

PSC ALL-HANDS MEETING NOVEMBER 11, 2021

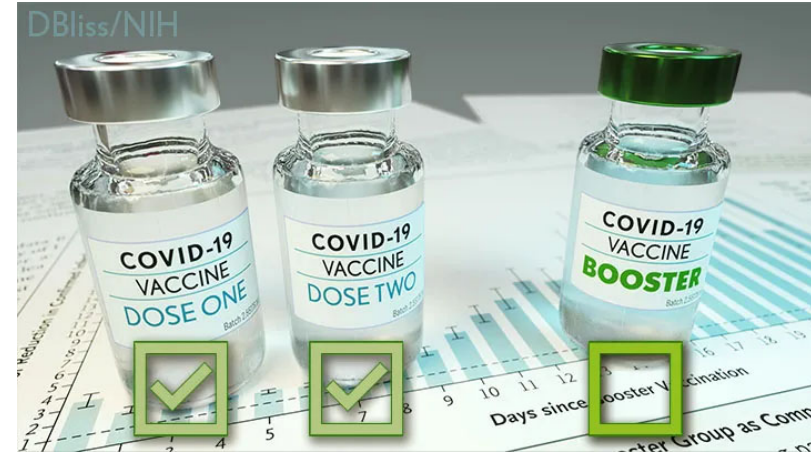


STEPHEN STREIFFER

Deputy Laboratory Director for Science & Technology
Interim Associate Laboratory Director, Photon Science

AGENDA

- **Stephen Streiffer** - APS Update
 - Pfizer antiviral pill based on STUDY at IMCA-CAT
 - Safety
 - Introducing Laurent Chapon, New ALD/Director
 - Budget
 - Diversity, Equity & Inclusion
 - User Office News
 - DOE “Triennial +1” Review of APS Ops
 - Technical Highlights
 - Personnel Updates
 - Awards and Honors
 - Technical Updates (Operations, AES, ASD, XSD)



Are you eligible for a booster shot?

- **Tanya Griffin** - Learning and Organization Development
- **Bob Hettel** - APS-U Update
- **Questions from audience / responses from APS leaders**

To keep up with the latest APS news & research: www.aps.anl.gov

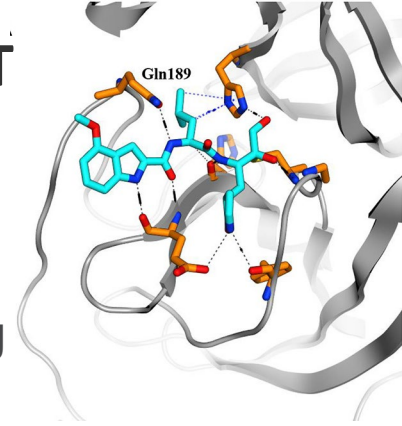
PFIZER ANTIVIRAL PILL BASED ON STUDY AT IMCA-CAT

The New York Times

“Pfizer announced that its pill to treat Covid-19 was found in a key clinical trial to be highly effective at preventing severe illness among at-risk people who received the drug soon after they exhibited symptoms.

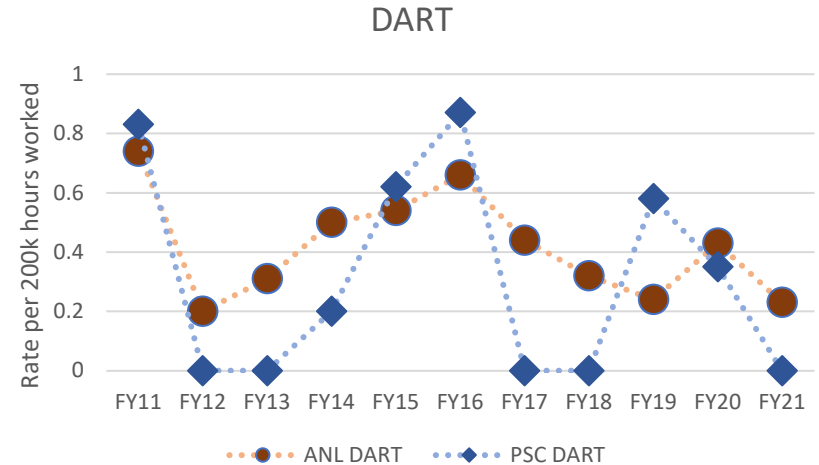
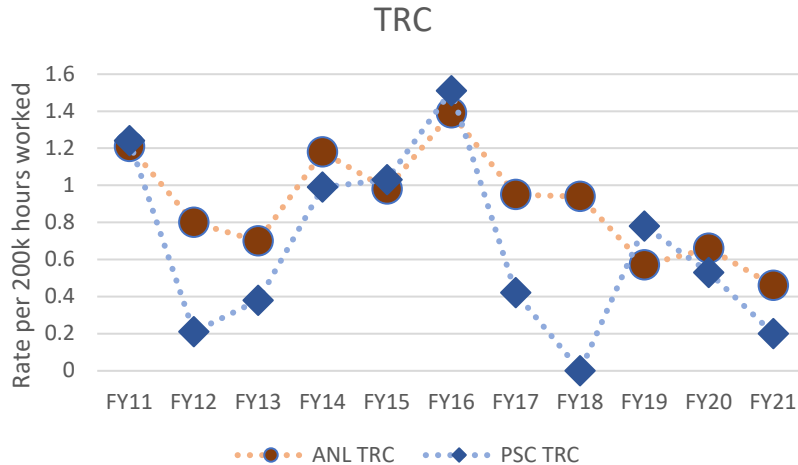
“Pfizer’s pill, which will be sold under the brand name Paxlovid, cut the risk of hospitalization or death by 89% when given within three days of the start of symptoms.”

D.R. Owen et al., “An oral SARS-CoV-2 M^{pro} inhibitor clinical candidate for the treatment of COVID-19,” *Science* 2 November 2021: **“X-ray diffraction data sets were collected at IMCA-CAT 17-ID beamline of the Advanced Photon Source (APS) at Argonne National Lab”**



PHOTON SCIENCES SAFETY PERFORMANCE

Total recordable cases; days away, restricted, or transferred



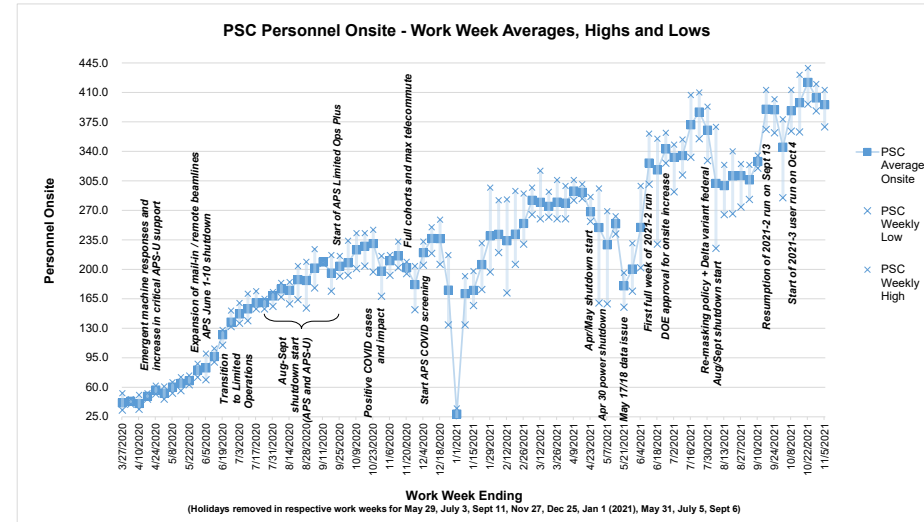
■ FY21 Incidents

- Staff: muscle pain from lifting laser tracker, 3 first aid cases
- Subcontractors: concrete exposure led to irritation, slip and fall, 1 first aid

