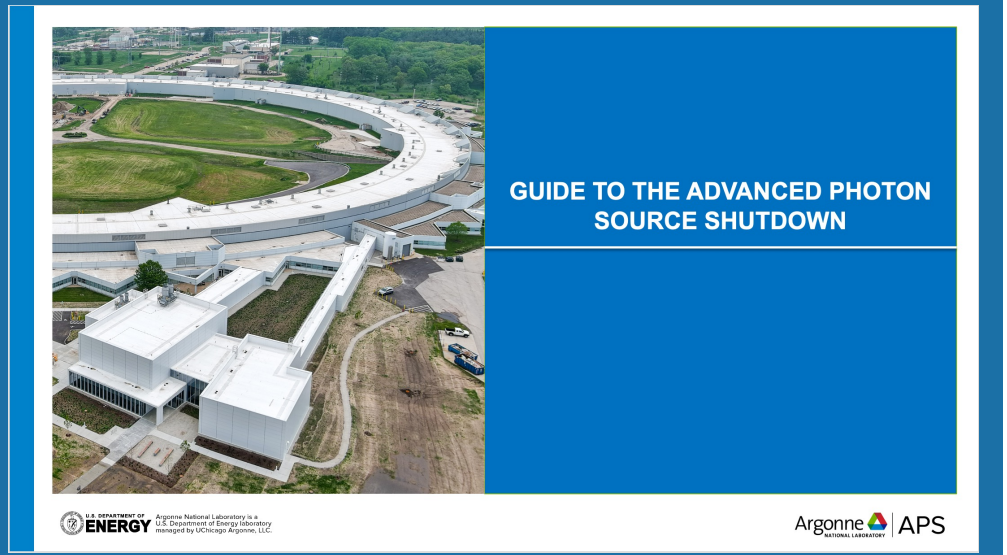
# Guide to the APS Shutdown

**Elmie Peoples-Evans**
**Manager, APS Upgrade Project**

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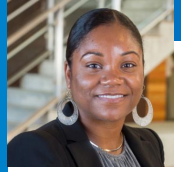

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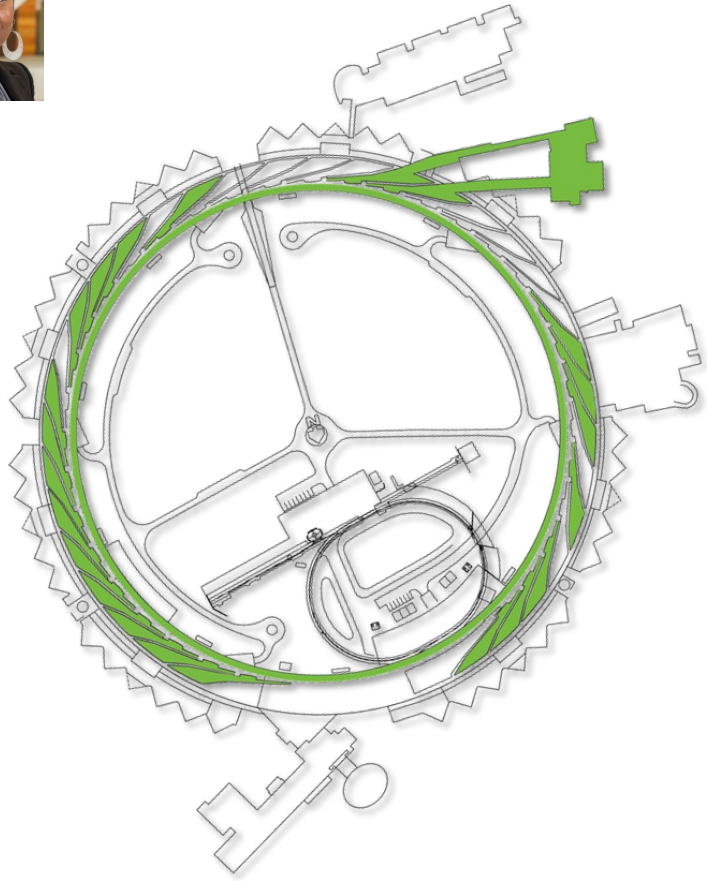


