



# Sector 15 Orientation Guide



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## Important Phone Numbers

<b><u>Emergency*:</u></b>	In-house phones:	911
	Cell or outside lines:	630-252-1911
<b><u>Non-Emergency*:</u></b>	Incident Reporting Hotline:	811
	Cell or outside line:	630-252-1811
<b><u>Floor coordinator:</u></b>		2-0101
<b><u>Outside line:</u></b>	Dial '7' followed by '1' + area code and 7-digit phone number.	
<b><u>Guest House:</u></b>	Dial '5' wait for tone. Then dial '0' for front desk, or '2' + 3-digit room number	
<b><u>*When in doubt call 911</u></b>		

## Stop 1 Lab Office Module (LOM)

### **Safety First Principle and the ANL Stop Work Authority Policy**

The Safety First Principle and the ANL Stop Work Authority Policy state that both your CAT and the APS, as well as other ANL personnel with safety responsibilities, have the authority to stop any CAT-related activity that in their judgment poses a clear and present threat to health and safety. This authority includes the right to require a safety review of any task to assure that all appropriate hazard controls are in place before the task is performed.

If you notice a serious safety problem in your work area, **stop working immediately**. Secure your equipment and cordon off the work area, and then contact your CAT Safety Coordinator. Similarly, if you see anyone working at the APS under conditions that appear unsafe, warn the individual and report your observations to the appropriate supervisor or Safety Coordinator. If the Safety Coordinator is unavailable or if the situation could affect activities outside your sector, notify an APS Floor Coordinator immediately.”

### **Important Safety Documents, Policies and People**

The following safety documents may be found in the 434D office area and/or online:

- **APS Experiment Hazard Classes**
- **NSF's ChemMatCARS Safety Notes**
- **CARS Safety Plan**
- **Sector-specific orientation**
- **ANL ES&H Manual**
- **Integrated Safety Management**

### **User Printer Area**

A fax machine and printer are available for your use. The printer paper is located in the upper right hand drawer of the cabinet.

## **Lounge Area**

Please help yourself to any refreshments. Please help us to keep the lounge tidy by cleaning up any spills and discarding any left-over food or drink left in the refrigerator.

## **Stop 2                      Electronics Lab**

### **Electrical Repair Area**

This resource is available. If you are interested in it, please see your NSF's ChemMatCARS Contact Person. Do not attempt to service any electrical equipment (yours or ours).

Review the APS User Safety Update on Electrical Safety.

## **Stop 3                      Chemistry Lab**

### **Personal Protective Equipment**

These resources are available to you for your safety. *You must wear safety glasses at all times.*

Gloves and lab coats must be worn while using and handling chemicals. Face shields and masks are also available and must be worn when experimental conditions require their use. Safety glasses are located outside of the chemistry lab doors on the wall. Lab coats and face shields are located on the coat rack inside the lab. Gloves and masks are located in the cabinet by the hood. If you cannot locate these items, contact a staff member. Please do not proceed until you have obtained all of the necessary personal protection equipment to perform the experiment safely.

### **Eyewash and Safety Shower**

These resources are available to you for your safety. Eyes should be flushed for full 10-15 minutes in the event of introduction of foreign material

### **First Aid Kit**

The first aid kit is located on the wall by the door. The general rule is "paper cuts get a Band Aid". For all other emergencies please call 911 from any site phone or 630-252-1911 from a cell phone. It is important to specify to the dispatcher the type of emergency (i.e. chemical spill, medical, fire, etc) in order for them to send the appropriate help. Please indicate that you are in building 434D. Please call 811 to report an incident.

### **Overhead Storage**

Do not store any items on shelving in such a manner that they overhang and can be knocked off. Do not store items on top of the wall-mounted cabinets. If additional storage is needed, please contact a NSF's ChemMatCARS staff member to make arrangements.

## Chemical Cabinets

There are four cabinets available. Please note that these cabinets serve as storage for chemicals, samples, and wastes. Therefore, always label your container accordingly.



## Acid Spill Kit

The Acid Spill Emergency Cleanup Kit is located on top of the Acid/Corrosive Chemical Cabinet.



## Transporting Chemicals between Chemistry Lab and Experimental Floor

Use the yellow plastic tray to transport chemicals between the lab and experimental floor. It is forbidden to carry glass containers otherwise. If there is a chemical spill, call 911.



## Fume Hood

This resource is available to you for your safety. You are expected to use it when working with chemicals that are volatile, corrosive, etc.

## Other Laboratory Equipment

If applicable, point out location of purified water unit, sonicator, vacuum dessicator, electronic balance, pH meter, and other laboratory equipment. These items are for your use and convenience. Please treat with care and clean up after finishing.

## Chemicals

There are many chemicals available for your use in the laboratory. Please check the inventory for availability.

When a chemical bottle or container has been emptied of its contents, please notify staff so it can be reordered if necessary and the bottle can be disposed of or reused as a waste container properly. Please do not dispose of the container yourself. Staff will do this for you.

## Sample Storage

Samples are not to be stored in the hood for any length of time other than when working with them during your experiment.