- Two abnormal events (mis-wired white-beam shutter; burn-through of closed gate valve) during Ops commissioning at Sector 28 have led to strengthening of controls and processes for bringing up new beamlines

COVID-19 PROTOCOLS

- Nearly 400 PSC staff (about 60% of total) are working on-site with masks, onsite testing, and proximity badges for tracing
- Limited on-site users allowed after beamline staff review and approval of APS director
 - Generally capped at 2 on-site users per experiment but have made exceptions where a larger team is required and can be safely accommodated
- Argonne vaccine requirement goals accomplished
 - Approximately 5% of PSC staff received exemptions



BRINGING NEW LEADERSHIP TO THE ADVANCED PHOTON SOURCE



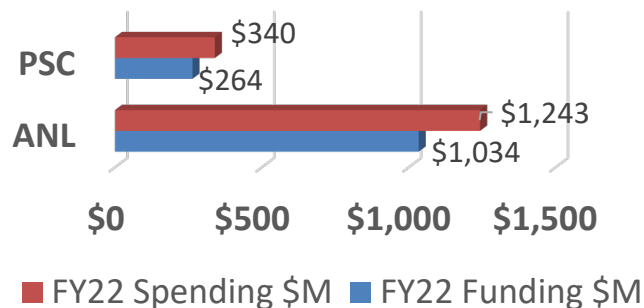
Laurent Chapon appointed Associate Laboratory Director
for Photon Sciences and APS Director

Currently Physical Sciences Director at Diamond Light Source

Anticipated start in January 2022

PSC FY22 BUDGET

Funding and Spending



APS Operating Budgets*

FY 18	\$134 M
FY 19	\$138 M
FY 20	\$140 M
FY 21	\$137 M
FY 22**	\$141 M

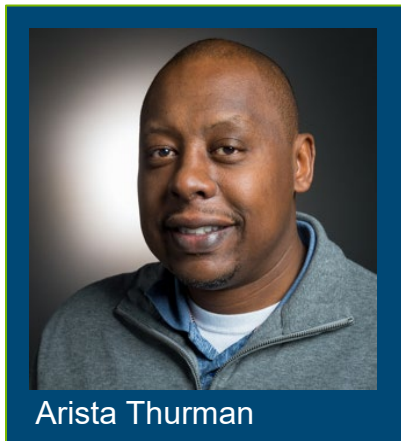
* After SBIR tax and holdbacks

** PBR is +2.9% for APS

- PSC is in good shape going into FY22
- PSC plans to spend 27% of Lab spending
- PSC has carryover funds so that is how we can spend more than we are receiving in funding
- \$150 M of spend is planned for APS Operations
- \$155 M of spend is planned for APS Upgrade
- \$35 M of spend is planned for other Department of Energy projects, Strategic Partnership Projects, and Laboratory Directed Research and Development (LDRD) projects
- PSC has approximately 670 employees including students

BECKY SIKES: NEW DEI COUNCIL CO-CHAIR

- **Becky Sikes** joins **Fanny Rodolakis** as co-chairs of the PSC Diversity, Equity & Inclusion Council
- Many thanks to **Arista Thurman** for his service as co-chair



Arista Thurman



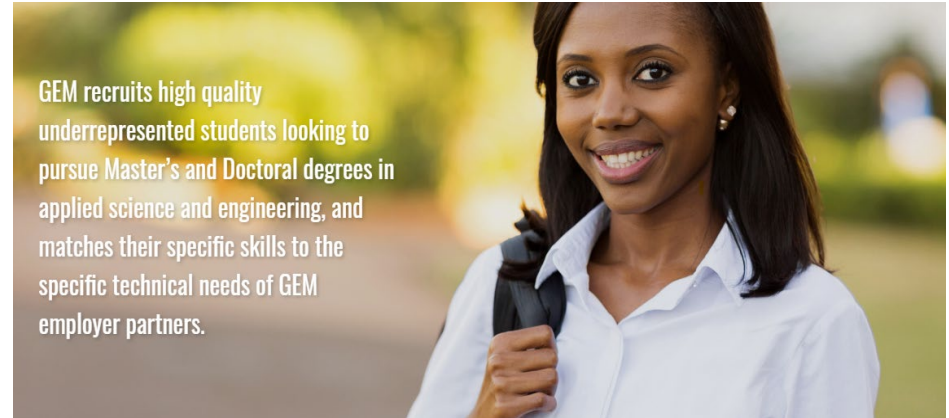
Becky Sikes



Fanny Rodolakis

DIVERSITY, EQUITY AND INCLUSION: OUTREACH & EDUCATIONAL PROGRAMS

- **The National GEM (Graduate Education for Minorities) Consortium** recruits high-quality, underrepresented students looking to pursue Master's and Doctoral degrees in applied science and engineering and matches their specific skills to the specific technical needs of GEM employer members
- Argonne National Laboratory is now an employer member
- 3 of 16 GEM fellows working at Argonne were assigned to APS in summer 2021
- GEM fellows connected with the Argonne African American ERG and the Argonne Hispanic/Latino Club



UPDATE FROM THE USER PROGRAM OFFICE

- Effective today
 - User badges are now being issued based on dates commensurate with an approved ESAF form
 - COVID-19 attestation form required or show proof of a negative COVID-19 test result that is less than 72 hours old
- Coming soon
 - New COVID-19 site access requirements for general users
 - Current site access requirements go to:
<https://www.anl.gov/site-entry-requirements>
- Implementation in 2022
 - New joint APS, NSLS-II, LCLS proposal platform
 - REAL ID requirement enforcement anticipated (did not go into effect on 10/1/2021 due to COVID-19)
- Implementation in 2023
 - Argonne Enterprise Registration System (AERS) and Site Access System

USER STATISTICS

	FY16	FY17	FY18	FY19*	FY20	FY21
Total Users	5521	5742	5704	5426	4323	3686
On-site Users	4306	4461	4423	4396	2924	780
Remote Users	1215	1281	1281	1030	1399	2906
First-time Users	1959	2121	2011	2020	1340	1772
% First-time Users	35%	37%	35%	37%	31%	48%
% Remote Users	22%	22%	22%	19%	32%	79%

- Only one user per remote access ESAF counted

2022 APS/CNM USERS MEETING

Virtual meeting

Proposed schedule:

- May 2-5 (M-Th): Workshops only
- May 9 (M): Combined plenary (morning), APS facility plenary (afternoon), and workshop/other sessions as will fit
- May 10 (Tu): CNM facility plenary (morning), poster session (afternoon), and workshop/other sessions as will fit
- May 11-12 (W-Th): Workshops and other sessions as needed

Workshop Proposals: Due November 30 at 5:00 pm

Award Nominations: Due February 28, 2022
Gopal K. Shenoy Excellence in Beamline Science
Rosalind Franklin Young Investigator Award (now an annual award)