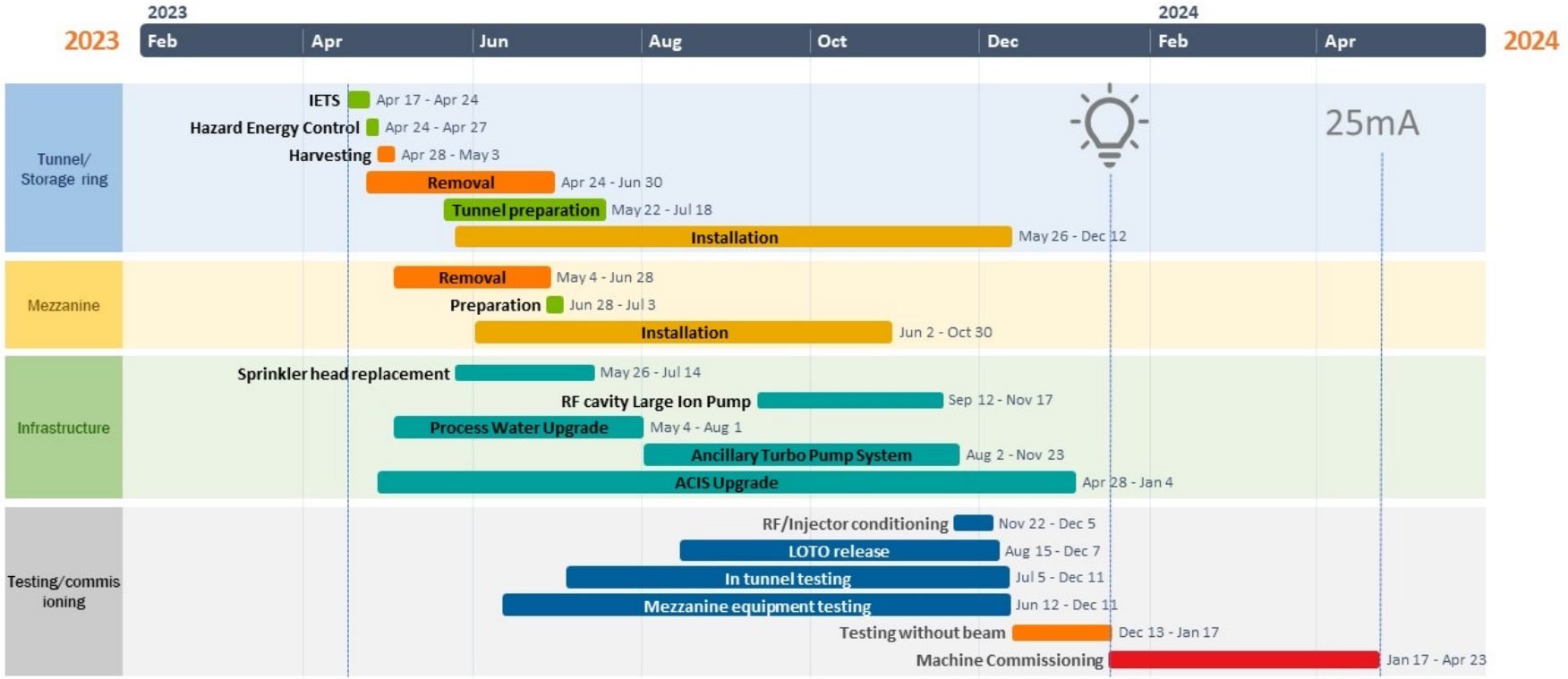
# Introduction

The Advanced Photon Source is undergoing an extensive upgrade, one that will see the electron storage ring at the heart of the facility removed and replaced, new beamlines constructed and existing beamlines updated. The APS Upgrade project requires a one-year shutdown of the facility, during which the X-ray beamline will not be in use for research experiments.

This guide is intended to give you at-a-glance information about what you need to know to continue working safely at the APS during the shutdown.

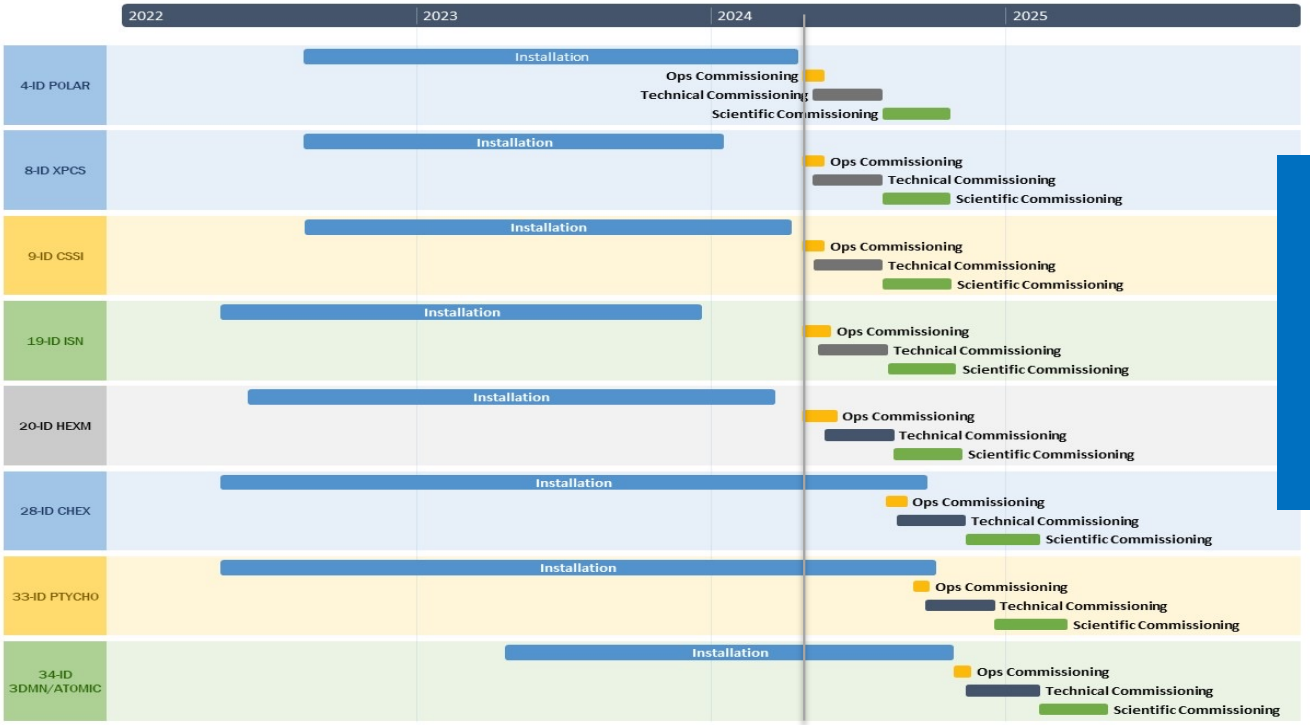
# Storage Ring Schedule

Current plan – dates are subject to change



# Feature Beamline Installation Schedule

Current plan – dates are subject to change




Shutdown ends

Full beamline installation schedule available on the APS Upgrade Sharepoint page.

