

JANUARY 26, 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.

January 26, 2022, PSC All Hands Meeting

IN MEMORIAM: GUY MACHA

Guy Macha served the University of Chicago Center for Advanced Radiation Sources (BioCARS, ChemMatCARS, GSECARS) and its users as a vacuum specialist, user support specialist, and safety officer

“A valued staff member of CARS for 26 years, he will be remembered for his respected insight, advice, subtle sense of humor and kindness. Guy will be missed.”

The APS joins CARS in expressing our deepest sympathy to his beloved wife Alice, his family, and friends



OUTLINE

- Updates – Laurent Chapon
 - Safety
 - Staff Changes and Service Awards
 - Lab performance, DOE Triennial Review, Budget 2022
- APS Operations, COVID-19 Protocols, AES Highlights – John Connolly
- XSD and Science Highlights – Jonathan Lang
- ASD Highlights – John Byrd
- DE&I Plan 2022 – Fanny Rodolakis and Becky Sikes
- Individual Development Planning Overview – Tanya Griffin
- APS-U Project Update – Jim Kerby and Elmie Peoples-Evans
- Q&A – Senior Management

SAFETY

- **Photon Sciences safety record is excellent for FY22**

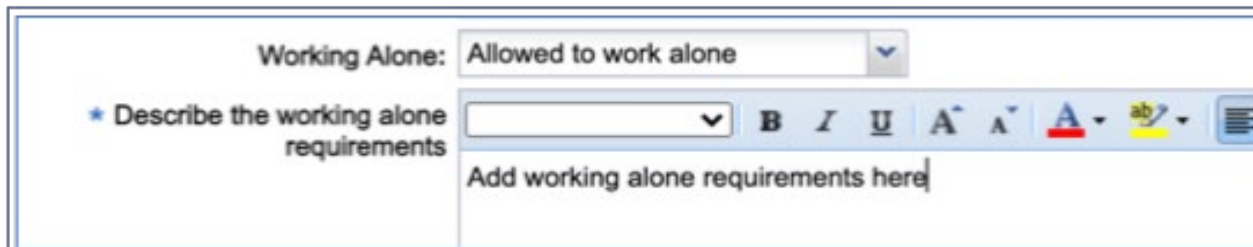
- 0 First Aid Injuries
- 2 OSHA Recordable Cases (TRC), both COVID related
- 2 Days Away or Restricted Time (DART)

- **Update to AWARE to include Working Alone**

Working Alone update added in the Define Scope of Work tab in the Scope of Work section

If “working alone is not allowed” is selected from drop-down menu, text “Not allowed to work alone” will prepopulate requirement box

If “Allowed to work alone” is selected, you must describe working alone requirement in requirements box (see example below)



Working Alone: Allowed to work alone

★ Describe the working alone requirements

Add working alone requirements here

SAFETY

- **Upcoming “Safety Refresh Day”**
- **Date to be determined as Lab approaches return to normal operations**
 - Lab-wide and division-specific safety-focused events
 - Review of WCDs
 - Refresh pre-job briefings
 - Housekeeping
 - Will include re-entry/hybrid work topics for individuals that have not been onsite recently

APS UPGRADE PROJECT: MANAGEMENT CHANGES

- **Jim Kerby:** interim project director
- **Elmie Peoples-Evans:** interim project manager
- **Bob Hettel:** advisor to the PSC ALD



Jim Kerby



Elmie Peoples-Evans



Bob Hettel

NEW STARTERS

- APS Ops

- **Mike Edelen:** director, APS Engineering Support Division
- **John Quintana:** PSC Mission Readiness Group leader
- **Yine Sun:** Accelerator Operations and Physics Group leader
- **Tony Killelea:** APS User Program Office administrator
- **Nathan Rogers:** APS User Program Office administrator

- Life Sciences CAT

- **Spencer Anderson:** Operations manager



Mike Edelen



John Quintana



Yine Sun



Nathan Rogers



Spencer Anderson



Tony Killelea

25+ YEARS SERVICE AWARDS

25 years

Haung Nguyen
Oleg Makarov

30 years

Animesh Jain
Christine McGhee
Phillip McNamara
Marion White
Michael Johnson
Wayne Michalek
Eugene Swetin

ARGONNE FY21 PEMP GRADES AND TRENDS

PEMP Goal	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21
1 Mission Accomplishment	A-	A-	A-	A-	A-	A-	A	A	A
2 Design, Fabrication, Construction and Operations of Research Facilities	A-	A-	A-	A-	A-	A-	A-	A-	A
3 S&T Program Management	A-	B+	B+	A-	A-	A-	A-	A-	A-
4 Lab Leadership and Stewardship	B+	B+	A-	B+	B+	B+	A-	A-	A-
5 ES&H	B-	B+	B+	B	B-	B-	A-	A-	B+
6 Business Systems	B+	B+	B+	B+	B+	B+	B+	B+	A-
7 Infrastructure	A-	A-	A-	A	A	B+	A-	A-	A-
8 Safeguards and Security	B+	B+	B+	B+	B+	B+	B+	A-	A-

DOE TRIENNIAL REVIEW



- Covered the period 2017-2021
- 15 reviewers, program managers, and DOE programmatic considerations
- Thank you all for your work and taking part in the review

- *“Overall, the reviewers uniformly praised the APS management for its effectiveness in successfully operating the APS facility with high reliability and excellent productivity for a large user base during the past review period. They concurred that the APS satisfactorily addressed most of the BES recommendations from the FY 2017 review.”*

RECOMMENDATIONS



- Develop a robust plan to carefully assess the balance of staffing level and resources to ensure APS is attractive and competitive for recruitment/retention of a highly talented workforce and to support sustained and successful operation within the available funds



- As the APS-U construction phase ramps up, it is essential that all activities across the APS complex are carried out safely; develop a robust plan for regular communication with all facility staff and contractors on safety procedures to be followed throughout the construction phase and transition to APS operations

RECOMMENDATIONS II



- Provide an evaluation of the organization structure and staffing allocation that includes engagement of the staff to obtain feedback on ways to improve operational effectiveness and communication, and information flow across the APS complex, especially after completion of the APS-U

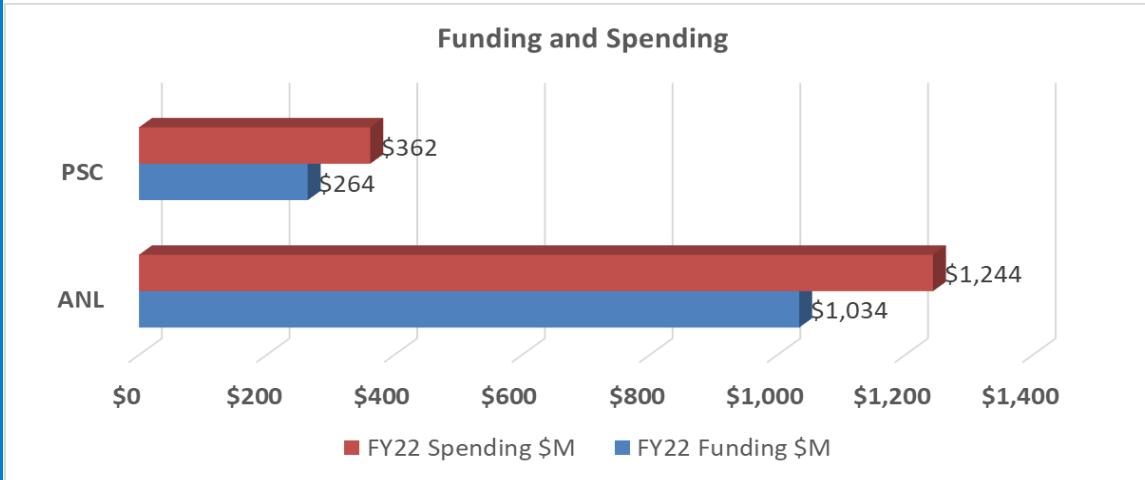


- BES encourages the APS to use the upcoming dark period to critically evaluate the current proposal review process and develop an improved process with potential to grow the APS userbase to exploit its world leading coherent hard x-ray capabilities; in addition, evaluate the current organization structure of the APSUO to ensure broader representation of the APS userbase and to improve communication between the APS and the scientific community

NEXT STEPS

- Provide plan to address the above recommendations to DOE by March 26, 2022
- Engagement of PSC leadership teams with APS and APS-U staff to create detailed plans and milestones
- Engagement with APSUO, PUC and SAC

PSC FY22 BUDGET (C. MCGHEE)



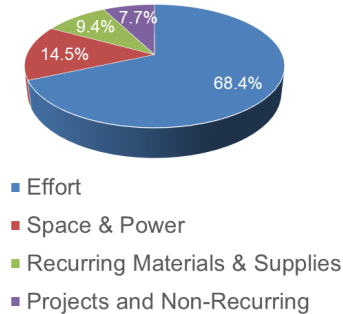
Lab initiatives include:

- APS Upgrade
- ECDC
- ALCF

- PSC is in good shape, plans to spend 25% of Lab spending in FY22
- PSC has carryover funds, so we can spend more than we are receiving in funding
- \$175M of spend is planned for APS Upgrade
- \$150M of spend is planned for APS Operations
- \$37M of spend is planned for other DOE and Strategic Partnership projects