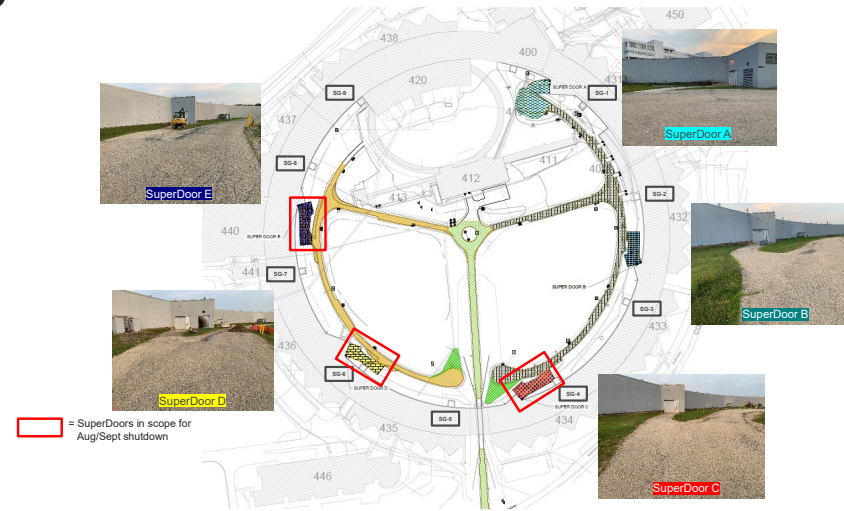
Details: <https://www.aps.anl.gov/Users-Information/User-Community/Users-Meetings>

BES “TRIENNIAL+1” REVIEW OF APS OPERATIONS, SEPTEMBER 7-10, 2021

- The review was originally scheduled for 2020, postponed due to COVID-19
- Submitted 2 volumes of written material (~1450 pp) and 14 pre-recorded talks (overview, division presentations, business ops, user program, science highlights, strategic planning and resources, ESH, DEI, COVID-19 impact, data management and computing, remote access, APS-U, and future directions)
- 15 reviewers, each submits an independent report
- Review itself consisted of virtual Q&A sessions on each talk, and virtual breakout sessions with staff, CAT representative, APSUO steering committee, and SAC
- More than 170 questions received on Sept 3rd at 2:17 pm prior to the review
- Anticipate receiving review reports and BES recommendations in the next 2-4 months
- Thanks to all who participated!

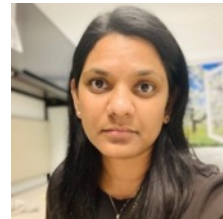
APS POWER SHUTDOWNS

- April 2021 power shutdown (linac to SR including the experiment hall) was conducted without issue, to enable repairs of ruptured fire mains in the APS infield
 - The APS had never undertaken this expanse of a power shutdown since facility went operational
- Argonne has started a roadway improvement project in the APS infield to upgrade SuperDoor basemat concrete for additional floor loading required by future APS-U hardware moves into the storage ring
- Argonne project team alerted the APS of a discovery that demo and excavation work at SuperDoors C, D & E during the August 2021 shutdown would require de-energization of portions of buried 13.2 kV power lines
- Power shutdowns were again carried out without issue or incident, in series on Aug 5-7 (SR sectors 13-24, beamline sectors 12-23) and Aug 10-12 (SR sectors 25-36 and beamline sectors 24-35)
- Future power shutdowns for SuperDoors A and B concrete excavation will be required in April 2022 to complete upgrade scope

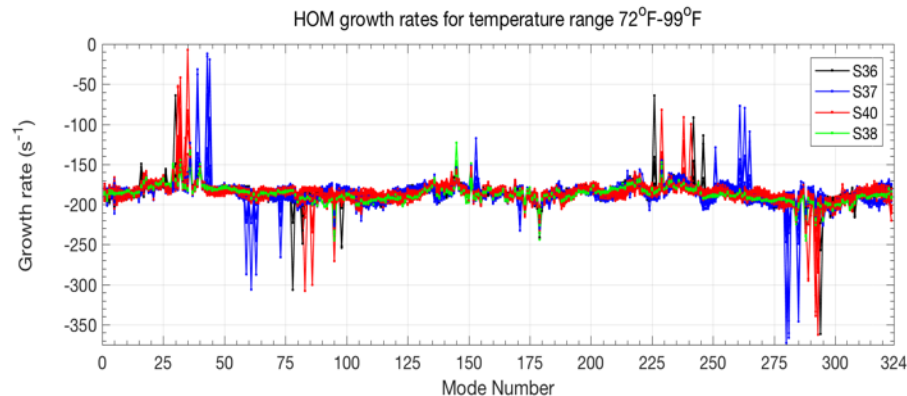


MAPPING THE RF CAVITY MODES FOR STABLE APS-U OPERATION

A new technique has been developed that allows complete characterization of cavity higher-order modes; critical for APS-U



- The existing APS rf system is being kept for APS-U (minus 4 cavities)
- The current rf cavities have mostly undamped higher order modes (HOMs) that will cause instabilities for APS-U if not tuned correctly
- We have used the new APS-U longitudinal feedback system as a diagnostic tool to map all the cavity HOMs for proper tuning for APS-U; led by Sirisha Kallakuri



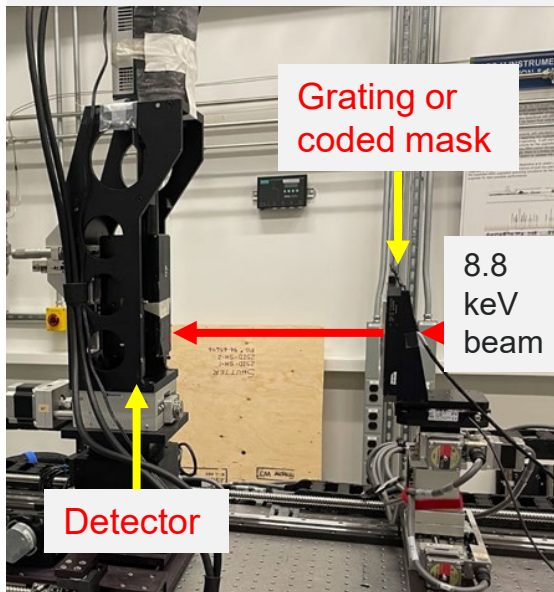
The measured growth/damping rate of each mode for 324 bunches

Each mode is individually excited and its response measured, allowing HOM identification

This will allow optimal tuning of HOMs for operation and ensure multi-bunch stability

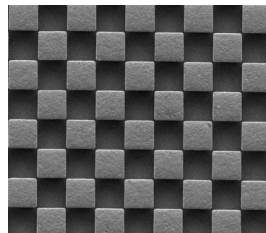
28-ID-B (IDEA) BEAMLINE OPTIMIZATION FOR OPTICS CHARACTERIZATION AND BEAMLINE DIAGNOSTIC

Beamline setup for coherence and wavefront measurements

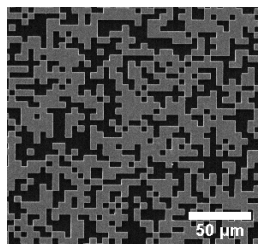


Portable grating interferometer

L. Assoufid, et al., Rev. Sci. Instrum. **87**, 052004 (2016).

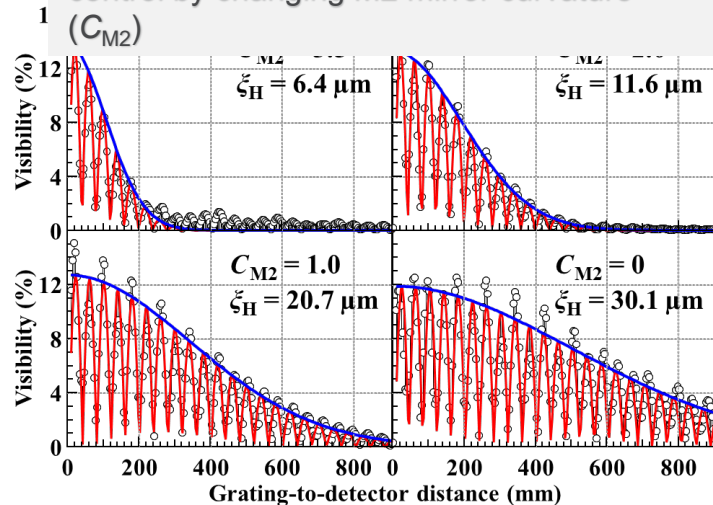


Checkerboard grating for coherence measurement [S. Marathe, et al., Opt. Express **22**, 14041 (2014).]

