

BNL Physics Dept. Safety Introduction



Our mission is to lead and support discovery-based, innovation-driven research at the frontiers of the subatomic world. We are world-leading in nuclear physics research, building and operating accelerator-based user facilities that serve international scientific communities. We also play a leading role in global particle physics programs that push the limits of precision and expand our understanding of the cosmos. Our pursuit of this fundamental discovery and research yields scientific and technological breakthroughs, and applications that benefit society—such as radioisotopes used to support industrial, medical, and national security needs.

ES&H – LEC – ESRC: Achim Franz
Training Coordinator: Erica Lamar
ESH Representative - ECR: Jessica Panzarella

06/04/2024

E. Lamar (x2585), A. Franz (x4750)

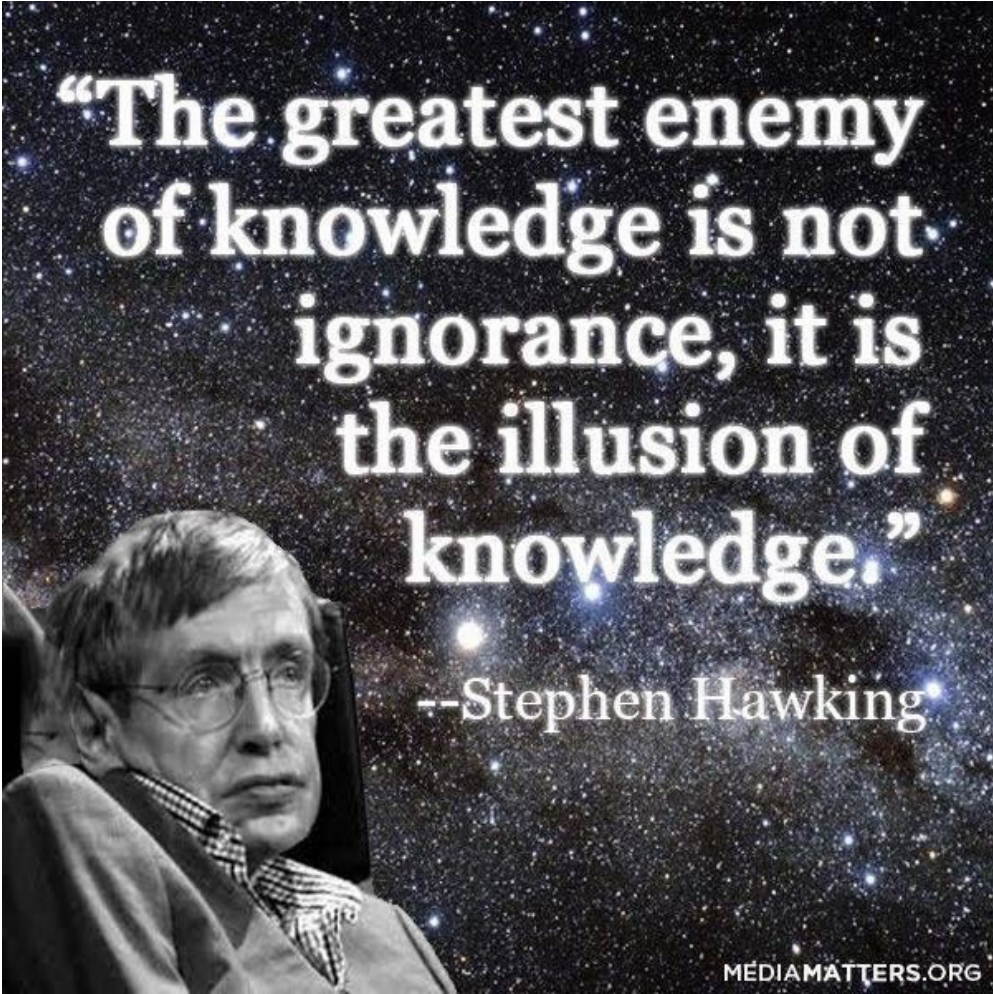


Welcome

- Learn, meet new people, work, and most of all be safe
- Make yourself familiar with the area, fire alarms, phone, ALL the exits, 510 is a large building ...
- Know what to do in an emergency