APS OPERATIONS – FY22 BUDGET

Salary	\$102,626,197
Space & Power	\$21,753,722
Recurring M&S	\$14,120,081
Projects and Non-Recurring	\$11,500,000
Total	\$150,000,000



- CAMS must ensure staff supporting their projects know correct project task (WBS) for effort charges
- Supervisors must review projects and project tasks reported in Dayforce before authorizing to confirm staff are charging correctly
- Monthly financial reports are provided to CAMS and group leaders for review of effort, other costs
- All staffing requests must be approved by Senior Management Team before posting/hiring; send staffing requests including Argonne Associates to Christine McGhee to route for approval

APS OPERATIONS AND COVID PROTOCOL + AES DIVISION INPUT



JOHN CONNOLLY

Deputy ALD for Operations, PSC
Division Director, APS Engineering Support
Photon Sciences Directorate

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APS OPERATIONS HIGHLIGHTS



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APS OPERATIONS UPDATE

APS General Operations with COVID protocol

- The APS accelerator complex operating at high reliability
 - 2021-3 run ended at 97.97%; Feb 1 user run start
 - Final 8 weeks of run **averaged** ~99.5% reliability with 3 of those weeks achieving 100% uptime

APS remains in a state of **limited operations and maximum telework** status

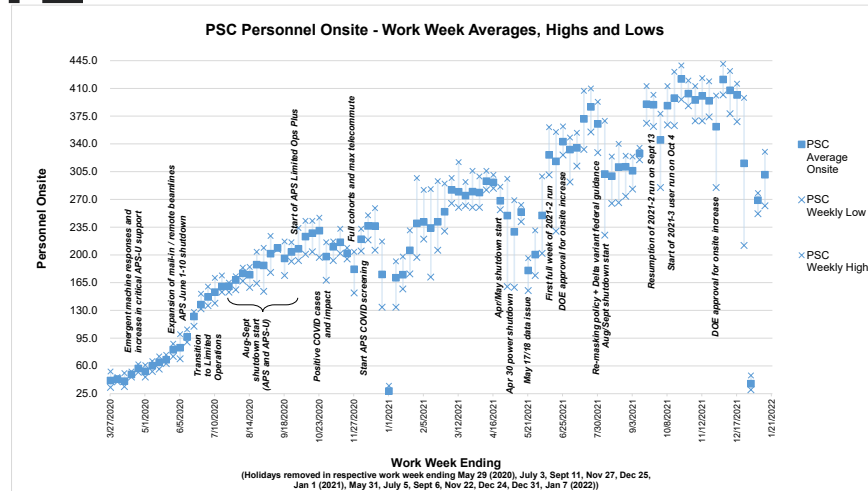
Face coverings required, regardless of vaccination status; **KN-95 masks due into Central Stores soon**

SHIELD screening test increased enrollment due to Omicron transmissibility; PSC, including CAT staff, contractors and others, constitute about 1/3 of total Argonne enrollment

- First week results: **3.5% test positivity; 22 out of 41 positives were asymptomatic cases**
- Staffing impacts in technical work groups, **successfully navigated** to date by resource managers

Instant Trace proximity badge program **significantly expanded**, now with over 700 proximity badges in use at PSC, including CAT staff, contractors and others

- Proximity badges assigned to general users** hosted onsite at XSD and CAT beamlines



APS regularly has 400+ staff and limited users onsite during a run period

QUARANTINE AND ISOLATION GUIDANCE

Report all close contacts and positive results to the COVID-19 Question Line at 630-252-2555.

January 10, 2022

	Fully Vaccinated AND Boosted	Fully Vaccinated in the last six months <i>(or two months for J&J)</i> AND Not Boosted	Fully Vaccinated more than six months ago <i>(or two months for J&J)</i> AND Not Boosted	Unvaccinated
Exposed to someone with COVID-19	QUARANTINE <ul style="list-style-type: none"> Wear a face covering around others for ten days. Test on day five, if possible. If you develop symptoms, get a test and stay home. 		<ul style="list-style-type: none"> Stay home for five days and wear a face covering around others for five additional days. Test on day five, if possible. If you cannot quarantine, you must wear a face covering for 10 days. 	
Tested positive for COVID-19	ISOLATE <ul style="list-style-type: none"> Stay home for a minimum of five days and until your symptoms are resolving and you have no fever. Wear a face covering around others for five additional days. 			

Find more at www.cdc.gov/coronavirus/2019-ncov/your-health/quarantine-isolation.html.

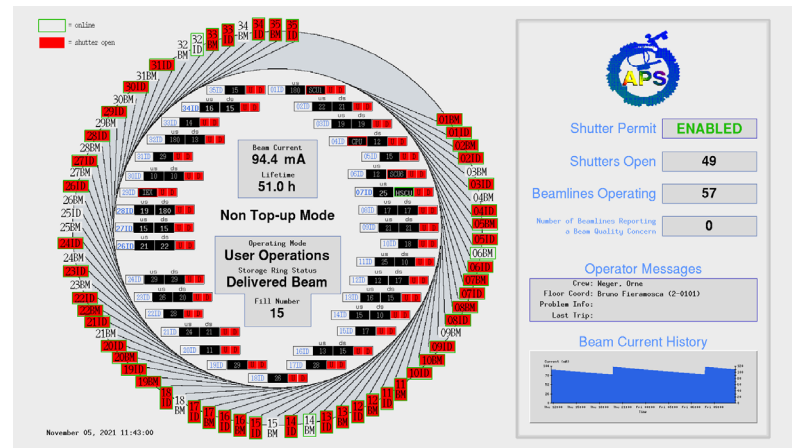
APS OPERATIONS UPDATE

■ APS User Program:

- Vast majority of beamlines remain enabled for scientific programs
 - Mail-in/remote experiments remain encouraged
 - Onsite users capped at 2 onsite users per experiment
 - Have made exceptions where a larger team is required and can be safely accommodated
- Onsite users must be listed as such on approved ESAFs and required to show proof of vaccination or unvaccinated with exemption and proof of testing enrollment
- Expansion of proximity badge to general users onsite

■ Argonne General Information:

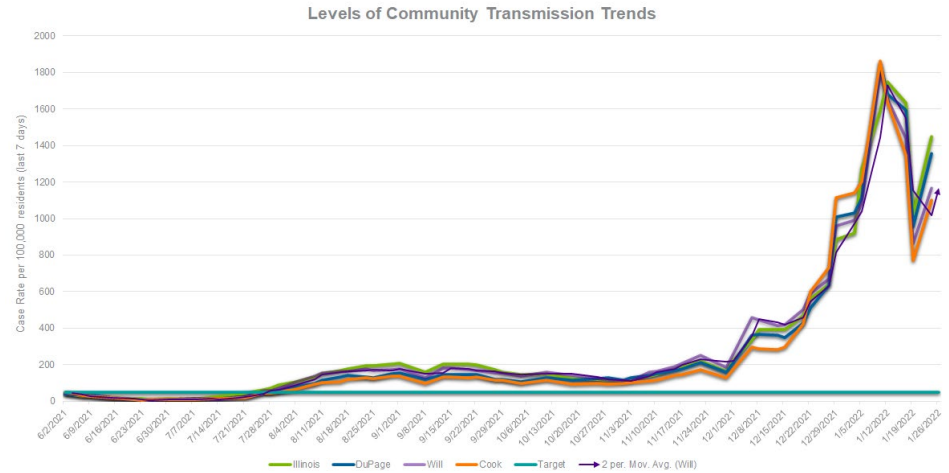
- Argonne site remains in limited operations and maximum telework status per the DOE Workplace Safety Plan and Argonne Safety Plan
- Argonne onsite totals capped at 2,250 personnel daily average (inclusive of employees, contingent workers, users, contractors, deliveries)
- Numerous business and facility restrictions in place: Travel, limited support facilities



APS Operations dashboard on Nov 5, 2021 (324 singlets non top-up operation since Nov 2)

ARGONNE SITE RE-ENTRY

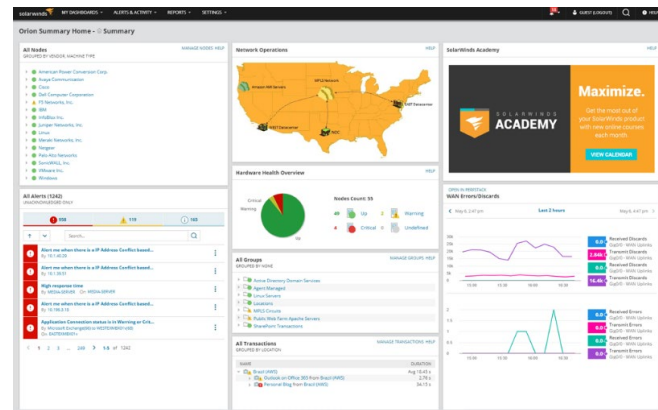
- Re-entry plans submitted to DOE previously – remain under review
 - Remains subject to community transmission metrics or alternative metric
- If approved by DOE, the following will be triggered:
 - Returns local decision making to Argonne with commensurate DOE-ASO oversight
 - Minimum 30-day notice to employees of re-entry timeline; re-entry orientation training
 - Numerous preparatory activities initiated ahead of population return, e.g., enhanced cleaning
 - Hybrid work elections formalized; onsite population caps eased or removed outright
 - Business policies reinstated including expanded travel and event/hosting guidance
 - Support facilities/services re-opened (Guest House, fitness center, Bright Horizons expanded capacity) or start phase-in (food service)