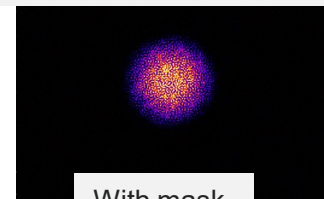


Coded mask for optics characterization and wavefront measurement [Z. Qiao, et al., Appl. Phys. Lett. **119**, 011105 (2021).]

Beamline horizontal coherence length (ξ_H) control by changing M2 mirror curvature (C_{M2})



Coded-mask-based wavefront sensor calibration with pinhole diffraction (Airy disc)



PERSONNEL



Shelley Kelly

- **Shelly Kelly** has been named group leader of the XSD Spectroscopy Group following the retirement of **Steve Heald**



Steve Heald

AES DIVISION DIRECTOR SEARCH UPDATE: ON TRACK

Feb 2021: Announcement of AES division director role opening for competitive search

Mar 9, 2021: Invitations sent to PSC Search Committee members and chair

Mar 26, 2021: AES division director posting goes live

Apr 2, 2021: Kickoff of PSC Search Committee for AES Division Director

Apr-Aug 2021: Applicant intake, down-selected to 15 qualified candidates from industry, other national laboratories, and internal to Argonne, for search committee consideration; diverse slate of 5 candidates selected by the committee and completed panel interviews

Aug 10, 2021: PSC Search Committee final report issued to current AES division director

Sept 21, 2021: Final candidates selected for second-round interviews with AES division director, AES deputy division director, panel of AES group leaders and staff, panel of ASD, XSD, APS-U and Argonne service directorate senior management

Oct 26, 2021: Completion of all second-round interviews and interviewer feedback sessions with AES division director

Next Steps: Finalist nominated by Nov 12 to Streiffer and Chapon for review

Please continue to respect candidate requests for strict confidentiality within/beyond Argonne

Any questions? Please reach out to John Connolly, Mike Sullivan, Jim Kerby, or any search committee member

AWARDS AND HONORS

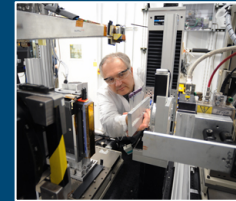
- **Si Chen** (XSD Microscopy Group) is 1 of 6 Argonne researchers to receive an FY 2021 DOE Early Career Research Program award
- **Laura Greene**, NHMFL Chief Scientist and member of the APS Scientific Advisory Committee, was named to the President's Council of Advisors on Science and Technology
- **Jan Ilavsky** (XSD Chemical & Materials Science Group) was named a Fellow of the American Crystallographic Association
- **Randy Winans** (XSD Chemical & Materials Science Group) was named the winner of the American Chemical Society R. A. Glenn Award
- **Jiyong Zhao** (XSD Inelastic X-ray & Nuclear Resonant Scattering Group) received the 2021 "Gopal K. Shenoy Award for Excellence in Beamline Science at the Advanced Photon Source" from the APSUO



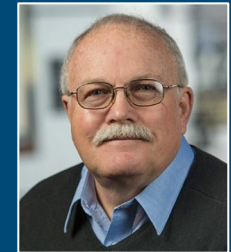
Si Chen



Laura Greene



Jan Ilavsky



Randy Winans



Jiyong Zhao

AWARDS AND HONORS

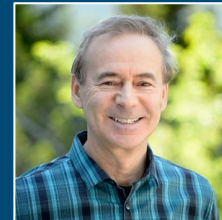
- **Glenn Decker** has been presented with an Outstanding Safety Leadership Award by the UChicago Argonne, LLC Board of Governors
- **Arista Thurman** has been presented with an Excellence in Diversity and Inclusion Award by the UChicago Argonne, LLC Board of Governors
- **Alexander (Sasha) Zholents** has been presented with the Argonne National Laboratory Distinguished Performance Award by the UChicago Argonne, LLC Board of Governors



Glenn Decker



Arista Thurman



Sasha Zholents

IMPACT ARGONNE AWARD RECIPIENTS

Program Development

- Dave Wallis, David Leibfritz, Troy Lutes, Zachary Basile, Mark Engbretson
- Arun Bommannavar

Innovation

- Donald Walko, Sunil Bean, Raymond Ziegler, Don Jensen Jr., Haidan Wen, Mike Fisher, Dohn Arms
- Ralph Bechtold, Nick Bechtold, Aric Donnelly, Michael Johnson, Robert Furst, Gentillo Curescu, Tyler Malas, Charles Doose, Scott Izzo, Spiro Skiadopoulos, Roberto Lopez, William Jansma, Animesh Jain, Jamal Pegues, Evan Carter
- Kevin Knoerzer, George Gonzalez, Tim Clute, Frank Westferro, Patrick Farquhar, Juan Anda, Richard Voogd, William Jansma, Ken Kishbaugh, Mark Erdmann, Nemanja Arsic, Yidan (Julie) Wu, Grace Avellar, Joe Aguilar, Alex Orestis

Significant Cost Reduction

- Sungsik Lee

IMPACT ARGONNE AWARD RECIPIENTS

Extraordinary Effort

- **Anita Garcia**
- **Fang (Jennifer) Zhang**
- **Mike McDowell**
- **John Quintana, Jesse Smith, Maddury Somayazulu, Nenad Velisavljevic**
- **Susan White De Pace, Connie Vanni**
- **Ibrahim Kesgin**
- **Elizabeth Schmidt, Kimberly Toerpe**
- **Max Wayman, Jun Qian, Curt Preissner, Steven Kearney**
- **Jeremy Carvelli**
- **Jun-Sang Park, Peter Kenesei, Andrew Chuang, Ali Mashayekhi**
- **Wendy VanWingeren, Elizabeth Schmidt**
- **Charles Doose, Gentillo Curescu, Tyler Malas, Spiro Skiadoupoulos, Roberto Lopez**
- **Joseph Xu, Isaac Vasserman, John TerHAAR, Yinghu Piao, Maofei Qian, Jie Liu, Sasha Zholents, Luis Diaz, Martin Smith, Joseph Gagliano, Eric McCarthy, Semyon Sorsher, Emil Trakhtenberg, Laura Boon**

25+ YEARS SERVICE AWARDS

30 years

Jeffrey Toeller
Michael Bosek
Michael Douell

25 years

Jeffrey Dooling
Dmitriy Ronzhin
William Yoder
Zhonghou Cai
Nicholas Sereno
Thomas Gog



