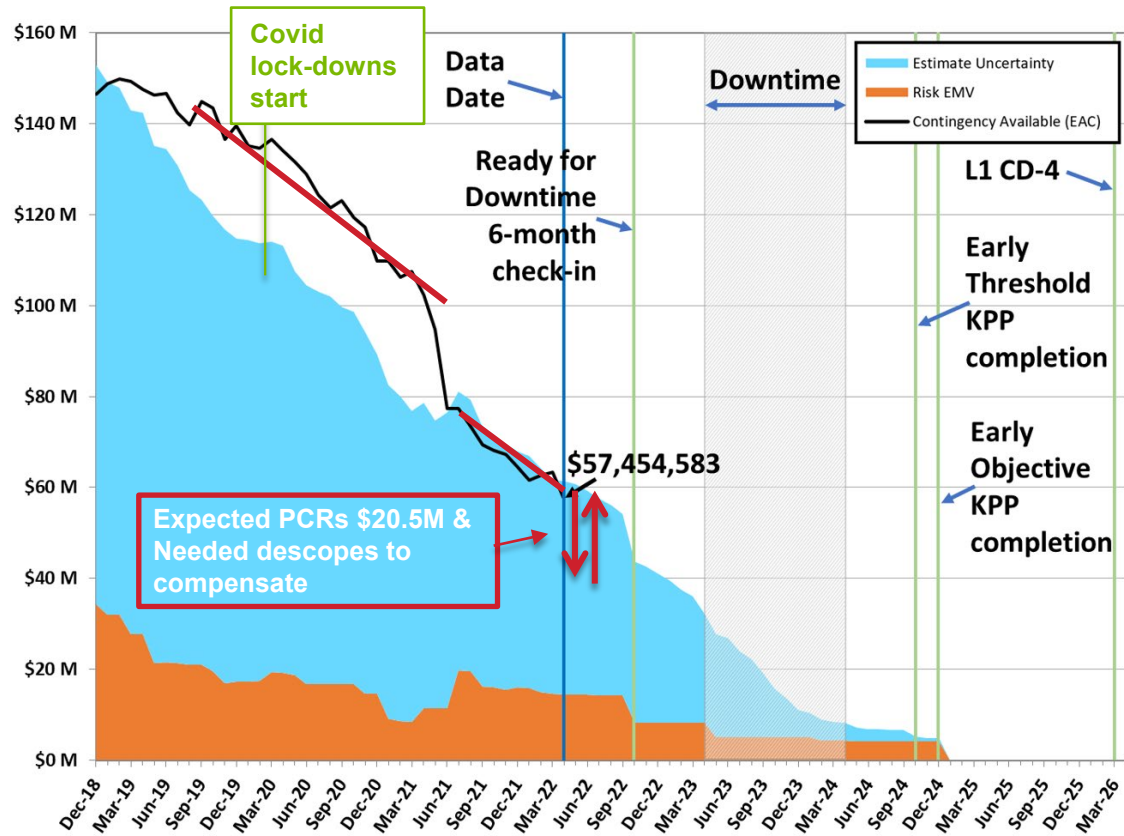
COVID and supply chain impacts continue; our staff are visiting vendors regularly to understand their issues and help solve them
Accelerator component delivery, acceptance and assembly drive the shutdown

- Readiness Review in August...path to April 2023 shutdown and the 1-year duration



CONTINGENCY ESTIMATES

- Amount of contingency available (black line) is less than expected for projects at this point of completion, and lower than remaining “risk” uncertainty indicates we need (blue shade)
- Contingency burn rate (red lines) show “normal” rates with drops for COVID/supply chain disruptions
- Project has just done bottoms-up analysis of labor and M&S to complete project that will increase costs by +\$20.5M (project change requests PCRs)
- This must be balanced by a similar descope amount



DESCOPE METHODOLOGY

- **Preserve items that ensure delivery of Threshold KPPs** ← REQUIRED
- **Any descope shall not limit the ultimate capabilities of the facility**
 - Minimal cancellation of existing contracts
- **Accelerator descopes**
 - Preserving beam stability is a priority
 - Some flexibility between Day 1 operating modes & necessary diagnostics
- **Scientific descopes (front ends, insertion devices, and beamlines)**
 - Photon delivery is REQUIRED
 - Maximize science return on investment for feature beamlines and enhancements
 - Feature beamlines prioritized in inverse order of ranking from original external review
 - Preserves most capabilities on 7 of 9 feature beamlines & beam delivery components on remaining 2
 - Enhancements also prioritized considering original external review
 - Prioritize enhancements that leverage outside partner investments