CDC COVID County View Data – Levels of Transmission as of Jan 23 2022 for DuPage, Will, Cook Counties

SOLARWINDS VULNERABILITY

- SolarWinds provides IT services in support of managing core network services and configurations: 300,000 customers including several government and Fortune 500 companies
- Nation State-led compromise of SolarWinds – malicious code added to customer software updates available from March–June 2020
- Alert of SolarWinds incident provided by DOE on Sunday, December 13, 2020
- Argonne has five installations of SolarWinds – three APS installations ran a vulnerable version from April – Sept 2020
- Argonne conducted immediate analysis of provided indicators of compromise – **no indication** of compromise at Argonne identified; as a proactive measure, the three systems were taken offline, to be replaced upon direction of DOE and DHS
- Since this initial incident, Argonne BIS, Cyber, and APS IT responded to numerous DHS/DOE data calls
- Plan to build new SolarWinds instances approved by DOE and Argonne Cyber in late May 2021
- Rebuild followed strict plan framework; Phase 0 (install/build and test) completed in late Oct 2021
 - **Phase 1 (move to production) authorization received Jan 17 2022 from Cyber and ASO; Forecasting an in-service date of Jan. 31**



Example of SolarWinds Orion dashboard for network management

AES DIVISION HIGHLIGHTS



JOHN CONNOLLY

Deputy ALD for Operations, PSC

Division Director, APS Engineering Support

Photon Sciences Directorate

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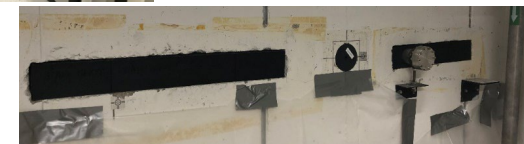
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DESIGN & DRAFTING

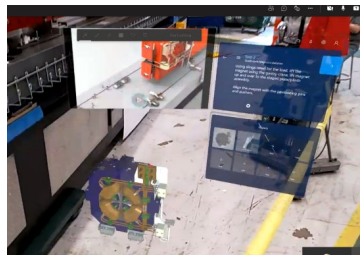
- Novel use of 3D printed containers to hold lead shot shielding
 - Developed by Geoff Pile, installed by Glenn Moonier
- Addition of new larger capacity printer in the Additive Manufacturing Lab
 - Stratasys F770
 - Build envelope of 1000 x 610 x 610 mm (39.4 x 24 x 24 in.)
- Virtual tour/augmented reality investigation
 - Matterport - Virtual Tours/Digital Twin – Data Tags
 - Virtual installation instructions/maintenance instructions
 - Microsoft HoloLens Headset – guide development



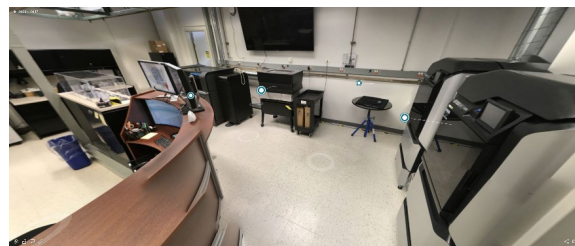
Matterport data tags



Lead shot shielding containers



Microsoft guides



Matterport Digital Twin

AES SHUTDOWN HIGHLIGHTS

- Replaced L4 water skid in the linac gallery; the second installation in upgrading five-total skids
- Replaced 6 of 12 control valve actuators on the linac gallery, linac tunnel, and PAR process water system
- Assisted RF Group with Canon coupler replacement in booster RF cavity 2
- Completed 4 Front End Equipment Protection System (FEEPS) upgrades
 - **Remaining 2 FEEPS upgrades (with exception of 35-BM and 38-AM FE) will be completed in April/May 2022 shutdown, the culmination of a 3+ year effort in upgrading 55 FEEPS**



Above right: New L4 water skid

Above left: New control valve actuator

Left: Obsolete control valve actuators

PSS AND ACIS UPGRADES

▪ Personnel Safety System (PSS)

- Second installation of the GEN4 PSS was completed at 25-ID, installed in Oct 2021 and commissioned and validated in early Nov 2021
- All beamlines will eventually be upgraded to this PSS generation design during or after the APS-U dark period

▪ Access Control Interlock System (ACIS)

- ACIS Upgrade Project
 - Linac/PAR ACIS-U hardware and software modules are connected; integrated testing is in process to verify many interconnections in internal rack/panels, some software modules and network interfaces
- ACIS for Linac Extension Area (LEA)
 - Field wiring was connected in October 2021; validation testing was completed during the January 2022 shutdown



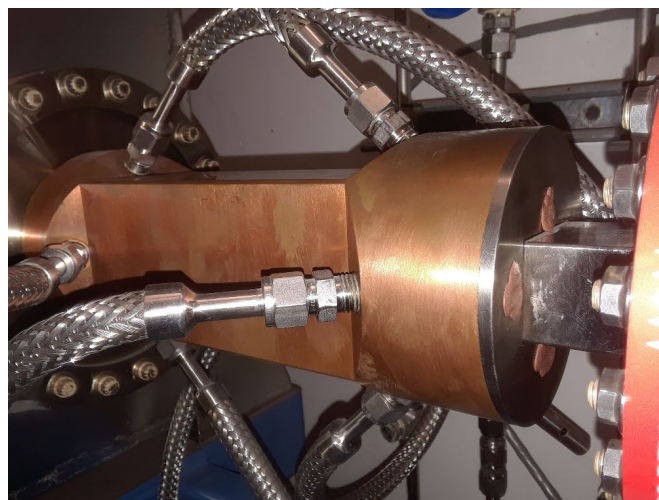
Above: 25-ID PSS controls and cabinets installed

Below: ACIS-U module connections and integrated testing



EFFORT TO PLUG COOLING CHANNELS

- A total of 78 front-end (FE) components, many in operation 20+ years, contain Lee plugs that are used to seal cooling channels
 - These components contain 638 Lee plugs in total
- Over the last 3 years, 7.7% of these FE components have developed leaks through the Lee plugs
- Most of these components will be scrapped at the dark time
- To reduce downtime risk, several different options were tested for plugging and sealing the cooling channels
 - Copper Stick 2-part epoxy putty selected for application
- During the recent maintenance shutdown, all accessible FE components containing Lee plugs were plugged and sealed using Copper Stick
- There were 2 components located in the first optics enclosures at sectors 3 and 4 that were inaccessible due to installed shielding



X-RAY SCIENCE DIVISION UPDATE



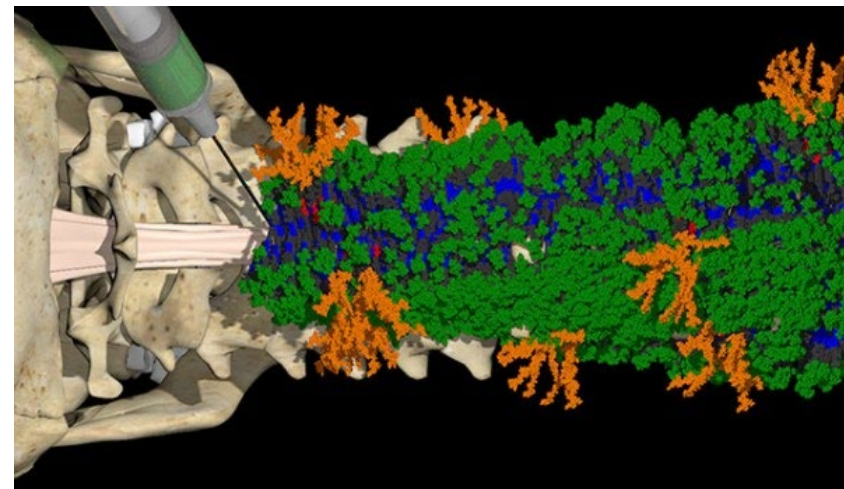
JONATHAN LANG

Division Director, X-ray Science Division
Photon Sciences Directorate

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“DANCING MOLECULES” SUCCESSFULLY REPAIR SEVERE SPINAL CORD INJURIES

- Fine-tuning “dancing molecules” motion within a nanofiber scaffold network makes them more agile, results in greater efficacy to reverse paralysis, repair tissue after severe spinal cord injuries
- Synchrotron solution x-ray scattering at DuPont-Northwestern-Dow Collaborative Access Team was used to understand scaffold morphology