LEARNING AND ORGANIZATIONAL DEVELOPMENT: TANYA GRIFFIN



THE LEARNING & ORGANIZATION DEVELOPMENT PAGE ON MYARGONNE

LEARNING & ORGANIZATION DEVELOPMENT

Resources available through MyArgonne

<https://my.anl.gov/ali/learning-and-organizational-development>

The screenshot displays the MyArgonne website interface. At the top, the 'MYARGONNE' logo is on the left, and navigation links for 'DOCUMENT CENTER', 'APPLICATIONS', 'SERVICES', 'ORGANIZATIONS', and 'FUNDING OPPORTUNITIES' are on the right. Below the navigation bar is a 'MY APPS' section with various icons and an 'Expand' button. The main content area is titled 'LEARNING OPPORTUNITIES' and lists several resources:

- Professional Development Course Catalog**: The Leadership Institute, in partnership with other organizations across Argonne, offers and supports regular professional development workshops focused on a variety of topics.
- LinkedIn Learning**: LinkedIn Learning is an online educational platform that helps employees discover and develop leadership, technology-related, and creative skills through expert-led course videos.
- Quarterly Forums Series**: The Quarterly Forums Series is a program of learning and collaboration opportunities facilitated in partnership with Argonne leaders on an annual theme selected by Laboratory leadership.
- Learning and Organizational Development Content Library**: Learning resources, including learning roadmaps, job aids, and more can be accessed here.
- Mentoring at Argonne**: Mentoring at Argonne is a focal point for employees to connect with mentors or mentees through the Argonne Mentoring Program, access resources to build meaningful mentoring partnerships, and explore diverse opportunities for mentorship.

On the right side of the page, there is a 'RELATED PAGES' section with links to:

- Learning Advisory Council
- Diversity, Equity, and Inclusion Office
- STEM Educational Volunteering
- Argonne Research Library
- FMPS Learning Library

A small image of a person's hands holding a pen over a laptop is visible at the bottom right of the content area.

WHAT YOU'LL FIND

Professional Development Course Catalog

- List of courses offered through ALI, Ombuds, Workforce Planning and Control, and other functions
- Focused on professional development topics
- Highlights primary audience for each course

MYARGONNE DOCUMENT CENTER APPLICATIONS SERVICES ORGANIZATIONS FUNDING OPPORTUNITIES

MY APPS Expand

Professional Development Course Catalog

The Leadership Institute, in partnership with other organizations across Argonne, offers and supports regular professional development workshops focused on a variety of topics

The Leadership Institute, in partnership with other organizations across Argonne, offers and supports regular professional development workshops focused on a variety of topics, including leadership, communication skills, change management, DEI, and more. Log in to the [Training Management System \(TMS\)](#) to view course descriptions and availability and to register for the following courses.

Course ID	Course Title	Primary Audience
ALI201	Listening in a Hectic World	All Employees
ALI202	Clarifying Performance Expectations	Supervisors
ALI203	Giving Needs-Based Feedback	Supervisors
ALI205	First Line Essentials	New Supervisors

LEARNING AND ORGANIZATIONAL DEVELOPMENT MANAGER
Jeremy Boldt
 +1-630-252-6738 | jboldt@anl.gov

EMPLOYEE DEVELOPMENT LEAD

RELATED ORGANIZATIONS
[Argonne Leadership Institute](#)
[Learning and Organizational Development](#)

WHAT YOU'LL FIND

LinkedIn Learning

- Information on the resources available through LinkedIn Learning to all Argonne employees
- Activation link to start using your free LinkedIn Learning account

The screenshot shows the MYARGONNE portal with a navigation bar containing 'DOCUMENT CENTER', 'APPLICATIONS', 'SERVICES', 'ORGANIZATIONS', and 'FUNDING OPPORTUNITIES'. Below the navigation bar is a 'MY APPS' section with various application icons. The main content area features the LinkedIn Learning logo and the text 'ARGONNE LEADERSHIP INSTITUTE LinkedIn Learning'. A 'Launch LinkedIn Learning' link is visible. Below this, a paragraph describes LinkedIn Learning as an online educational platform. To the right, a sidebar lists 'LEARNING AND ORGANIZATIONAL DEVELOPMENT MANAGER' with contact information for Jeremy Boldt, and 'EMPLOYEE DEVELOPMENT LEAD'. A 'RELATED ORGANIZATIONS' section lists 'Argonne Leadership Institute' and 'Learning and Organizational Development'. At the bottom, a note states: 'You can access your new Argonne LinkedIn Learning account to get started. It will only take'.

WHAT YOU'LL FIND

Quarterly Forums Series

- Information on the purpose and structure of the Quarterly Forums sessions for supervisors and employees
- List of upcoming sessions as dates and times are confirmed

The screenshot shows the MYARGONNE website interface. At the top, there is a navigation bar with links for DOCUMENT CENTER, APPLICATIONS, SERVICES, ORGANIZATIONS, and FUNDING OPPORTUNITIES. Below this is a 'MY APPS' section with various icons. The main content area is titled 'Quarterly Forums Series' and contains a description of the program. To the right, there is a sidebar with contact information for Jeremy Boldt, an employee development lead, and related organizations like Argonne Leadership Institute and Learning and Organizational Development. At the bottom of the main content, there is a table with columns for Program, Audience, and Upcoming Sessions.

MYARGONNE DOCUMENT CENTER APPLICATIONS SERVICES ORGANIZATIONS FUNDING OPPORTUNITIES

MY APPS [Expand](#)

Quarterly Forums Series

The Quarterly Forums Series is a program of learning and collaboration opportunities facilitated in partnership with Argonne leaders on an annual theme selected by Laboratory leadership.

The Leadership Institute offers the Quarterly Forums Series, a program of learning and collaboration opportunities facilitated in partnership with Argonne leaders on an annual theme selected by Laboratory leadership. In addition to the Quarterly Leadership Forum, focused on Argonne's Extended Leadership Team, supervisors and employees can register for the following sessions in the [Training Management System \(TMS\)](#) when scheduled:

Program	Audience	Upcoming Sessions
Quarterly Supervisor	Managers and people leaders outside of the	TBD

LEARNING AND ORGANIZATIONAL DEVELOPMENT MANAGER
Jeremy Boldt
+1-630-252-6738 | jboldt@anl.gov

EMPLOYEE DEVELOPMENT LEAD

RELATED ORGANIZATIONS
[Argonne Leadership Institute](#)
[Learning and Organizational Development](#)

QUARTERLY FORUMS

The Leadership Institute offers Quarterly Forums for both managers and employees.

WHAT YOU'LL FIND

Learning & Organization Development Content Library

Box folder access containing helpful materials and documents on:

- Mentoring
- LinkedIn Learning
- Learning roadmaps
- Job aids
- Informational flyers

The screenshot shows the MYARGONNE web interface. At the top, there are navigation links for DOCUMENT CENTER, APPLICATIONS, SERVICES, ORGANIZATIONS, and FUNDING OPPORTUNITIES. Below this is a row of icons for various applications like Box, OneDrive, and LinkedIn. The main content area is titled "Content Library" and includes a paragraph explaining the library's purpose. Below the text is a table listing folders in the "HRS-ALI Learning and Organizational Development Web-Accessible Content" library.