Samples and Chemicals may be stored in the cabinets during your visit to the facility. A staff member will assign you a space upon request. All samples stored in the cabinet will be labeled with your name, your institution's name, the date, and the contents. **ABBREVIATIONS ARE NOT ACCEPTABLE.**

Samples may be stored in the laboratory refrigerator during your visit. The Samples must be labeled in the same manner as you would for storing them in the cabinets. These samples must be removed upon your departure and either taken/shipped back to your home institution or logged and disposed of as a hazardous waste.

## Disposal of Chemical Waste



(Hazardous waste collection area located in the Chemistry Laboratory)

**Absolutely nothing is placed in the common trash bins or down a sink except waste that might be generated in a common kitchen. All other waste must be bagged, logged by staff, and placed into proper disposal containers). All waste disposal should be coordinated with your NSF's ChemMatCARS Contact Person.**

## Barcodes

Every hazardous waste container must have a barcode attached to it. They are located in an envelope on the white board in the chemistry lab. If the envelope is empty please ask staff to obtain the barcodes for you.

## Waste Log

All waste must be accounted for in the hazardous waste log. Every section of the log must be properly filled out and a staff member must review and sign it.

## Waste Transfer

Before we can dispose of your hazardous waste through Argonne's Waste Management System, we must have and maintain "process knowledge" of that waste. A Waste Transfer sheet is necessary to obtain this knowledge. This document will have to be completed and attached to the waste log. After you have completed this form, have a staff member review and sign the document.

## Waste Storage

There are five areas in the chemistry lab designated for waste storage. They are labeled as follows:

1. S= Non-Flammable, Non-Acidic/Corrosive Solid Waste
2. NL= Non-Flammable, Non-Carcinogenic, Non-Acidic/Corrosive Liquid Waste
3. F= Flammable Liquid or Solid Waste
4. A= Acidic/Corrosive Liquid or Solid Waste
5. N= Non-Flammable, Non-Acidic/Corrosive Liquid Waste

## Disposal of Glass and Sharps



**Uncontaminated:** Large red buckets with plastic lids are generally designated for uncontaminated glass sharps. Smaller red containers are designated for metal sharps such as razor blades and needles. See a NSF's ChemMatCARS staff member if you are unable to locate such a container.

**Contaminated:** Rinse out chemical residue, dispose of rinse solution properly, and treat sharp as uncontaminated...OR package entire sharp for separate disposal as contaminated solid waste. Insure that sharp edges are properly shielded.

## **MSDS Manuals**

There is an MSDS sheet in this manual for every chemical we use. If you find there is not one for a chemical you are using, please let your NSF's ChemMatCARS Contact Person know right away. We can obtain one for you. You have the right to know.

## **Cleanup**

You are expected to fully clean up after your experiment and dispose of waste in manner described above.

## **Stop 4                    LOM Hallway**

### **Fire Alarm**

Show user location of fire alarm pull. If the alarm goes off, users should exit through the side doors. They need to then assemble in the parking lot for a head count. Once the all clear bell has rung, you may proceed back into the building.

### **Fire Extinguisher Location**

There are always two placards visible in LOM hallway. These are dry-chemical, type ABC extinguishers (ordinary combustibles, flammable, and electrical). Always call 911 first. Always have an exit route at your back in the event of extinguisher usage.

### **Men and Women's Bathroom**

The bathrooms and machine shop are designated tornado shelters. Tornado alerts are announced over the public address system. Proceed back to your work area only after the "all-clear" message is announced.

### **Break Room and Kitchen Facilities**

Due to the large amount of users that CARS as a whole receives, it is very important that you label food kept in refrigerator. Please remember when you leave, dispose of anything you may have left in the refrigerator. It is policy that there is to be **NO** Alcoholic Beverages of any kind on the APS site. There is a self-serve coffee cart that is here for your convenience.

## **Stop 5                    Experiment Floor**

### **Entering Floor from LOM**



Look both ways to insure your safety.

## **Dosimeter Usage**

Dosimeters are not required for users.

## **Exit Signs**

At any point on the experimental floor hallway, you will be able to see an emergency exit sign.

## **Fire Extinguisher Signs**

These placards are located on the columns, which are situated at evenly spaced intervals along the experiment floor hallway. These extinguishers are dry-chemical, type ABC.

## **Tricycles**

If you need one, talk to a NSF's ChemMatCARS staff member. Trikes are not for general use.

## **Machine Shop**

This is also a tornado shelter. Users are not allowed to use any equipment in machine shop. If you need machining, please see a NSF's ChemMatCARS staff member.

## **Work Areas and Aisles on the Experiment Floor**

Please keep the work area orderly and neat. Use common sense. Please return any equipment or tools to their storage areas immediately after use. Aisles marked with yellow floor tape must be free for fast egress.

## **Radiation Survey Meter**

If the red light goes on and it starts beeping, leave the area and call 911. The meter is located immediately upstream of 15 ID-A on the outboard wall.