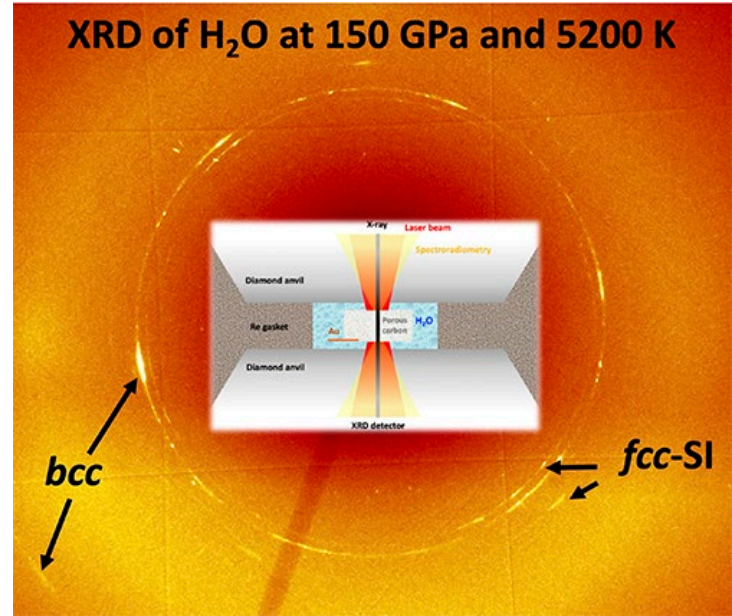
A new, injectable therapy forms nanofibers with two different bioactive signals (green and orange) that communicate with cells to initiate repair of the injured spinal cord - Illustration by Mark Seniw

Z. Álvarez, A.N. Kolberg-Edelbrock, I.R. Sasselli J.A. Ortega, R. Qiu, Z. Syrgiannis, P.A. Mirau, F. Chen, S.M. Chin, S. Weigand, E. Kiskinis, S. I. Stupp, “Bioactive scaffolds with enhanced supramolecular motion promote recovery from spinal cord injury,” *Science* **374**, 848 (12 November 2021). DOI: 10.1126/science.abh3602

HOW DO ICE GIANTS MAINTAIN THEIR MAGNETIC FIELDS?

- A layer of “hot,” electrically conductive ice could be responsible for generating magnetic fields of ice giant planets like Uranus and Neptune
- DAC and XRD studies at GeoSoilEnviroCARS 13-ID revealed the conditions under which two such superionic ices form
- A few thousand experiments over a decade yielded high-quality

V. B. Prakapenka, N. Holtgrewe, S.S. Lobanov, A.F. Goncharov, “Structure and properties of two superionic ice phases,” *Nat. Phys.*, published on line 14 October 2021. DOI: 10.1038/s41567-021-01351-8



The figure illustrates how the experiments were performed, revealing two forms of superionic ice. Image courtesy of Vitali Prakapenka (The University of Chicago)

FIRST USE OF THE NEW ALCF POLARIS TESTBED DURING APS BEAM TIME

Integration of 8-ID-I XPCS Operations with ALCF Computing Resources

Technical Achievement

A team comprising staff at the APS, the Argonne Leadership Computing Facility (ALCF), and the Data Science & Learning (DSL) division have successfully demonstrated the first use during APS beam time of the new ALCF Polaris testbed

Significance and Impact

This work lays the path to utilization of the new Polaris supercomputer and the soon to be delivered Aurora supercomputer, for routine use at APS instruments for facile real-time and post-experiment data processing and analysis by both APS staff and APS users (on-site and remote)

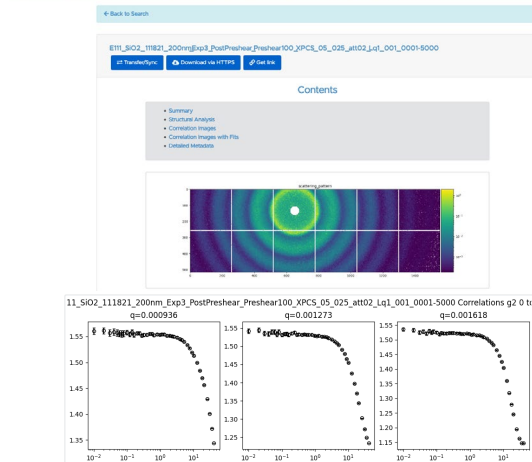
Research Details

- APS-developed high-performance computing software, XPCS-Eigen, is deployed on the Polaris testbed for data processing
- The APS Data Management System is integrated with Globus Glacier/FuncX workflow tools to provide a single end-to-end data pipeline
- A convenient web-based data portal enables staff and users (on-site and remote) to view data as it's acquired and processed in near real-time



Artist rendering of the new ALCF Polaris supercomputer.

ALCF Community Data Co-Op | Search | E11_SIO2_11821_200nmExp3_PostPreShear_Preshear100_XPCS_05_025_att02_Lq1_001_0001-5000 | Login | [submit@slac.stanford.edu](#)



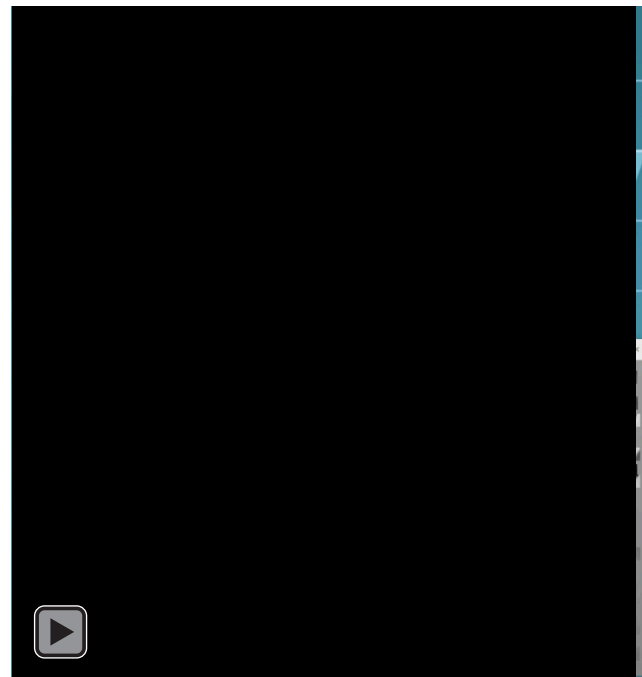
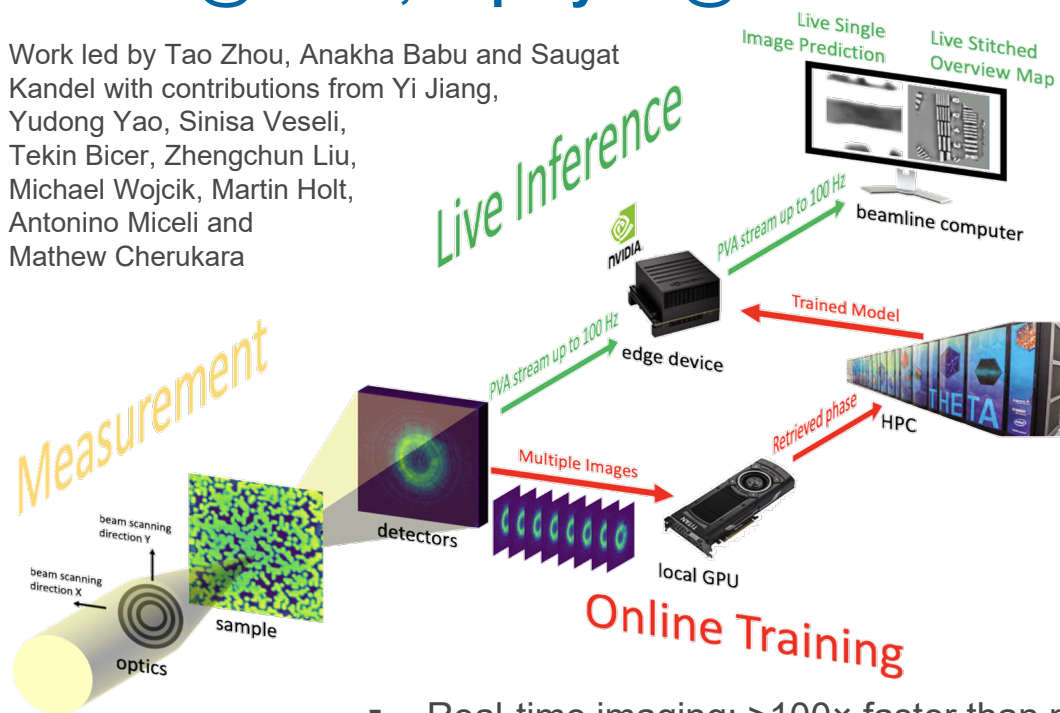
Web-based data portal accessible to on-site and remote users showing processed XPCS data from APS 8-ID beamline.