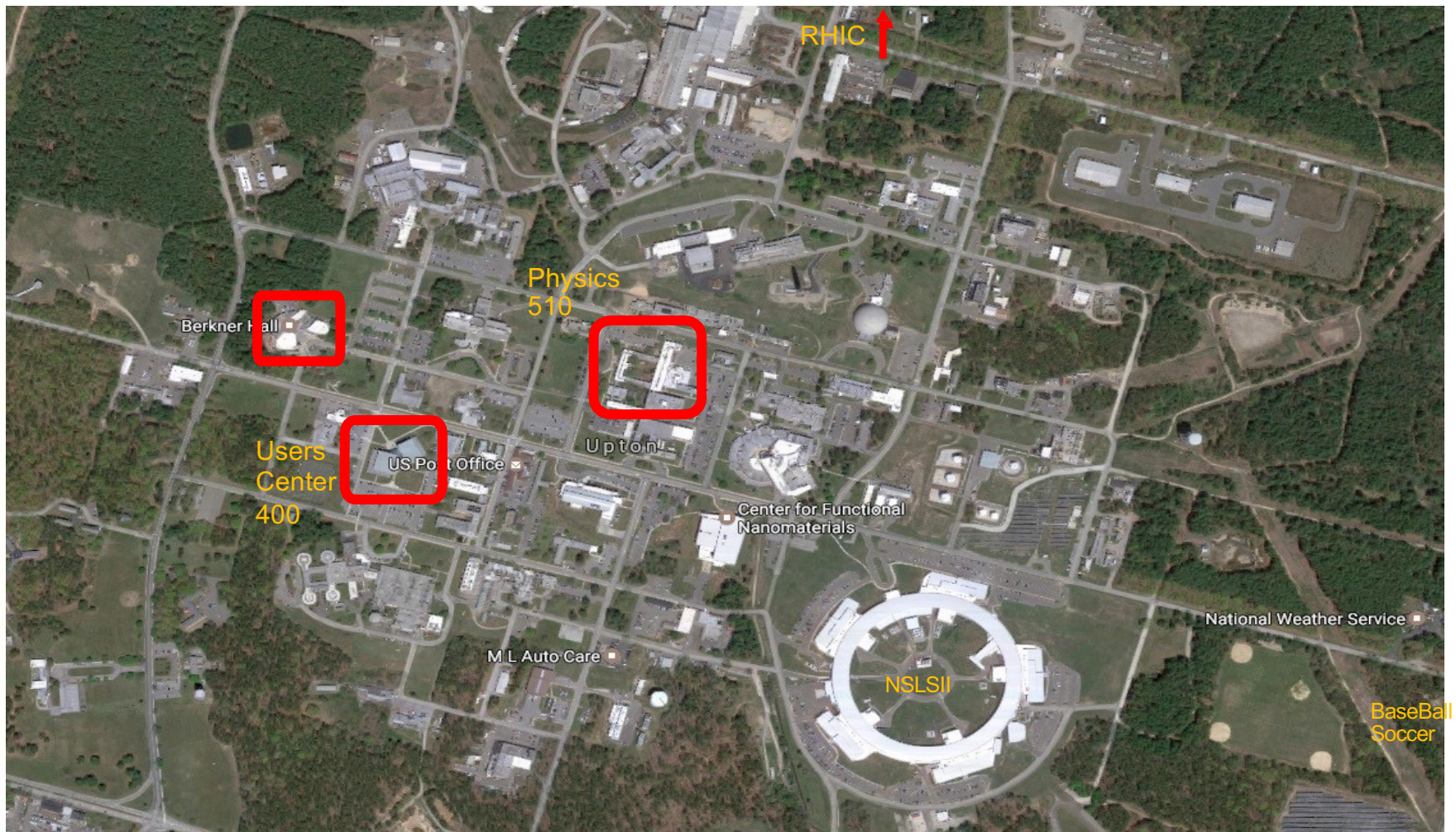
- There is no such thing as a stupid question, only stupid answers
- If you think your question is too stupid to ask, most others in the group have the same thought