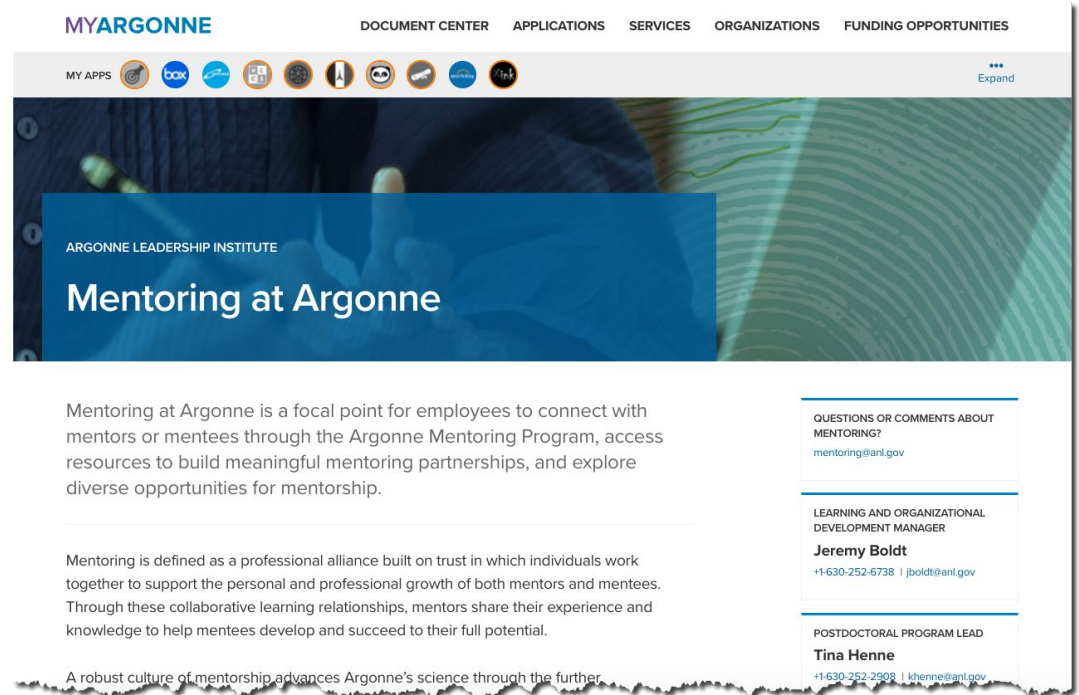
Name	Updated
Mentoring Resources	Aug 4, 2021 by Waterman, Betty
LinkedIn Learning Resources	Jun 2, 2021 by Boldt, Jeremy A
Learning Roadmaps	Aug 6, 2021 by Boldt, Jeremy A
Job Aids	Jun 7, 2021 by Boldt, Jeremy A
Informational Flyers	Jul 8, 2021 by Boldt, Jeremy A

WHAT YOU'LL FIND

Mentoring at Argonne

Information and resources regarding mentoring relationships at ANL, including:

- News and events
- Recommended readings and learning resources
- Mentoring opportunities at Argonne



The screenshot shows the MYARGONNE website interface. At the top, there is a navigation bar with links for DOCUMENT CENTER, APPLICATIONS, SERVICES, ORGANIZATIONS, and FUNDING OPPORTUNITIES. Below this is a row of icons for various applications like Box, OneDrive, and others. The main content area features a blue header with the text 'ARGONNE LEADERSHIP INSTITUTE' and 'Mentoring at Argonne'. Below the header, there is a paragraph of text: 'Mentoring at Argonne is a focal point for employees to connect with mentors or mentees through the Argonne Mentoring Program, access resources to build meaningful mentoring partnerships, and explore diverse opportunities for mentorship.' This is followed by a definition of mentoring: 'Mentoring is defined as a professional alliance built on trust in which individuals work together to support the personal and professional growth of both mentors and mentees. Through these collaborative learning relationships, mentors share their experience and knowledge to help mentees develop and succeed to their full potential.' At the bottom of the page, there is a quote: 'A robust culture of mentorship advances Argonne's science through the further.' On the right side of the page, there are three contact boxes. The first box is for 'QUESTIONS OR COMMENTS ABOUT MENTORING?' with the email 'mentoring@anl.gov'. The second box is for 'LEARNING AND ORGANIZATIONAL DEVELOPMENT MANAGER' with the name 'Jeremy Boldt', phone '+1-630-252-6738', and email 'jboldt@anl.gov'. The third box is for 'POSTDOCTORAL PROGRAM LEAD' with the name 'Tina Henne', phone '+1-630-252-2908', and email 'khenne@anl.gov'.

WHAT YOU'LL FIND

Policies, procedures, and related pages

- Links to helpful pages such as the DEI Office, the Argonne Research Library, and STEM Volunteering
- Links to relevant procedures, including:
 - PROC-16 (Mandatory Training)
 - PROC-151 (Educational Assistance)

The screenshot displays the MYARGONNE website interface. At the top, there is a navigation bar with links for DOCUMENT CENTER, APPLICATIONS, SERVICES, ORGANIZATIONS, and FUNDING OPPORTUNITIES. Below this is a 'MY APPS' section with various icons. The main content area features several sections: 'Argonne, offers and supports regular professional development workshops focused on a variety of topics', 'LinkedIn Learning' (with a description of the platform), 'Quarterly Forums Series' (describing an annual theme program), 'Learning and Organizational Development Content Library' (listing learning resources), and 'Mentoring at Argonne' (describing a mentorship program). A red arrow points from the 'Mentoring at Argonne' section to a 'RELATED PAGES' sidebar on the right, which lists 'Learning Advisory Council', 'Diversity, Equity, and Inclusion Office', 'STEM Educational Volunteering', 'Argonne Research Library', and 'FMPS Learning Library'. Another red arrow points from the 'Mentoring at Argonne' section to a 'Policies and Procedures' box at the bottom, which lists 'LMS-PROC-16: Mandatory Training' and 'LMS-PROC-151: Educational Assistance'. A small image of a person working on a laptop is visible in the background of the 'Mentoring at Argonne' section.