XSD: Suresh Narayanan, Hannah Parraga, Faisal Khan, Miaoqi Chu, Sinisa Veseli, John Hammonds, Nicholas Schwarz; ALCF: Ryan Chard, Nickolaus Saint, Rafael Vescovi, Ben Blaiszik, Ian Foster

AI@EDGE ENABLES REAL-TIME PTYCHOGRAPHY

Train AI @ ALCF, deploy AI @ beamline

Work led by Tao Zhou, Anakha Babu and Saugat Kandel with contributions from Yi Jiang, Yudong Yao, Sinisa Veseli, Tekin Bicer, Zhengchun Liu, Michael Wojcik, Martin Holt, Antonino Miceli and Mathew Cherukara



- Real-time imaging: $>100\times$ faster than phase retrieval
 - Demonstrated live inference at 100 Hz on 512×512 -pixel detector images
- Lower-dose imaging : $25\times$ less data than phase retrieval
- Future work: other techniques, closed-loop experimental steering

ACCELERATOR SYSTEMS DIVISION UPDATE



JOHN BYRD

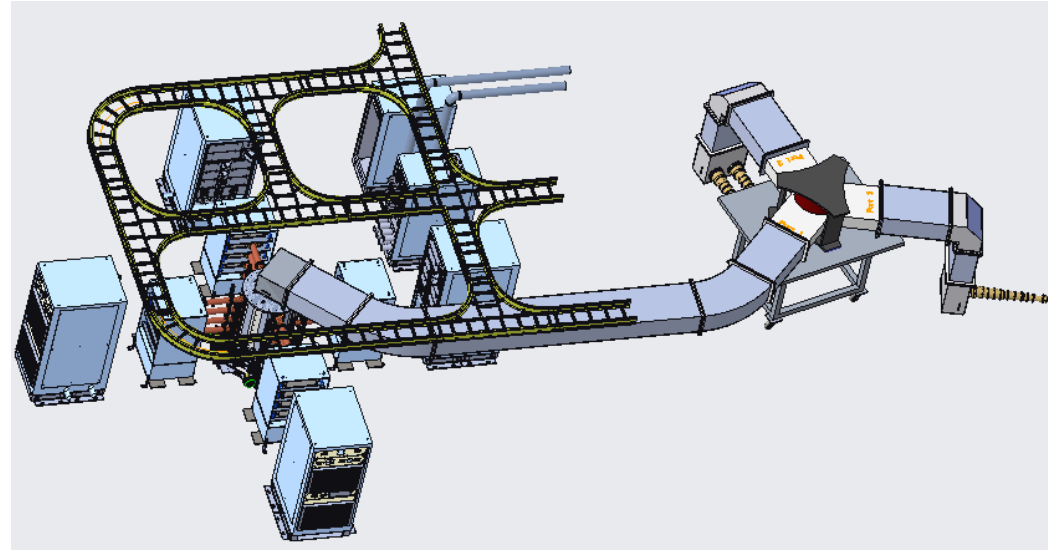
Division Director, Accelerator Systems Division
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SOLID-STATE RF PROGRAM IS PROGRESSING

First 200-kW unit from vendor due in June 2022 for testing in B400A

- We are planning to replace the klystron-based storage-ring RF system over the next decade due to obsolescence; the configuration will be one amplifier/cavity with 12 cavities (storage ring) and 4 cavities (booster)
- We have selected a vendor (R&K Electronics) to provide this system and are expecting the first 200-kW unit in June 2022 for testing in B400A
- We are planning to order 4 additional units in FY23 with plans for installation in Sector 40 sometime after APS-U commissioning
- DOE-BES has encouraged us to submit a MIE proposal to fund the remainder of the system in FY25; total cost of the system is \$40-\$50M



Planned configuration of the first SSA unit in 400A; 4 SSAs feed a central combiner cavity that couples to a waveguide

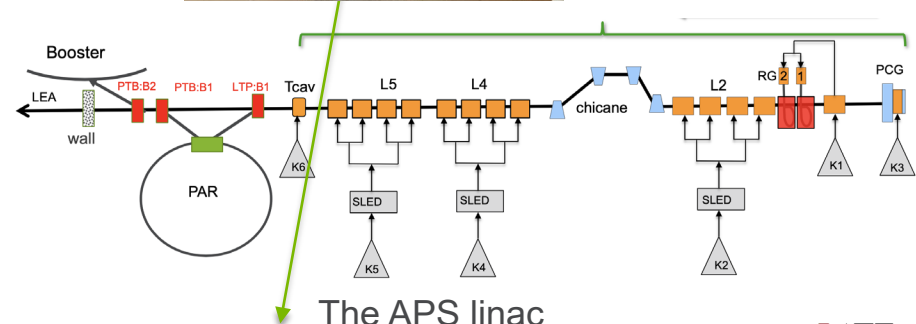
APS LINAC REFURBISHMENT IS HAPPENING

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

- A refurb plan has been developed by Yine Sun focused on a phased upgrade of the RF systems; a new modulator has arrived along with a new Canon klystron
- Following high-power tests, installation in the APS linac in early 2022 timeframe; first digital RF controller has been tested on the linac and will be implemented with the new RF station
- A second modulator/klystron has passed the factory acceptance test and will arrive in Feb 2022
- Several other improvements are also moving forward (timing, magnet power supply, etc.)



Scandinova modulator and Canon klystron installed in test area; will move to K2

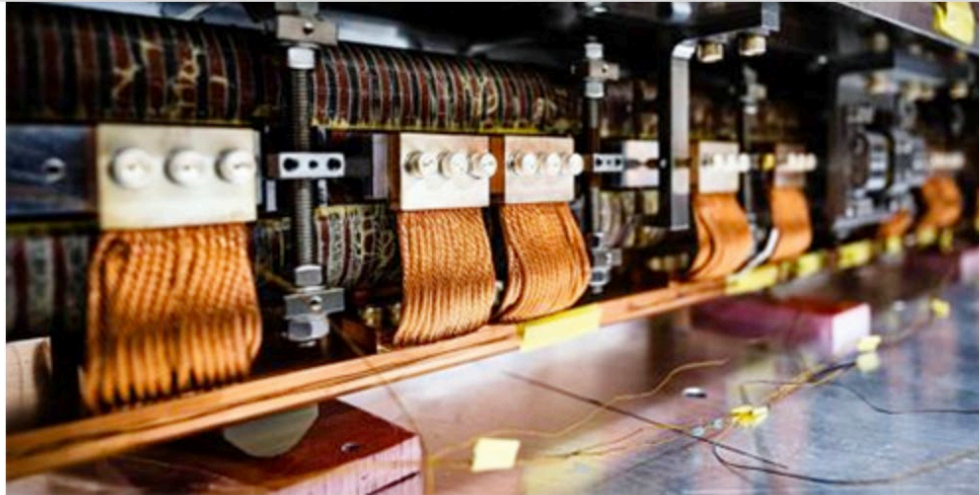


The APS linac

FIRST APS-U SCU PASSES COLD-TEST

First production model SCU cryostat was cooled to 4 deg-K with core magnets powered

- APS-U Project is building three new SCUs for APS-U with a new design of a full-straight cryostat with two SCUs/cryostat



<https://www.aps.anl.gov/APS-News/2022-01-14/everythings-cool-aps-upgrade-components-pass-their-first-cold-tests/2022-01-14>

The first production model superconducting undulator magnet for the Advanced Photon Source Upgrade. The upgraded facility will use eight of these magnets to help generate some of the world's brightest X-rays. (Image by Jason Creps/Argonne National Laboratory)

ASD IS PURSUING SEVERAL DOE-BES R&D PROGRAMS IN ACCELERATOR TECHNOLOGY

▪ **Nb₃Sn SCU (Efim Gluskin, Ibrahim Kesgin)**

- Nb₃Sn superconducting wire has the potential for a ~30% field increase compared with NbTi; in the final year of this program and have tested 0.5 prototypes up to full field; awaiting vendor delivery of 1.1-m cores for final bench testing; if successful, will install in the APS prior to APS-U dark time for beam tests

▪ **SCU-FEL (Yury Ivanyushenkov, Efim Gluskin)**

- SCUs have huge promise for FELs but several challenges, including high-precision photon-electron beam alignment at 4 deg-K; in a collaboration with LCLS, working to demonstrate that this can be achieved; will build two SCUs that will be added to the end of the HXR free-electron laser (FEL) at LCLS; SCUs are currently in design stage with demonstration expected in ~CY2025

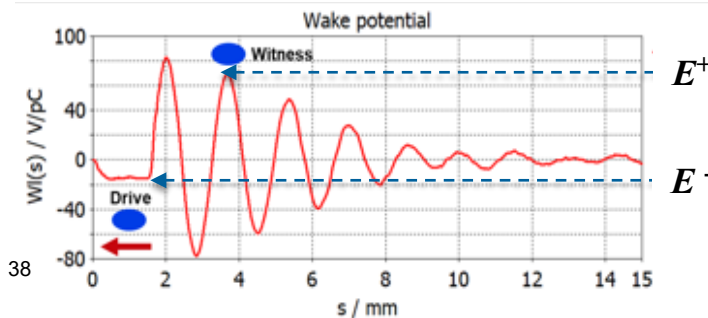
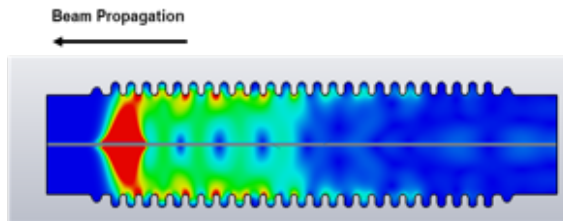
▪ **Cavity-based XFEL (Kwang Je Kim, Yury Shvyd'ko, Marion White, Deming Shu)**