Tentative beamline restart projection

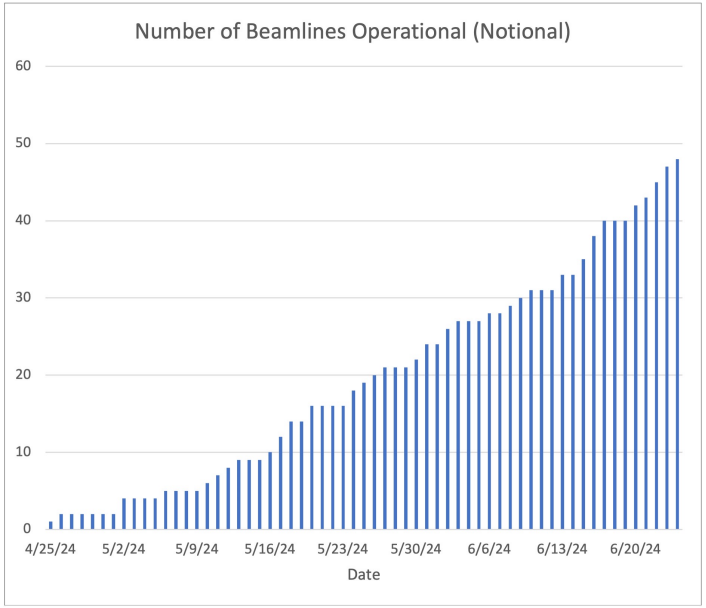



Chart begins after the end of the shutdown and denotes restarts only. Beamlines are expected to return to normal operations between 1-6 months after restarting, depending on complexity of commissioning.

# Restarting Beamlines

Every beamline at the APS needs to meet pre-beam requirements and to go through the various commissioning stages prior to resumption of normal operations. Those stages are:

- **Check-out** – Testing of equipment, systems without beam.
- **Ops commissioning** – First beam and shielding verification.
- **Technical commissioning** –Testing of the beamline with beam.
  - Technical commissioning can begin before ops commissioning is completed.
- **Scientific commissioning** and early experiments.

Tiffany Freedman


# Safety During the Shutdown

The safety of everyone working during the shutdown is our top priority.

- Our goal is the safe, effective execution of work during the shutdown. Everyone should be mindful of safety rules and proper work procedures. Assure, do not assume.
- Everyone has the authority and responsibility to stop or pause work for safety reasons.
- Restarting work once stopped will require the approval of the Deputy Associate Laboratory Director for PSC Operations (John Quintana) and the APS Upgrade Project Director (Jim Kerby).


# Construction Areas

During the shutdown, the entire storage ring, including the storage ring mezzanine, will be considered a construction area. Additional construction areas on the experiment floor will be marked with signs and construction tape.

- Do not enter these areas without prior approval and without the proper personal protective equipment.
- Construction areas will change frequently. Please be aware of your surroundings and read the information provided on where work is happening.

# Personal Protective Equipment

Everyone in construction areas must wear and use proper PPE for every job performed.

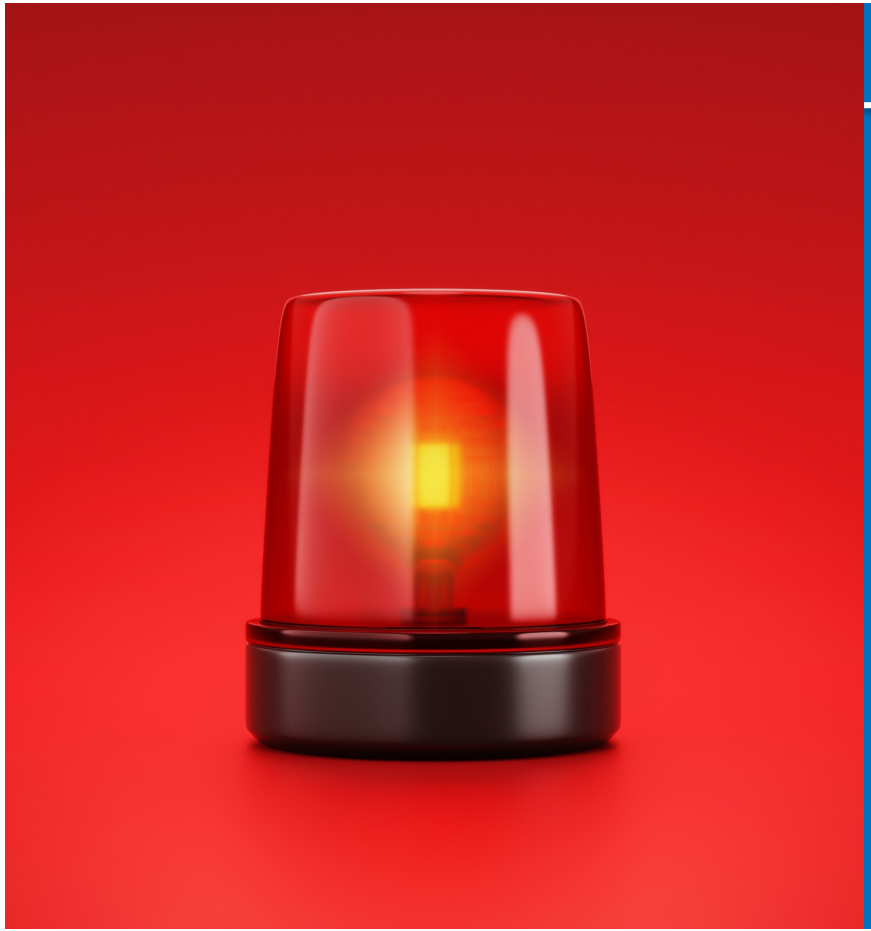
- PPE must be properly fitted and readily available for Argonne personnel, contractors and subcontractors.
- The minimal requirement for access to construction areas includes:
  - Long pants.
  - Quarter-length sleeves.
  - Safety glasses.
  - Hard hats.
  - Over-the-ankle safety boots.