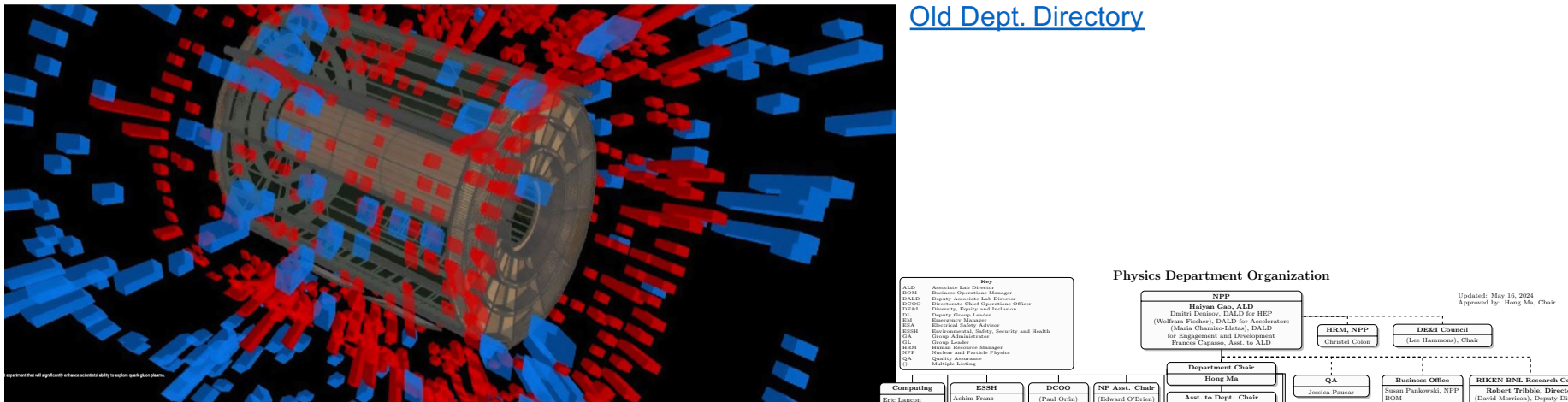
- Always wear the right gear, required PPE, have all training done
- Limit work alone, especially off hours, and not in a lab, check with your supervisor



**“The greatest enemy
of knowledge is not
ignorance, it is
the illusion of
knowledge.”**

--Stephen Hawking





caption that will emphasize scientist's daily to explore dark matter.

- Dept. Directory
- Chart (PDF)
- Seminar & Colloquia Committee
- Event Calendar

Department Groups Physics Experiments

High-Energy Physics

Cosmology & Astrophysics

Solving problems in observational cosmology: how to measure and constrain properties of dark matter, dark energy and the standard cosmological model.

Electronic Detector

Studies very rare processes at the Intensity Frontier.

Omega

Group members are collaborators on the LHC ATLAS experiment.

High-Energy Theory

Focuses on providing theoretical foundation for the search for physics beyond the standard model, including lattice QCD calculations of key quantities required for this quest.

Software and Computing

Nuclear Physics

sPHENIX

Responsible for the operation of the sPHENIX experiment at the Relativistic Heavy Ion Collider (RHIC) and the analysis of data from the detector. The group also supports the PHENIX collaboration as it finalizes the analysis of collected data. The group contributes to the design of the coming EIC detector, ePIC, and to the neutrinoless double beta decay experiment, nEXO.

STAR

Responsible for the operation and physics exploitation of the STAR experiment at RHIC.