- In a collaboration with LCLS, are working to build an x-ray optical cavity for resonating LCLS x-rays with the goal of increasing longitudinal coherence of x-ray pulses, increasing the peak brightness by several orders of magnitude and creating a true x-ray laser

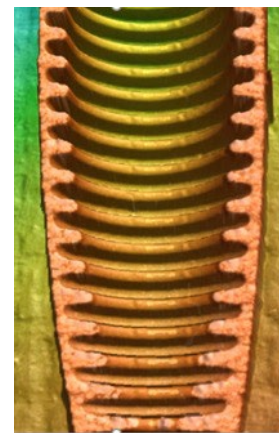
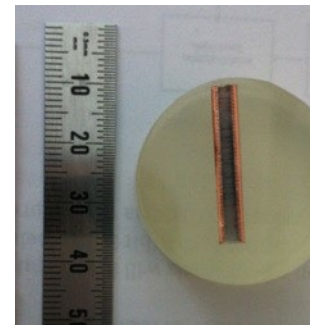
SUB-THZ WAKEFIELD ACCELERATION: A PROMISING PATH TOWARD COMPACT FEL DRIVER LINAC

ASD is looking to the future for options beyond the APS-U; focus is on compactness, energy-transfer efficiency, simplicity, and cost

- Focusing on collinear wakefield accelerators (CWA) at sub-THz frequencies of 180 GHz
- Excellent machining results in using modern electroforming techniques on a mandrel
- Basic concept is verified; moving toward a beam test of a single CWA module



Wakefield acceleration uses the wake of a drive electron bunch to accelerate a “witness” bunch; the drive beam is discarded at the end of the linac



angular cut
Argonne NATIONAL LABORATORY 75
1946-2021



PSC

DIVERSITY EQUITY & INCLUSION COUNCIL

Fanny Rodolakis – DEI Council Chair
29-ID IEX Beamline Scientist

Becky Sikes – DEI Council Co-Chair
Lead User FVA/Registrations Administrator

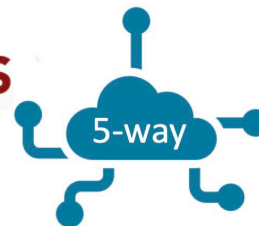
A continuous improvement journey



Advanced
Photon
Source



LCLS



5-way



ALS

ADVANCED LIGHT SOURCE



SSRL



Brookhaven
National Laboratory

NSLS-II

PSC DEI Council Strategic Priorities



Impact
Safety
Respect
Integrity
Teamwork

DEI COMMITMENT

Argonne's Core Values – Impact, Safety, Integrity, Respect, Teamwork

STRATEGIC PRIORITIES

Culture & Workplace

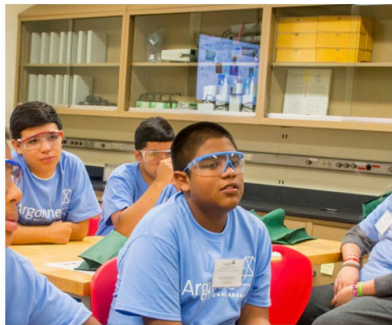
- DEI Webpage
- DEI Newsletter
- Voice of PSC

Career & Workforce

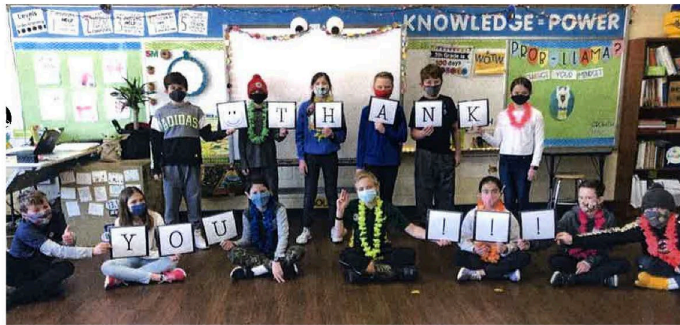
- APS Leaders equipped to include DEI topics in regular division meetings.
- DEI Training/Workshops

Community & Partnership

- Collaborate with DEI Councils and ERGS
- Community Outreach & Educational Programs



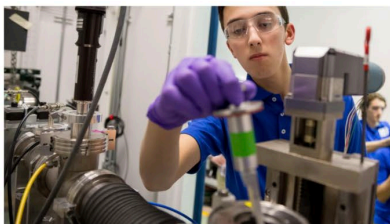
Argonne in the Classroom



GEM
THE NATIONAL GEM CONSORTIUM



Exemplary Student Research Program




24TH National School on Neutron and X-ray Scattering

July 10–22, 2022
Application deadline: Monday, March 7, 2022



Everyone Can Help:
Don't Be a Bystander,
Be an Ally !



Voice of PSC every 3rd Thursday @ 1PM

2021 topics included:

- Dec Holiday traditions (group share)
- Nov Allyship
- Oct Microaggressions
- Sep Gender roles and stereotypes
- Aug The Mental Load
- June "A Simple Way to Be An LGBTQ Ally"
- July Summer vacation plans (group share)
- May Inclusion - DEI is for everyone
- Apr Intellectual Humility
- Mar Psychological Safety
- Feb Building Trust with Your Manager & Overcoming Overwhelm
- Jan "Picture a Scientist" discussion



Resources for employees to address workplace concerns



SPEAKING UP IF YOU HAVE A CONCERN

Argonne 
NATIONAL LABORATORY

CONTACT

Employee Relations Office
Human Resource Services
Phone: 630-252-3434
Email: hrs-er@anl.gov

CONTACT

Navex Global Hotline
Phone: 877-587-2449
<https://anl.tnwreports.com>

CONTACT

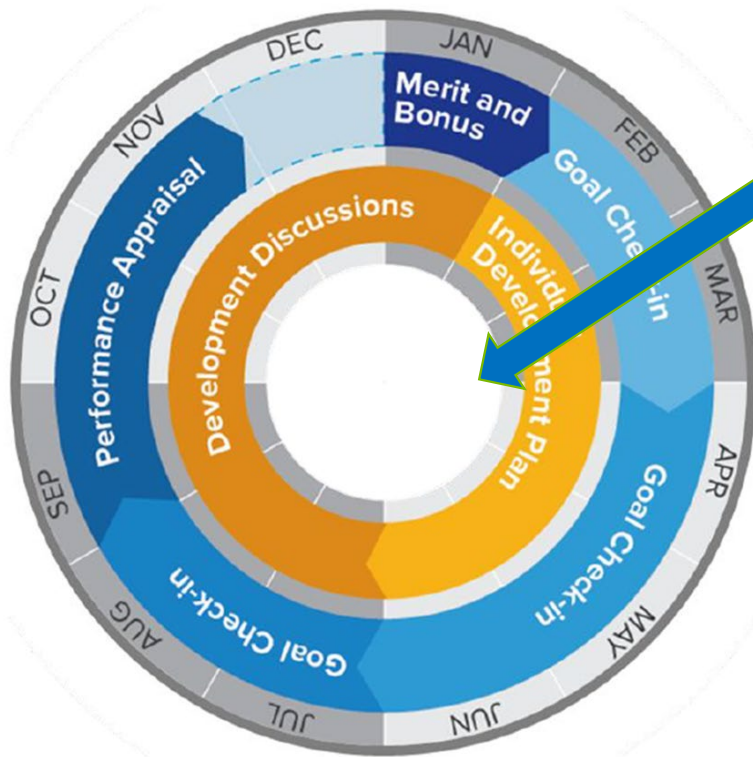
Brad Ginn
Laboratory Ombuds
Phone: 630-252-7098
Email: bginn@anl.gov
<http://inside.anl.gov/pages/ombuds-office>

INDIVIDUAL DEVELOPMENT PLANNING OVERVIEW



TANYA GRIFFIN
HR Manager - PSC
HRS Human Resources Services
PSC All Hands Meeting
January 26, 2022