Paul Rossi

# Access to the APS

During the year-long shutdown, access to the APS experiment floor and LOMs will be limited.

- Key cards will be required to access the APS experiment floor and LOMs at all times, not just on weekends and evenings.
- Some scientific experiments not requiring X-rays will continue. All users must have an approved Experiment Safety Approval Form (ESAF) to access the APS.
- PSC management will make decisions regarding access for those not working at the APS during the shutdown.



# Emergency Contact Numbers

Call immediately to report emergencies or hazardous situations at the APS.

- Report emergencies using an Argonne phone: Call 9-1-1.
- Report emergencies using your mobile phone: Call 630-252-1911, or use the Argonne app to call 911.
- Report emergencies using Microsoft Teams: Call 9-1-1.
- In the event of a weather emergency, the APS storage ring has been designated a shelter area.

# Emergency Response

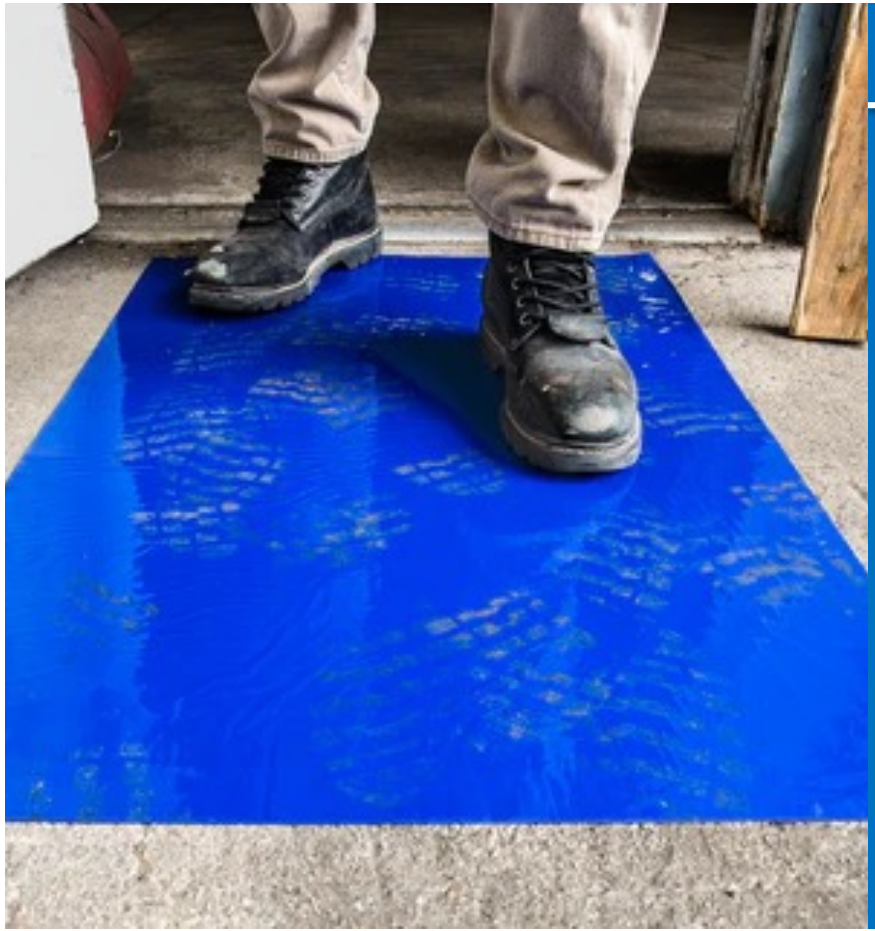
A First Aid Kit and Automatic External Defibrillator (AED) will be available at each of the Super Doors, in case of emergency during storage ring work.

- Argonne Fire Department will be available to respond to all emergencies.
- When reporting your location make it clear that you are in the Storage Ring Tunnel and what Sector you are in.
- Argonne Health and Employee Wellness (HEW) personnel will be available remotely to evaluate follow-up and return-to-work status for extended shifts.


# Radiation Safety System (RSS)

The APS uses a configuration control process to ensure that installed devices and systems critical to radiation safety are consistent with the approved designs.

- Items under the RSS program are marked with signs throughout the accelerator and beamline areas.
- Do not perform work on or move these items unless specifically authorized. Moving or removing an RSS component that is part of an accelerator system or beamline requires a configuration control work permit. Relocating a component before installation or after removal is not RSS work and does not need a permit.



# Lead Safety

Construction activities may create lead work areas. These are marked with signs. Avoid entering these areas if possible.