PROPOSED DESCOPE LIST

Rank	Accelerator Items	Descoped cost
1	Booster High Power Coupler	\$350k (already done)
2	Fast Orbit Feedback	\$200k + \$100k labor
3	Mechanical Motion Sensing System	\$200k + \$519k labor
4	38 AM Beam Size Monitor	\$500k + \$400k labor
	To Go Total:	\$900k + \$1019k labor

Rank	Front Ends and Insertion Devices	Descoped cost
1	Superconducting Undulators (2)	\$200k + \$1,800 labor (already done)
	To Go Total:	\$0

Rank	Experimental Systems Items	Descoped cost
1	Environmental control rooms ASL, CSSI, CHEX, & Polar.	\$898k
2	Enhancements for 1-ID, 2-ID, 6-ID, 7-ID, 25-ID, 30-ID, & 32-ID beamlines (optics and instrumentation)	\$4,872k + \$428k labor
3	HEXM feature beamline instrument for 20-ID-D	\$934k + \$100k labor
4	PTYCHO feature beamline multilayer monochromator	\$409k + \$50k labor
5	3DMN feature beamline instrument and detectors	\$4,059k + \$600k labor
6	Atomic feature beamline instrument, detectors, and optics	\$5,909k + \$795k labor
	To Go Total:	\$17,081k + \$1,973k labor

Grand Total: \$17,981K M&S and \$2,992K Labor

\$20,973k ←

PATH FORWARD

Descoped items will not be lost, but completion of some items will be delayed

- Argonne and PSC management are both committed to ensuring we find mechanisms to realize the descoped items
 - i.e., Major Item of Equipment funds
- ESAC mtg. in August charged with confirming methodology and our choices

The whole team is working to deliver the current scope on time and budget while ensuring a smooth transition back to operations

- Hitting cost targets and avoiding delays will improve the contingency situation
- Should economic conditions change, or contingency improve, we will recover scope

SUMMARY

- We all are focused on delivery of the project to KPPs within budget and schedule
- Use of scope to maintain project contingency status to ensure delivery and meet the KPPs is required at this time
- Though some items have been descoped from the project, PSC and Argonne are committed to completion for each
- Upcoming Reviews
 - Shutdown Preparedness Review: August 16-17-18
 - Experimental Systems Advisory Committee (ESAC): August 17 and 24
 - Machine Advisory Committee (MAC): October 2022
 - Accelerator Readiness Review Status Update: September 2022
 - Director's Review: September/October 2022
 - DOE Status Review: November 2022

COMMUNICATIONS

Bookmark for the latest news and information

APS Upgrade web page on the APS website

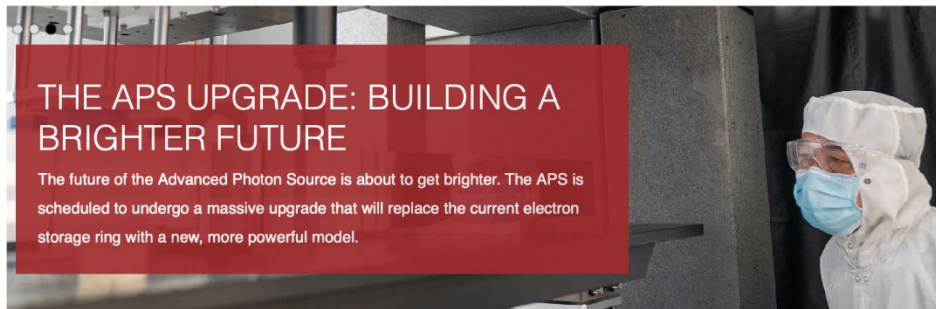
- <https://www.aps.anl.gov/APS-Upgrade>

APS Upgrade web page on the Argonne website

- <https://www.anl.gov/aps-upgrade>

263 days to the shutdown!

The **Advanced Photon Source**
a U.S. Department of Energy Office of Science User Facility



APS Upgrade Home

About the APS Upgrade

FAQ

New Storage Ring

Feature Beamlines

Videos

People of the APS Upgrade

INSTALLATION PERIOD CURRENTLY SCHEDULED TO BEGIN APRIL 17, 2023

The APS Upgrade storage ring installation period, during which the APS will pause operations for one year, is currently scheduled to begin on April 17, 2023. The APS will operate throughout 2022 and will schedule an operations run early in 2023, though the exact schedule has not been determined. The upgraded APS will return to operations after the 12-month installation and commissioning period, though initial operations will be at reduced current and availability as the machine is tuned up. Regular updates will be provided on this website.