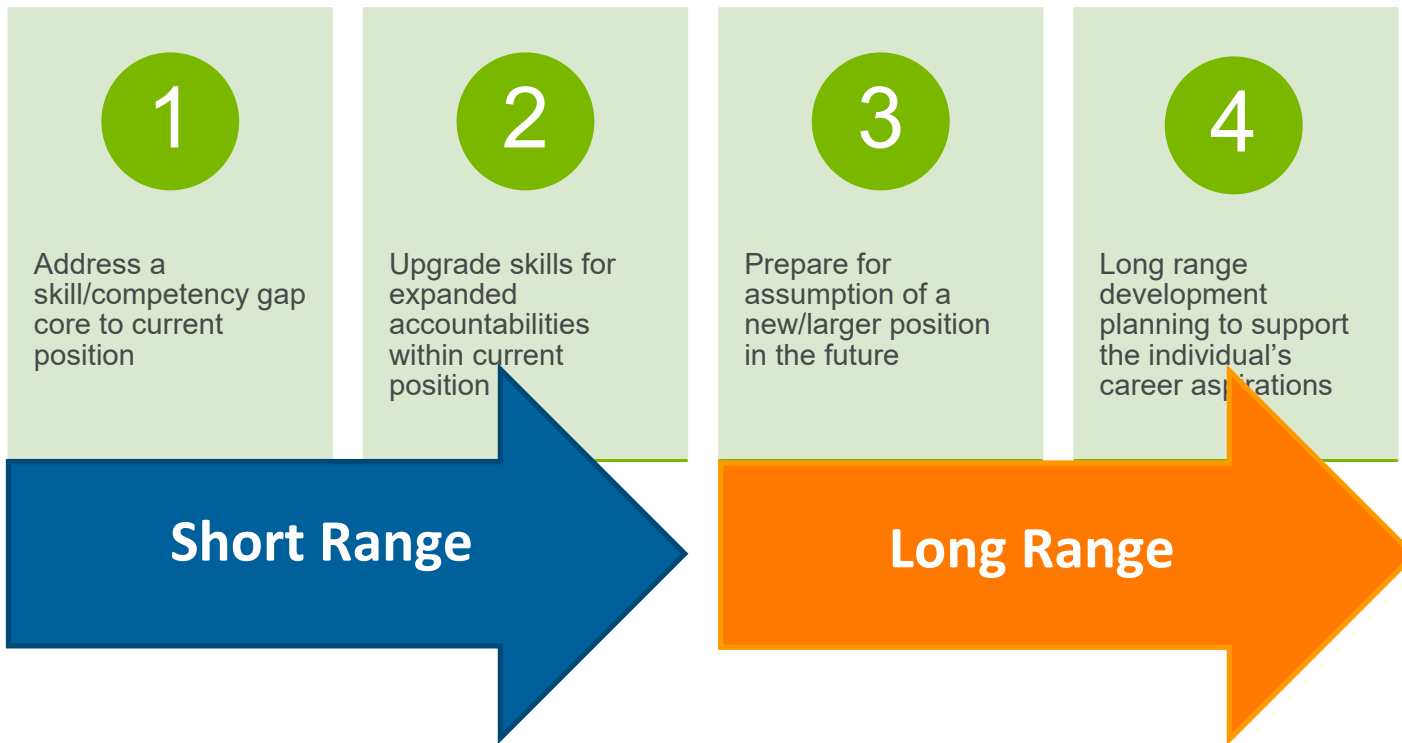
INDIVIDUAL DEVELOPMENT PLANNING



The **shared activity** between the manager and colleague that results in an **individual development plan (IDP)** to improve **skills, knowledge or behaviors**

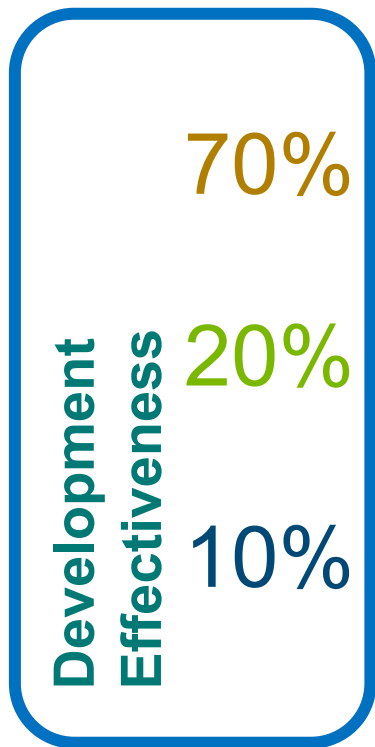
The plan aligns with the **current role** expectations and **future** professional and career **goals** and **aspirations**

INDIVIDUAL DEVELOPMENT PLAN



INDIVIDUAL DEVELOPMENT PLAN EXAMPLE

To improve my communications skills so that I am able to present my ideas clearly and succinctly.



On-The-Job Training

- Develop a presentation on the status of my goals and present to my manager
- Prior to meetings, I will prepare a list of the 3-5 key points I want to make and develop high level talking points
- Present an overview of what our team does to a different department



Other People

- Within the next month, I will ask Sally Smith, my peer, and my manager to provide me with real time feedback about how I am communicating
- Spend time observing Chris and how they communicate

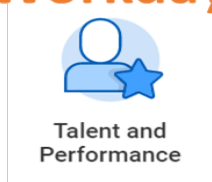


Courses and Training


- Take a presentation skills course either online or in-person before the end of the year.

ENTERING DEVELOPMENT ITEMS

Workday




- Talent and Performance
 - My Individual Goals
 - My Goals & Activity Stream
 - Development Items
 - More (3)

 **My Development Items** Tanya Griffin ⋮

Add

Workday

 **My Development Items** Tanya Griffin ⋮

Development Item *

Additional Information

Format ▼ **B** *I* U ▲ ⋮ 🔗

Relates To

Status *

Details

Start Date

📅

Completion Date

📅

Status Note

Last Updated By

(empty)

Last Updated

(empty)

Created by

(empty)

APS-U PROJECT UPDATE

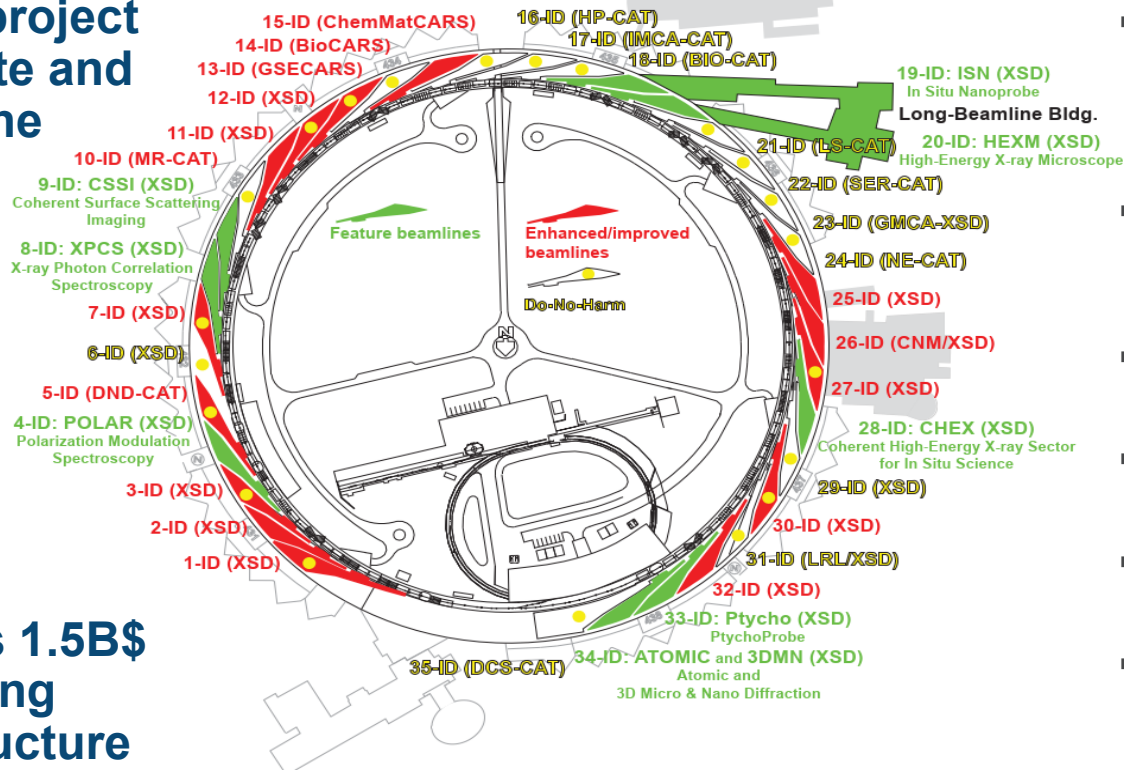


Jim Kerby, Interim Project Director
Elmie Peoples-Evans, Interim Project Manager
PSC All Hands Meeting
January 26, 2022

APS-U PROJECT SCOPE

815M\$ project to update and renew the facility

Re-uses 1.5B\$ in existing infrastructure



- New storage ring: 42-pm emittance @ 6 GeV, 200 mA
- New and updated insertion devices, including superconducting undulators (SCUs)
- Combined result in brightness increases of up to 500x
- 9 new feature beamlines + Long Beamline Bldg.
- 15 enhanced and improved beamlines
- “Do no harm” beamlines; realign 17 bend magnet lines
- Exploit high-performance computing, AI



RECENT SUCCESSES

- An APS-U Plinth was successfully moved (and removed) from the storage ring enclosure during the recent shutdown
- 1st QMQ module was assembled in 981
- L-Bend vacuum chamber welding is underway in Building 382
- The Long Beamline Building construction is well advanced
- Vendors continue to make progress in production efforts



NEWS AND UPDATES

COVID and Supply Chain effects continue to affect all of us; your health and safety is the most important thing