SPEAKING UP

SPEAKING UP





UPGRADE UPDATE: BOB HETTEL

APS-U Project Status



Robert Hettel, APS Upgrade Project Director

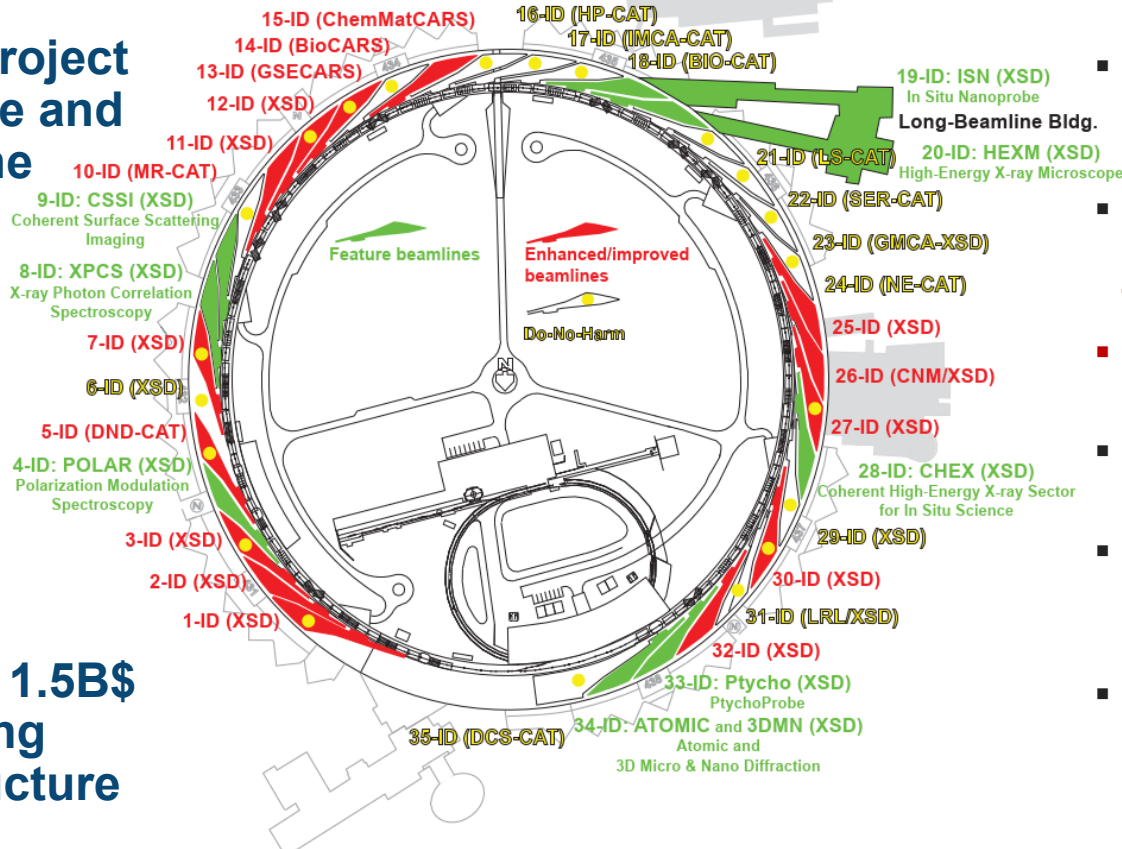
PSC All Hands Meeting

November 11, 2021

APS-U Project Scope

815M\$ project to update and renew the facility

Re-uses 1.5B\$ in existing infrastructure

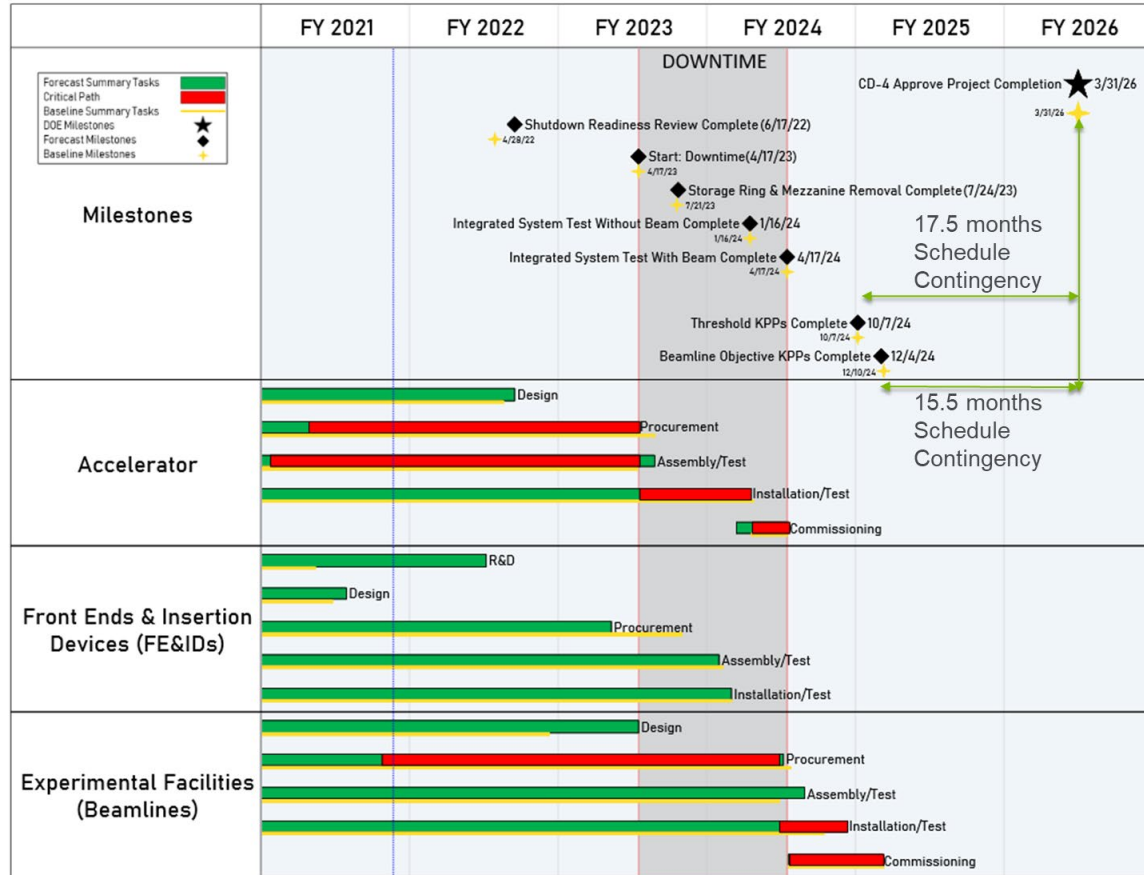


- New storage ring: **42-pm** emittance @ 6 GeV, 200 mA
- New and updated insertion devices, including superconducting undulators
- Combined result in **brightness increases of up to 500x**
- **9 new feature beamlines + Long Beamline Bldg**
- 15 enhanced and improved beamlines
- “Do no harm” beamlines;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



APS-U Project Status

- Project is 56% complete; cumulative CPI 0.99, SPI 0.97 (August EVMS).
- APS-U dark time schedule was shifted by 10 months to April 2023 in response to accumulated COVID-19-related component schedule slippages. Many APS Users are happy with this shift and BES is on board.
- 17.5 months schedule contingency; 73.4M\$ cost contingency remains (EAC). **Contingency is marginal at this point; draft scope contingency list has been created. Baseline change might be needed.**
- Supply chains ongoing and increasing in complexity based on recent information.



ES&H / QA

- ES&H and QA are integral to the design, procurement, and installation processes
 - All design reviews and procurement readiness reviews have an ES&H and QA member as part of the committee and specific charge questions are addressed
 - ESH and QA specialists are part of all major procurement bid assessment teams
- APS-U and APS Ops both utilize the same integrated set of review and safety processes
- The Component Database and integrated e-Traveler system are used to track components from receipt to final installation
- All work is planned using the Argonne AWARE system and currently includes COVID controls All work control documents have been revisited and reauthorized with COVID-19 controls in place
- Working with the lab to fill a QA lead position
- Safety performance in FY21: 2 OSHA recordable incidents (1 DART), 2 first aid cases

Operations Interface

- Full success requires the integration of both the Operations and Upgrade efforts
- Working with the divisions and the project, the PMO facilitates the development of a complete overview of needs for success
 - Prioritization of Ops projects based on need
 - Participation and assistance in planning outcomes of Gap Workshop as appropriate
 - Assisting in long-term budget process
 - Assisting PSC in maximizing use of our available resources
 - Beamline workshops, user meetings and Q&A sessions, weekly collaborative access team partner meetings; APS User Organization
- APSU Managing to existing scope – Operations Interface is important for facility success
 - Avoiding scope creep ‘towards the project’ – respecting the defined boundaries
 - Gap workshop engaged personnel from across whole of Directorate
 - DALDs, and DDs, are key in this effort of coordination of all projects in their Divisions
 - J. Kerby serving as interim head of PMO – this has improved understanding and communication with Divisions on Ops Projects

Some of the Significant Progress in FY21

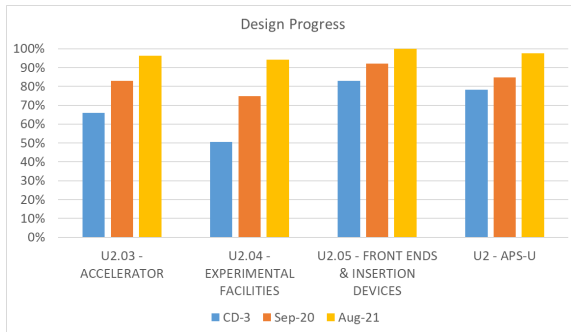
- ~98% overall design completion
- 70+ front end table assemblies completed
- SCU R&D completed; progress in cooling down first unit and preparing for measurement.
- Long lead X-ray optical components placed on order.
- LBB construction continued on schedule and within budget.