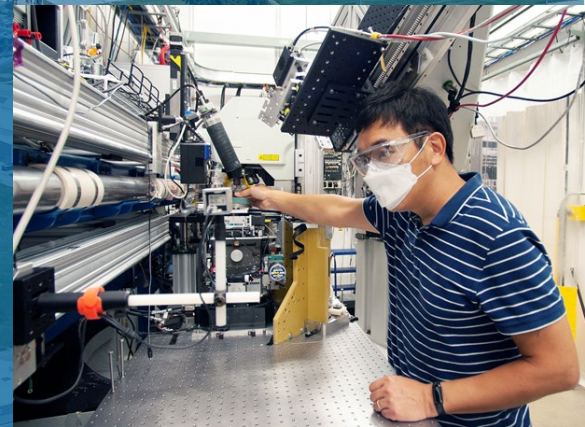
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PSC HUMAN RESOURCES UPDATE

Geralyn Becker, Interim HR Manager
PSC All Hands Meeting
July 27, 2022



PERFORMANCE APPRAISALS - 2022

- Who: All employees (full- and part-time) active between July 1, 2021, and June 30, 2022
 - Postdocs who transitioned to regular positions
 - Union colleagues who transitioned to non-union positions

Union employees do receive a review BUT it is not tied to their compensation

- NOT in this process
 - Postdocs, students, Argonne Associates, contractors, temporary employees



PERFORMANCE APPRAISALS – 2022 CONT'D.

- 5 ratings: Far Exceeds, Exceeds, Achieves, Meets Most, Fails to Meet
- Same general calendar
 - August for Statement of Accomplishments (SOA)
 - Performance appraisals will launch in early September
 - Supervisors can request feedback from other stakeholders via Workday or email
 - Be sure all eligible employees have SMART goals documented in Workday
 - Be sure status of goals completed prior to FY22 have been updated in Workday, otherwise these old completed goals will appear in the FY22 performance appraisal
 - September-December to complete appraisals and hold conversation



PERFORMANCE APPRAISALS – 2022 CONT'D.

- Elements
 - Input from employee
 - Evaluation from supervisor
 - Feedback from other stakeholders
 - Calibration sessions
 - Review by second-level supervisor
 - SMART Goals
 - Conversation
- Links to merit increases and bonus
 - Effective in January
- PSC people matrixed to APS-U
 - 50% or more time – APS-U
 - Both supervisors in discussion



BARBARA ERICKSON

- August 1: begin transition
- HR Manager for Laboratory Operations and Office of the Director since 2018
- Leading the HR Group for performance appraisal continuous improvement
- Brings a wealth of experience
 - HR strategic
 - HR pragmatic



APSHR@ANL.GOV - YOUR TEAM!



Kyle Webb



Brianna Blazek



Tressa Alcantara

ARGONNE IMPACT AWARD WINNERS

Enhancement of Argonne's Reputation: 56 awards

Extraordinary Effort: 13 awards

Innovation: 15 awards

Program Development: 1 award

Safety Results: 14 awards

Significant Cost Reduction: 1 award

The names of all the recipients will be shown during the Q&A session at the end of this meeting.

25+ YEARS SERVICE AWARDS

25 years

- Frederick Carter
- JoAnne Wold
- Sarvjit Shastri

30 years

- John Hoyt
- Raymond Ziegler

45 years

- Kenneth Sidorowicz

55 years

- Clarence Clark

Argonne Impact Award winners

Enhancement of Argonne's Reputation

Andrew Broderick, Felix Lacap, Xuli Wu, Arista Thurman, David Wallis, Steve Potempa, John Smejkal, Zachary Basile, Brian Robinson, Ken Sidorowicz, Cyndi Salbego, Jessi Czyz, Saul Lapidus, Randy Flood, Nancy Lazarz, Jan Illavsky, Kristin Ahrens, Susan White DePace, Jacki Flood

Arvind Ramanathan

Extraordinary Effort

Joseph Budz

Ralph Bechtold

Curtis Forth, Aleksandar Marcetic, Christopher Sawatski

Joseph Strzalka, Benjamin Davis, Raymond Ziegler, Don Jensen, Ignacia Guerra, Mike Fisher, Altaf Khan, Qingteng Zhang

Cara Hotz, Sonya Soroko, Madison Broeker, Alison Mackey, Cheryl Drugan, Kevin Brown, Janet Barrett, Lorenza Salinas, Carolyn Steele, Andrea Manning, Elizabeth Santay, Nikki Forrester, Jane Andrew, Michelle Kelly, Karolina Michalska, Paula Bulaon

Ashley Wayman, Shane Flood, Matt Spilker

Loretta Cokeley



Rolando Gwekoh, Kristine Mietsner, Spiro Skiadopoulos, Dusan Banjanac





Please do not hesitate to reach out
Always welcoming feedback !
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