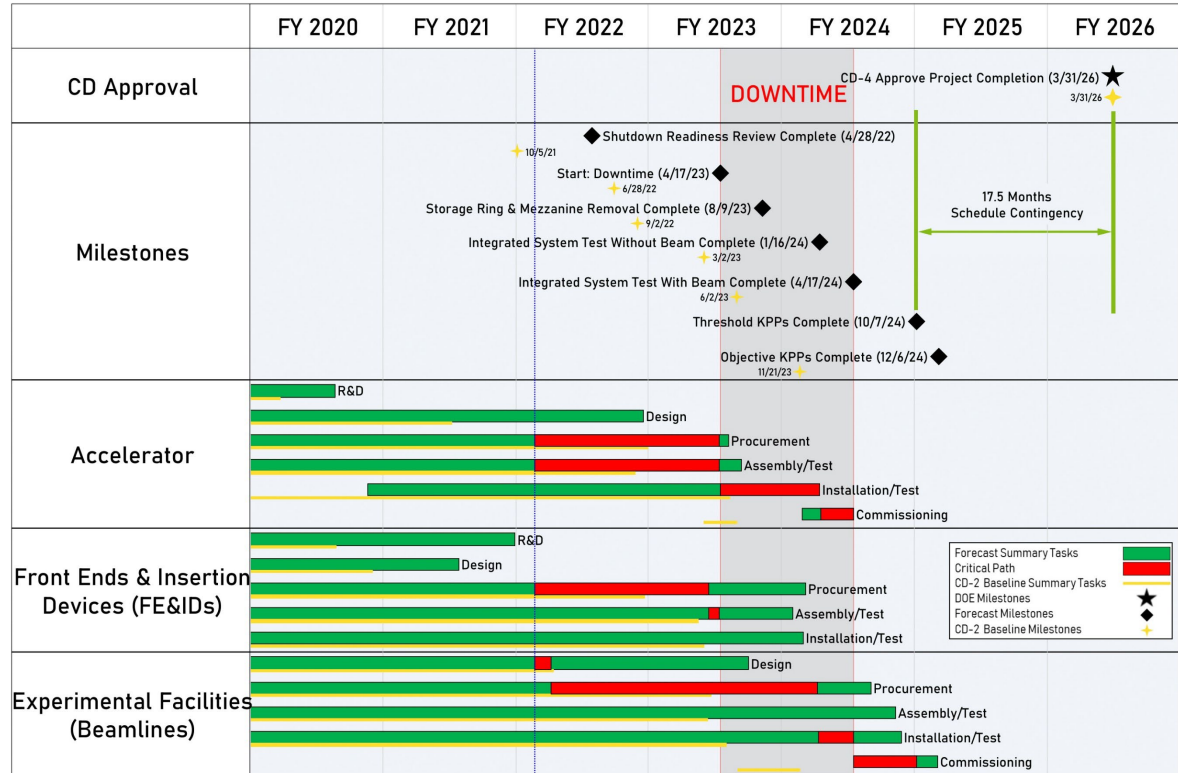
At the highest level, this continues to affect the cost and schedule contingency of the project

All parties...DOE, Argonne, Photon Sciences...are committed to the success of the APS-U, and Photon Sciences; the Advanced Photon Source will continue to be a world-leading hard x-ray facility

All avenues are being discussed to achieve that success, and no decisions have as yet been made

APS-U PROJECT STATUS

- Project is 63% complete; cumulative CPI 0.97, SPI 0.95 (December)
- The start of the shutdown is driven by the accelerator and front-end assembly work; completion of the project is driven by beamline completion
- Contingency continues to be marginal and is being closely watched
- All parties...DOE, Argonne, Photon Sciences...are committed to the success of the APS-U
- All parties also appreciate the great efforts of APS-U staff to continue to deliver in the face of the pandemic and supply chain effects



TEAM EFFORT

- Completing designs → Bids → Better understanding of cost and schedule needs
 - Notify management if a decision is required or something is stuck, our goal is to help
- Working with procurement on quality issues, schedule delays (no matter how small), etc.
 - Procurement can help us enforce contract agreements
 - Reporting all delays helps the team identify trends and work towards strategic responses
- Frequently providing latest forecasts for cost and schedule needs

SUMMARY

- APS-U Project is working to the baseline – contingency is a concern
 - Total project scope, cost, and completion (CD-4) remain unchanged since CD-2
 - Project has shifted from design to full receipt and assembly
 - COVID and associated supply chain ripples having continued effects
- Contingency situation remains marginal; project, Laboratory, and Program watching closely.
- Thanks for your continued efforts

COMMUNICATIONS

APS Upgrade web pages

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

The screenshot shows a web browser displaying the APS Upgrade website. The browser's address bar shows [aps.anl.gov/APS-Upgrade](https://www.aps.anl.gov/APS-Upgrade). The website has a top navigation bar with links for ABOUT, SAFETY, ORGANIZATION, USER INFO, BEAMLINES, MACHINE STATUS, APS-U, MEDIA CENTER, and DEI. Below this is a secondary navigation bar with links for Long-Range Schedule, Publications, Science Highlights, APS Highlights Book, APS Brochure, APS/User News, Telecommuting, Directory, Search, and Useful Links. The main content area features a 'Contacts' section, a sidebar with 'APS-U' links (including APS Upgrade Home, X-Ray Science, Science Opportunities, APS-U Approach, Beamline Selection, News, Upgrade Updates, FAQ, APS-U SharePoint, Documents, Meetings & Workshops, and Organization Chart), and a 'APS Upgrade News' section with three articles: 'Katie Martin Keeps the Advanced Photon Source Upgrade Project on Track' (11.30.2021), 'Fountain of Youth: Michael Kelly's Work Will Grant Longer Life to the Upgraded APS Electron Beam' (10.05.2021), and 'Through the Looking Glass: How a State-of-the-Art Optics System Will Make the APS Upgrade Possible' (09.15.2021). Below the news is an 'APS-U Profiles' section listing Katie Martin, Michael Kelly, Jie Liu, Xianbo Shi, and Dana Capatina. The main content area also features a 'The APS Upgrade: Building a Brighter Future' section with a paragraph about the future of the APS and a 'FROM THE APS UPGRADE PROJECT DIRECTOR' section with a paragraph about the year-long storage ring installation period. At the bottom right, there is a video player titled 'Upgrading the Advanced Photon Source: Researchers...' showing a researcher wearing safety glasses working on a large piece of equipment.

Please do not hesitate to reach out
Always welcoming feedback !
Ichapon@anl.gov

Q&A: QUESTIONS SUBMITTED



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

Q&A

From: Tim Jonasson (ASD)

▪ Storage space at the APS is reaching crisis proportions. We're currently fighting for square centimeters and throwing away good material, spares, and useable parts. Things are getting worse daily with the upgrade. Any plans for increasing storage? Thanks.

Response: John Connolly

From: Yine Sun (ASD)

▪ What is the criterion/policy for an individual to be qualified to work 100% remotely? Is there a clear-cut policy or is it between the supervisor and the employee?

Response: Tanya Griffin

Q&A

From Uta Ruett (XSD)

- Families with young children (<~12 years old) are heavily affected by the pandemic. The level of work at the APS has increased during the pandemic and at the same time daycare for children including schools is far less available and often unreliable (quarantine requirements). The stress level for parents is very high. Do you have ideas how we can support parents better? I would like to point out that usually women are even more affected and the risk to lose talents is high.

Response: Tanya Griffin

Q&A

From: Greg Wiemerslage (AES)

▪ I suppose it is too late to budget any money for this, but I was wondering if the APS-U might be able to produce a video similar to these produced by LCLS and LCLS-II for a review. I just recently shared these links with some new techs to help them better understand something similar to what we are trying to do here. Of course, then I need to explain the differences, but I think a video like this is a great way to explain to others what we do and why we do it. I hope it helps the new people share in the pride and amazement that many of us old timers usually share.

<https://www.youtube.com/watch?v=RG-PYmeq2XE>

<https://www.youtube.com/watch?v=t7jUZwhZdd0>

<https://www.youtube.com/watch?v=X7CoLCTeqpE>

Response: Jim Kerby and Elmie Peoples-Evans

Q&A

All following are from: Uta Ruett (XSD)

- I have just started the next round of discussions with my group to talk about details of the upgrade, and we will have a retreat this Friday to talk about the projects and detail how to get it done. Just starting to talk about it raised so many concerns and pointed to so many unsolved issues, which need decisions and action plans very soon, that my group really started to worry. And I consider my group as well informed and very engaged in general! Just as an example: We are worried that ANL shops don't have the capacity to make all the little changes on existing equipment, adapter plates, and issues coming up on short notice to get all projects done during the upgrade without delays. I would expect that the last 3 months of the run and the first 3-6 months in the dark period are most critical. Do we have already a plan on how to get all shop work done? But this would require that we have an overview, what work will come up...

Response: Jim Kerby and Elmie Peoples-Evans

Q&A

- Delay of the upgrade? Rumors are that the upgrade might be delayed. I personally hope that we stick to the plan for dark time in April 2023, but whatever the decision is, it should come very soon! For the staff and our planning, including our own research work, this is an exhausting limbo. We also need to plan ahead in our individual groups, and I consider it reasonable to make such a decision one year ahead. Is there a chance that you will make the decision in March at the latest?

Response: Jim Kerby and Elmie Peoples-Evans

- Thinking that the beamline staff can relax during the dark year is very naïve, in my opinion, since there is so much work ahead of us including work partially on hold. What is the plan to make sure that the work-life-balance is not a severe risk for getting employees closer to burnout or to disassociate with their work, because they feel permanently overwhelmed?

Response: Jonathan Lang

Q&A: QUESTIONS FROM THE AUDIENCE IN ZOOM Q&A



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managed by UChicago Argonne, LLC.