## Stop 6 Control Area

### Beam line Control Computers

The NSF's ChemMatCARS Contact Person will give you more information on these computers. Never install any software on these computers without approval from a NSF's ChemMatCARS staff member.

### Laptops

Never plug laptop ethernet connection directly into our network. Access the APS wireless network using the wireless card in your laptop. We can also provide this card if needed.

### Phone Numbers

Review emergency and non-emergency numbers listed at beginning of this guide and located on the experiment floor in the Beam Line Experiment Station.

### Cryogen

If this is needed, please alert a NSF's ChemMatCARS staff member.

**Do not attempt to refill the large compressed liquid cylinders.**

### Lab and Office Keys

A NSF's ChemMatCARS staff member will show you the location of keys for the LOM and laboratories for use during off hours when these areas secured.

## Stop 7 Beam Line Experimental Station

### Gas Panel

Show and explain use of gas panel inside the station.



### Water Shutoff

Do not try and stop a water leak if one occurs. Call the floor coordinator immediately.

## Station Search Buttons (Show and Explain)



## Hutch Door Close Button



To perform a Search and Secure, complete the following steps:

<b>Check the Area</b>	Check for people around the area of search box 1. When you are certain no one is present, press the button on box 1. If the station has multiple search boxes, proceed to search box 2, and so on. An amber light flashing on each box in succession will indicate that you are following the proper order. During this process, a voice warning and a red strobe light will indicate that a search is in progress.
<b>Close the Door</b>	After buttons on all boxes have been pressed and the station has been thoroughly checked for people, exit the station. Close the door(s) by pushing the DOOR CLOSE button until the magnetic locks engage and a green light is displayed on the station door control panel. Watch to make sure that no one enters the station during this time.
<b>Confirm</b>	If a Search and Secure has been correctly performed, a steady green LED STATION SEARCH (OR SECURE) light will be seen on the Station Control Panel.

### **What if the Search and Secure fails?**

Occasionally a Search and Secure will be unsuccessful, perhaps because:

- The door was not closed during the allowed time period.
- An EMERGENCY BEAM STOP button could be depressed.
- The person searching the station could miss one of the search boxes.
- The person searching the station could release the closed button before the station door is closed and locked.

When a Search and Secure fails, the voice warning will state, "Station search invalid." If this happens, the Search and Secure must begin again from the beginning.

([http://www.aps.anl.gov/APS\\_Engineering\\_Support\\_Division/User\\_ESH/Training/TrainingManual/LMA9/LMA9p3.html](http://www.aps.anl.gov/APS_Engineering_Support_Division/User_ESH/Training/TrainingManual/LMA9/LMA9p3.html))

## Emergency Beam Stop Button



In the event that you become accidentally locked inside the experiment hutch, push the E-STOP button to prevent beam from entering the station. Then use the Emergency Door Release Mechanism to open the station door. Push the Auto Open button located on the panel. The door should automatically slide open. If this fails, press the Manual Open button and open the door by hand.

([http://www.aps.anl.gov/APS\\_Engineering\\_Support\\_Division/User\\_ESH/Training/TrainingManual/LMA7/LMA7p7.html](http://www.aps.anl.gov/APS_Engineering_Support_Division/User_ESH/Training/TrainingManual/LMA7/LMA7p7.html))

## Door Release Mechanism



## Control Panel

Explain that red lights indicate a fault or unfulfilled condition for beam delivery.



## **Shutters**

**Staff:** Describe the shutter system (FE, FOE and any other shutters in the experimental station). Explain that closing the FE shutter also blocks beam to the monochromator and upsets thermal loading and alignment. Demonstrate how to open FE and FOE shutters using 1) the control box buttons and 2) the MEDM panels on the workstation. A shutter can be closed from any panel, but opened only from an active panel.

## **Electrical Power strips and Extension Cords**

Users shall only use cords on the beam line assigned by the NSF's ChemMatCARS Contact Person for the experiment. Do not plug anything in to the hutch unless it has been checked by a NSF's ChemMatCARS staff member. In general orange outlets are for computers and sensitive electronics, while black outlets are for heavy current devices such as heaters, vacuum pumps, etc.

## **Stop 8                      Gas Cage**

### **Empty Gas Bottles**

If a gas bottle runs dry, there should be a spare in the outdoor gas cage. Contact NSF's ChemMatCARS staff for assistance.

### **Gas Cylinder Used In An Experiment**

Cylinders should be secured to the wall at all times.

## **Stop 9                      Floor Coordinator Office**

### **Introduce user to the local floor coordinator Lisa Berkland**

Floor Coordinators are the primary point of contact between the APS and the user community when it comes to technical matters. Their basic responsibility is to facilitate user activities by providing technical support.

## **Stop 10                    NSF's ChemMatCARS User Coordinator**

### **Introduce user to our NSF's ChemMatCARS User Coordinator Natalie Chen**

The Coordinator can help you with many non-scientific arrangements and questions.

**Staff:** Have the user sign and date the "SECTOR ORIENTATION RECORD" form at this time. You sign and date as the responsible individual and give form to Natalie.