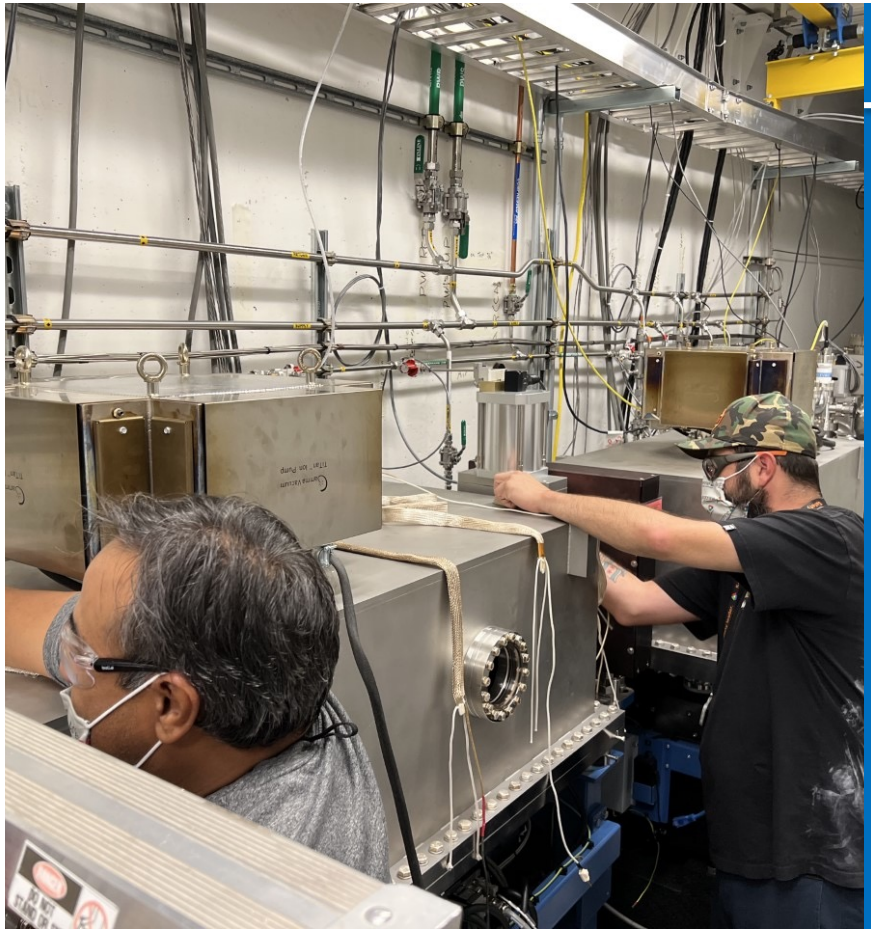
- No eating or drinking in these areas. Wash face and hands when you leave the area.
- Use sticky mats when entering and exiting.
- Wear disposable gloves when contacting affected surfaces.
- Additional protective clothing may be required. Ensure there is an appropriate waste container to place protective clothing when exiting:
  - Disposable lab coat for arm/torso contact.
  - Full-body coverall if kneeling or crawling.

John Quintana

# Work Control Documents

Work performed within PSC during the shutdown will require an appropriate Argonne Work Control Document, which ensures proper hazard and controls identification for the work.

- This is the first step in the process to approve work activity.
- Contacts for Work Control Document questions: Laura Boon (lboon@anl.gov, 630-252-3083) and Amanda Youker (youker@anl.gov, 630-252-8316).



# Work Requests

Installation of the feature beamlines and upgrades to existing beamlines will require coordination across all areas. For all work not involving APS-U scope, as well as access and tour requests, use the Work Request System. For APS-U scope, use the APS-U Plan of the Week page.

- All beamline work that involves moving large equipment out of the sector, or involves the use of APS services, requires a work request. These requests will be considered on a case-by-case basis by PSC management.
- Access the Work Request System here: https://beam.aps.anl.gov/pls/apsweb/wam0002.wrq_system.
- Floor coordinators can help with work requests.


# Plan of the Week

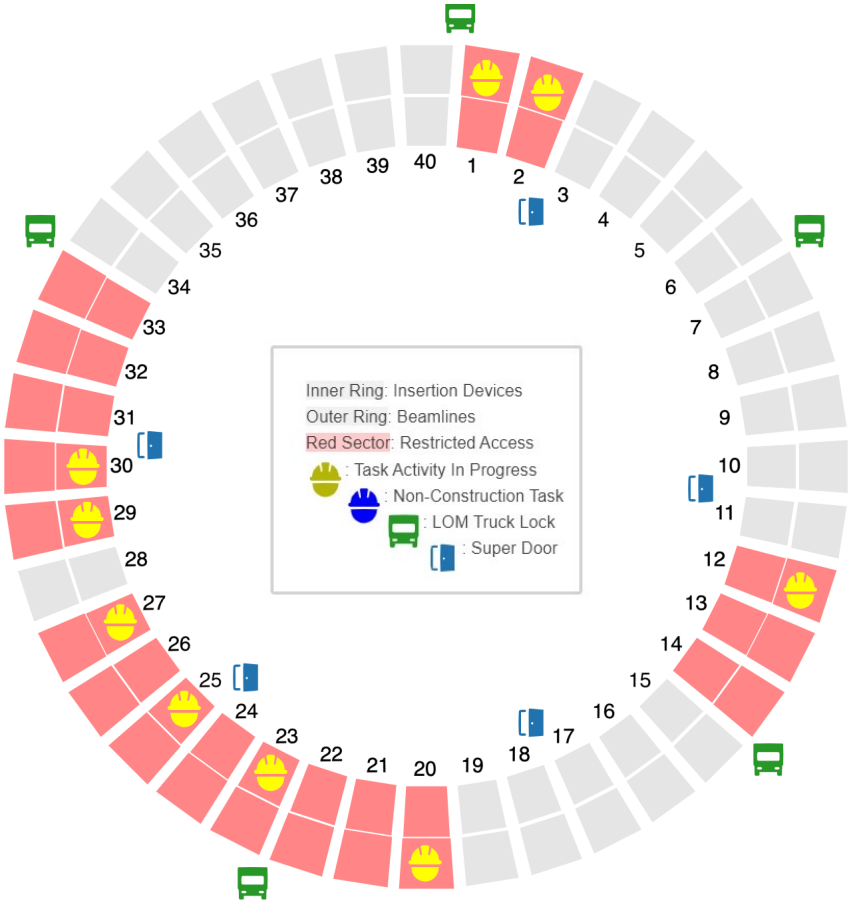
Work during the shutdown will be coordinated through a Plan of the Week (POW) process. Each week, work requests received through the Work Request System will be combined with the APS Upgrade project schedule to create a comprehensive look at activity across seven days. This is final authorization to move forward with work activity.