Cold QCD

Lead and support of the Cold QCD program at RHIC and the future EIC. This includes the scientific program, hadron polarimetry and the efforts towards the realization of an experimental program at EIC.

RIKEN BNL Research Center

Conducts quantum chromodynamics and proton spin structure research.

Seminars & Colloquia

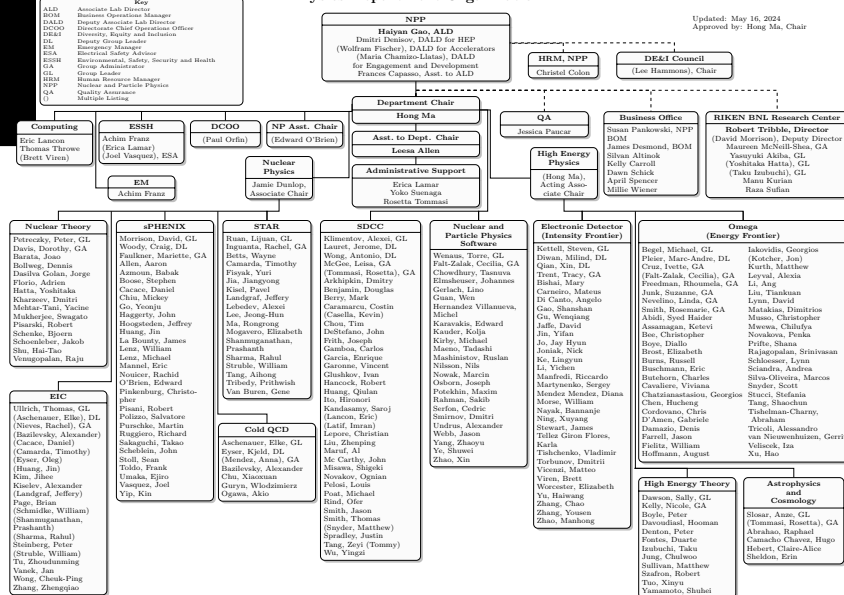
- Nuclear
- High-Energy
- Colloquia

JUN Thursday	Hybrid RBC seminar Weyl fermions on a finite lattice Spryagin Sen 12:30 p.m., Bldg. 510, room 2160
JUN Friday	NT-RBC seminar Probing gluon TMDs in J/psi production processes at the EIC Prof. Ananta Mukherjee, Indian Institute of Technology Bombay 11 a.m., Large Seminar Room, Bldg. 510

- Patrick Chivalis
- Colloquia
- Events Archive
- Nuclear Physics
- Theory Seminars
- Schools & Lectures

Physics Department Organization

Updated: May 16, 2024
Approved by: Hong Ma, Chair



Staff Directory





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Safety & Training Office

General Information

- [Physics Department Rules Everyone Must Know](#)
- [Safety Shoes and Eyeglasses Instructions](#)

Local Emergency Plans

- [Building 510 Local Emergency Plan](#)
- [Building 510 Abbreviated Local Emergency Plan](#)
- [Emergency Brochure](#)

Environmental Management System (EMS)

- [EMS Web Pages](#)
- [Information & Aspects](#)

Experimental Safety Reviews (ESRs)

- [Experimental Safety Review](#)

Work Permits

Current permits are displayed on location, contact A. Franz, Ext. 4750, for details.

Other Information

- [Ergonomics](#)
- [Latest ESH Inspection Schedule](#)
- [BNL Occupational Injuries](#)
- [New Employee/Guest Form](#)
- [Physics OHSAS 18001](#)
- [Training for Conference Attendees](#)

About

The Safety & Training Office supports research and operations in the Physics Department by providing assistance and coordination in the implementation of Laboratory policy on:

- Health and Safety Requirements
- Environmental Compliance
- Radiological Protection
- Integrated Safety Management
- Work Planning & Control for Experiments & Operations
- Facility Management
- Self Assessment

This office is committed to: ensuring that all staff have a safe and healthy working environment; protecting the general public and the environment from unacceptable environmental, safety and health risks; and operating in a manner that protects the environment by applying pollution prevention techniques to Department activities.