Keyhole gaskets



ID vacuum chamber test piece



Front End Tables



Cross vacuum chambers



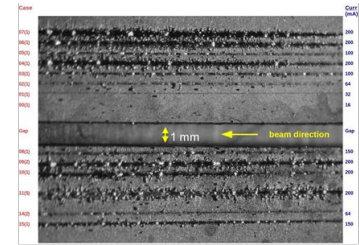
Long Beamline Building progress

SCU cryostat delivered to ANL



Some of the Significant Progress in FY21 – cont.

- 1095 or more ring magnets received and accepted; magnet plinth assembly commenced.
- Changed injection scheme from vertical with a risky DC septum magnet to horizontal with a much less risky pulsed septum magnet.
- Successfully installed extra shielding for high-charge PAR operation.
- SC bunch lengthening cavity successfully cooled down.
- Significant progress on defining the radiation safety system needed for for swap-out (top-up) injection with open beamline shutters. A review of this system is planned for early of CY22.
- Conducted a multiday **APS-U/APS Operations Gap Workshop** with integrated PSC staff involvement that identified 285 items, grouped in 19 main categories, that need resolution. The issues are being mitigated with project and operations oversight.



Whole beam dump test



First article CAEN power supplies



Superconducting bunch lengthening cavities

Recent DOE Project Status Review

- The Department of Energy conducted and Independent Project Status Review of the APS Upgrade October 26-29
- 22 reviewers, drawn from across the complex, provided feedback on the overall status of the project with regards to technical, schedule, and cost progress
- The charge included specific questions regarding progress and challenges with respect to COVID and related supply chain effects.
- Closeout attended by staff, Laboratory leadership, and program

Committee Members		APS-U Points of Contact	
Last Name	Name	Institution	Subcommittee
Ackerman	Andrew	BNL	SC6 Lead
Boyce	Richard	SLAC	SC5
Chao	Kin	DOE/OPA	Chair
Diehl	Joseph	DOE/BHSD	SC7
Fritz	David	SLAC	SC3 Lead
Galambos	John	ORNL	SC8
Hexemer	Alex	LBNL	SC3
Indelicato	Tony	DOE/PSO	SC7
Leemann	Simon	LBNL	SC1
Leftwich-Vann	Robbie	LBNL	SC8 Lead
Leitner	Daniela	LBNL	SC5 Lead
Lung	Allison	TJNAF	SC8
Netto	Andrew	LBNL	SC8
Prestemon	Soren	LBNL	SC4 Lead
Rodgers	Dave	LBNL	SC6
Safranek	James	SLAC	SC1 Lead
Sannibale	Fernando	LBNL	SC2 Lead
Sebek	Jim	SLAC	SC2
Steffey	Wayne	ORNL	SC7 Lead
Temnykh	Sasha	Cornell U	SC4
White	Karen	ORNL	SC2
Zhong	Zhong	BNL	SC3

DOE Project Status Review – Oct. 26-29, 2021

Recommendations

SC1 – Accelerator Physics

- Hold a comprehensive radiation safety review and provide complete requirements for the swap-out radiation safety system by May 2022 to ensure there is time for credited controls to be properly developed and implemented.

SC2 – Accelerator Systems

- Evaluate the impact on the general schedule of a potential further delay in the delivery of vacuum chambers/components. An obvious consequence of such an event is the possibility of jeopardizing the capability of the project to complete the assembly of the modules before the downtime. Evaluate also the effects on other areas and develop a mitigation plan that also considers the assembling of the modules to continue during the downtime. To be completed by Q3 FY22.

SC3 – Experimental Beamlines

- Complete a detailed preliminary mirror metrology schedule in the next 3 months. The schedule should be dynamically updated as fabrication/delivery information evolves.
- Develop a detailed resource loaded plan for installation of U2.04 scope in the next 6 months. This should be logically linked to enclosure completion dates, vendor deliveries, and optics RFI after metrology. Present this plan/tool at the next status review.

DOE Project Status Review – Oct. 26-29, 2021

Recommendations – cont.

SC4 – Front Ends and IDs

- None

SC5 – Accelerator Removal and Installation

- Revisit the R&I risk registry to include additional challenges for R&I by the Installation Readiness Review (Additional harvesting requests, late Integrated Testing requirements).
- Complete the remaining installation designs and firm up detail planning by the next IPR to assess possible additional cost and schedule impacts.
- Complete contractor procurement preparations as soon as possible with the goal to have the majority of the contracts in place by the next IPR. In addition to R&I this task is dependent on completion of installation drawings and subsystem technical packages.

SC6 – ESH/QA

- None

DOE Project Status Review – Oct. 26-29, 2021

Recommendations – cont.

SC7 – Cost and Schedule

- The project should continue to monitor and routinely perform risk analysis to communicate projected cost/schedule contingency shortfalls and potential impacts to the baselined TPC and CD-4 date on a monthly basis.

SC8 – Project Management

- Within 3 months, work with ANL Procurement to determine whether standard language can be included in RFPs that can be used to ascertain known COVID-related delays or shortages that could impact award or delivery.
- Within 3 months, the project and operations develop and implement the process for prioritization, assignment and closure of gaps identified in the Gap Workshop.
- Within 6 months, work with the program office and ANL leadership to analyze the optimum path for the project to increase the likelihood of completion with adequate levels of cost and schedule contingency.

Readiness for APS-U Operations

In Process:

- Definition of requirements to conduct system check-out, based on component designs, interface control documents, system integration processes, etc.
- Preparation for Accelerator Readiness Review that will probe all aspects of the readiness of systems, personnel, policies and procedures in configuration management, QA, safety, etc. Finalize SAD and ASE
- Resolution of major “gaps” in project and APS operations tasks that were identified in the April 2021 APS-U/APS Ops Gap Workshop
- Definition of Transition to Operations plans near the end of the APS-U project and post-project staffing

Summary

- APS-U project is working to the baseline – contingency is a concern
 - Total project scope, cost, and completion (CD-4) unchanged since CD-2
 - The project is 56% complete by cost, 73% by cost + obligations in August
 - Project shifting from design to full receipt and assembly
 - COVID and associated supply chain ripples having continued effects
- Operations and Upgrade working to deliver renewed facility; transition to operations and post-project staffing plans progressing
- Project has remained a priority for the Lab
- Science community engaging on development and preparedness for the new facility



QUESTIONS