- A summary of the POW will be emailed to all of PSC and CATs every Friday, covering the upcoming week. A graphic illustrating access limitations will be projected on the monitors around the APS experiment floor.
- The POW committee is chaired by Project Director Jim Kerby and Deputy Associate Laboratory Director for Operations John Quintana.
- Plan of the Week questions can be directed to pow@anl.gov.


# Communications Channels

We are committed to providing the most current information to all in a consistent manner. To get that information, various communications channels will be in place throughout the shutdown.

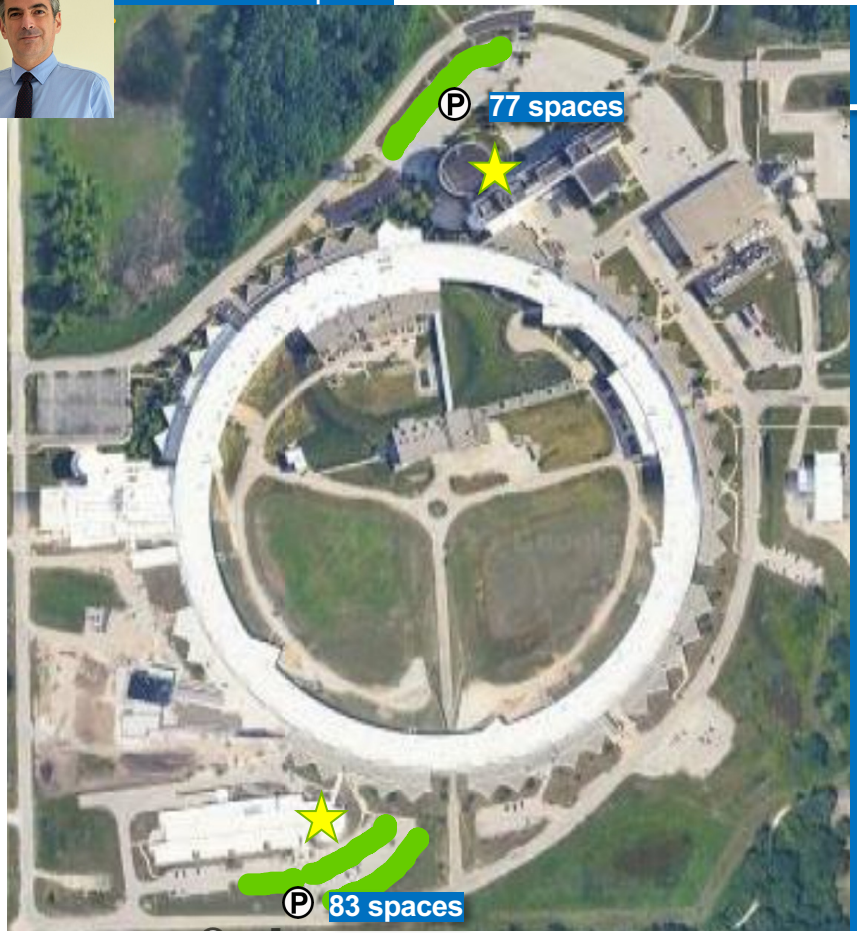
- All PSC employees and CAT staff will have access to a Sharepoint site with up-to-date work activity information for any given day.
- A summary of the work for the week ahead will be emailed on Fridays to all PSC employees and CAT staff.
- A graphic illustrating access limitations will be projected on the monitors around the APS experiment floor.
- A bi-weekly Shutdown Operations Directorate meeting will include PSC and CAT leaders.
- A bi-weekly meeting will be organized for CAT leaders.




# Communications Channels (cont'd)

- Monthly PSC All-Hands Q&A meetings will focus on APS Upgrade work.
- The monthly Upgrade Update e-newsletter for PSC, CAT staff, APS users and Lab community will continue.
- You can follow the project through stories, photos and videos on aps.anl.gov/APS-Upgrade.
- Questions? Submit them to apsinfo@anl.gov.

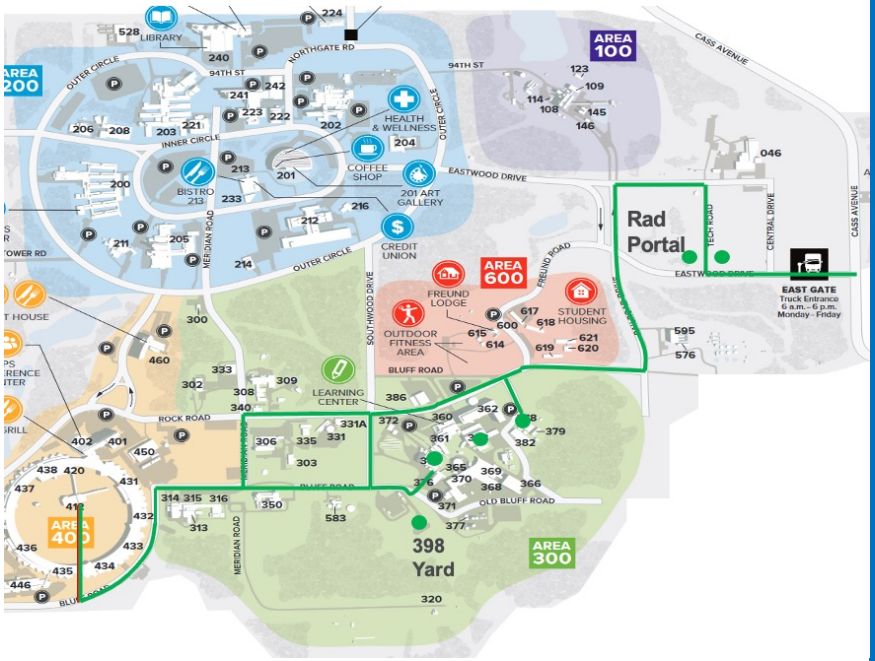
Laurent Chapon




# Areas for Subcontractors

The APS-U Project team will use subcontractors to remove the existing storage ring and install the upgraded ring.