For further information contact the Safety & Training Office, Room 1-43, ext. 2585. Specific requirements can be found in the [SBMS web pages](#). Training information and web-based courses are available on the Lab's [Training website](#).

All work at BNL is covered by work permits and Experimental Safety Reviews ([ESR](#)).

If you work in a lab you need to read and sign the ESR, and take all required training.

Emergency ?

If there is any indication of danger (signs of smoke, flames, etc.) you should evacuate immediately.

If a fire alarm sounds in your area and you are in imminent danger (visible smoke, flames, etc.) **evacuate immediately.**

If there are no signs of imminent danger:

- Terminate any phone calls or conversations that you are having; they are not more important than your safety.
- Activate the screen saver on your computer(s), e.g. Windows: [Window-key]-L; LINUX: Ctrl-Alt-L.
- Take your keys, cell phone, personal belongings, jacket, laptop, iPad, etc. with you. It may be hours or even days before you can get back into the building.
- Close, but do **not** lock your door.
- Exit the building by the **NEAREST SAFE** exit.
- Proceed to the **outdoor assembly** area and report to the person(s) responsible for personnel accountability (your group admin).
- Do not leave the assembly area until directed to do so by the Local Emergency Coordinator (LEC) or Fire Captain.
- Do not enter any building that has alarms sounding.

The outdoor assembly area in building 510 is the front lawn west of the main entrance. The alternate location is the lawn further west, between buildings 510 and 555 (Chemistry – up the hill).

If you can hear a fire alarm, but it is not alarming in your area (hallway), you are not required to evacuate, but check with your colleagues.