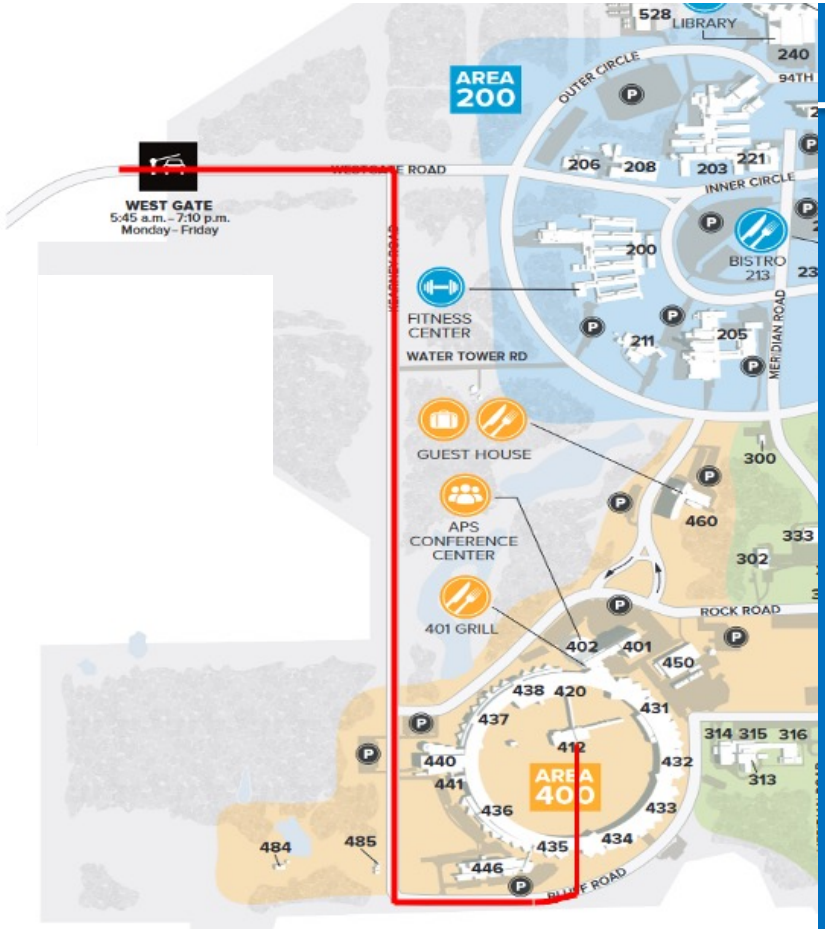
- Space for subcontractors has been reserved in the Bldg. 446 Conference Room for portions of the day, and Bldg. 401 A1100 Conference Room for the entire day.
- These reservations extend through December 2023.
- Parking spaces have also been designated for subcontractor use in the Bldg. 401 and Bldg. 446 parking lots. The green highlighted areas in the image indicate those designated subcontractor parking areas.




# Traffic During Ring Removal

From May to July 2023, trucks will be moving heavy components of the original APS storage ring out of the lab via the East Gate. The route is marked on this map.

- Be aware of increased traffic during this period. Contractors will arrive on site starting April 24, with full contractor presence in place by May 8.
- Be patient if following a vehicle travelling at slower speed.
- Use alternative routes, if possible.
- Traffic control will be enhanced during this period.
- Only authorized vehicles should be in the APS infield.




# Traffic During Ring Installation

From June to December 2023, trucks will be carrying modules from the offsite facility (Bldg. 981) to the APS. The route is marked on this map.

- Be aware of increased traffic during this period. Full contractor presence on site will be in effect throughout this period.
- Be patient if following a vehicle travelling at slower speed.
- Use alternative routes, if possible.
- Traffic control will be enhanced during this period.
- Only authorized vehicles should be in the APS infield.


# Amenities

During the year-long shutdown, amenities in the 400 area may be affected by the construction.

- The 401 Grille will remain open to the Lab, as well as contractors, throughout the shutdown. The 401 Grille's hours of operation are Monday-Friday, 11 a.m. to 1:30 p.m.
- The APS-U project should not affect the APS Conference Center, which includes the 402 Auditorium, 402 Lower Gallery and 402 E1100/E1200. These areas should remain available for meetings and events during the shutdown. Building 401 A1100 conference room will be reserved for subcontractors and unavailable during the shutdown.

# Tours

The APS experiment floor and storage ring will not be available for most visitor tours during the shutdown with few exceptions. Those exceptions will be approved on a case-by-case basis by PSC management. The number of visitors will be limited, visitors must be escorted, and in some instances, will require the proper PPE.

- All tour requests must be submitted in advance through the work request system. Do not bring people to the APS without prior approval.
- The 401 Atrium, fifth floor overlook and first floor visitor viewing gallery will be available for most tours.

# Points of Contact

For storage ring-related requests and questions:
Mark Erdmann (erdmann@anl.gov, 630-252-7282).

- Backups: Ralph Bechtold for accelerator tunnel (bechtold@anl.gov, 630-252-2906), Fernando Rafael for mezzanine (frafael@anl.gov, 630-252-6257).

For beamline-related requests and questions:
Robert Winarski (winarski@anl.gov, 630-252-9921).

For safety-related requests and questions:
Tiffany Freedman (tfreedman@anl.gov, 630-252-5767),
Paul Rossi (prossi@anl.gov, 630-252-4192).

For injector system requests and questions:
Lisa Berkland (lberkland@anl.gov) and Greg Fystro (gfystro@anl.gov, 630-252-8477).

# On-Call Management

## PSC

Laurent Chapon
Associate Laboratory Director, Photon Sciences
Director of the APS
lchapon@anl.gov, 630-252-6820

Denny Mills
Deputy Associate Laboratory Director, Photon Sciences
dmm@anl.gov, 630-252-5680

Jonathan Lang
Director, X-ray Science Division
lang@anl.gov, 630-252-0122

Dean Haeffner
Associate Division Director
haeffner@anl.gov, 630-252-0126

John Quintana
Deputy Associate Laboratory Director, PSC Operations
jpq@anl.gov, 630-252-3305

Paul Rossi
Directorate Safety Manager, Photon Sciences
prossi@anl.gov, 630-252-4192

Mike Edelen
Director, APS Engineering Support Division
jedelen@anl.gov, 630-252-2068

John Byrd
Director, Accelerator Systems Division
jbyrd@anl.gov, 630-252-5392

## APS-U

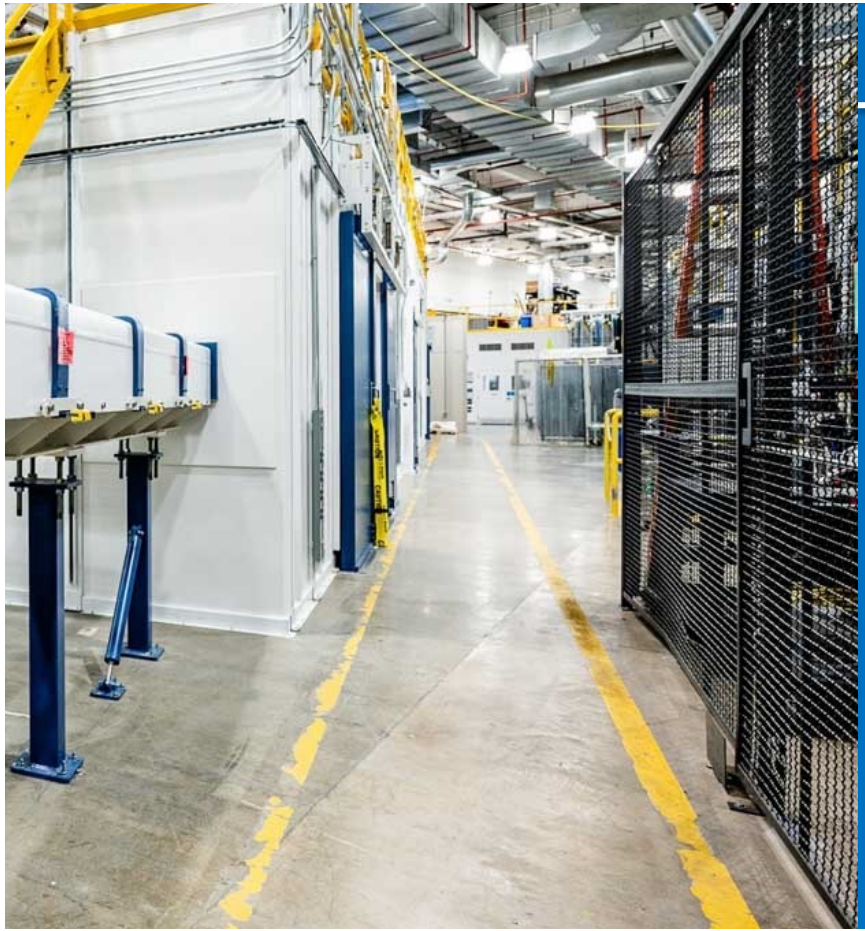
Jim Kerby
Director, APS Upgrade Project
jkerby@anl.gov, 630-252-5264

Elmie Peoples-Evans
Manager, APS Upgrade Project
epeoplesevans@anl.gov, 630-252-2311

Mark Erdmann
Storage Ring Removal and Installation Coordinator
erdmann@anl.gov, 630-252-7282

Robert Winarski
Beamline Installation Coordinator
winarski@anl.gov, 630-252-9921

PSC management, including APS-U management, will be on call to answer questions.



# Floor Coordinators

Floor coordinators are available during working hours (6 a.m.-5 p.m. Monday-Friday). To contact the floor coordinator on duty, call 630-252-0101 or visit the floor coordinator request page. To contact a specific floor coordinator, please visit this page.

- Sectors 1-4: Elizabeth Hardt
- Sectors 5-8: Bruno Fieramosca
- Sectors 9-12: Clay White
- Sectors 13-16: John Mazzio
- Sectors 17-20: Matt Spilker
- Sectors 21-24: Ashley Wayman
- Sectors 25-29: Shane Flood
- Sectors 30-35: Steve Bogdan

# Planning for Success

This shutdown will be unlike any other in the history of the APS.

With teamwork, attention to safe work practices, respect for others' views and the integrity to speak out when needed, we will successfully complete the upgrade, lighting the way toward the future of science.