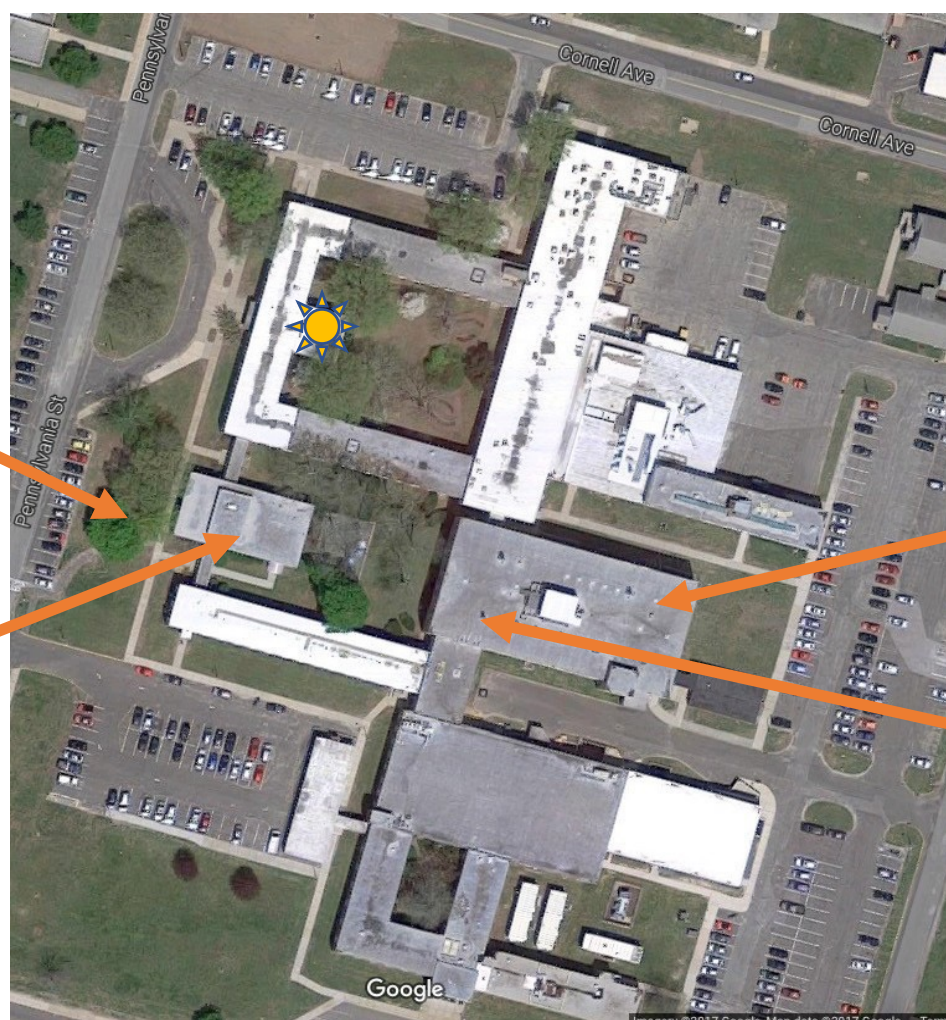
Physics Bldg. 510

Outdoor
assembly
area

large
seminar
room

3 floor
Bldg

3.Floor
assembly
area



Emergency ?

If a **continuous site siren** sounds, report to one of the indoor assembly areas: the **Large Seminar Room or 510- 3-209B**.

If you are not in a building, go to the nearest building. [Emergency information](#) is communicated through the IP telephone system ([PENS](#)).

If an **intermittent site siren** sounds, evacuate the site.

The site siren is tested each Monday around noon. PENS is tested on the first Monday of each month.

More:

- **An Automatic External Defibrillator (AED) is located at the main entrance.**
- The LEC is: A. Franz (x4750) with P. Orfin(x), M. Lenz (x5423) and R. Burns(x3745) as the alternates. In their absence, the highest-level Department manager serves as the LEC.
- A [one-page summary of the Local Emergency Plan](#) is posted throughout the building.
- The full [Local Emergency Plan](#) is available on the Physics Department web pages.
- **Remember: 510 is in the BNL - GREEN ZONE ([Protective Action Zone](#)).**
- The [Everbridge Emergency Mass Notification System](#) will allow Office of Emergency Management (OEM) to distribute emergency and non-emergency messages via email, text, cell, home, and office phones, and is similar to the "reverse 911" systems used by many local communities and school districts.

See also: [What to do in an emergency](#)

Wi-Fi

BNL offers apart from "Corus" also "[EduRoam](#)". With Corus you have to register your device and the network is not encrypted. EduRoam will not require registration and is available at many other Universities and airports.

LOCAL EMERGENCY PLAN – BUILDING # 510, Rev. 14.1

Zone and Complex:

GREEN ZONE, CENTRAL COMPLEX

Position	Name	Extension	Cell Phone
LEC	A. Franz	4750	631-816-0348
Alt. LEC	M. Lenz	5423	631-645-4769
Alt. LEC	P. Orfin	2899	
Alt. LEC	R. Burns	3745	
Facility Project Manager	T. Doyle	7556	516-779-3119
Facility Complex Manager	D. Forino	7672	631-461-2715
ES&H Coordinator	A. Franz	4750	631-816-0348
RSM	A. Franz	4750	631-816-0348

**To Report a fire, spill, medical or other emergency,
DIAL EXT. 2222 or 911**

**If using a cell phone,
DIAL 631-344-2222**

**If a telephone is not available,
USE A FIRE ALARM BOX**

For after-hours building issues, call the Site Supervisor: x4174

BUILDING INDOOR ASSEMBLY or SHELTER IN PLACE AREAS	
LOCATION:	Building 510 Auditorium (Large Seminar Room), Conference Room Building 510 3-209B
BUILDING OUTDOOR ASSEMBLY AREA	
LOCATION:	Front Lawn, West of Building 510
ALTERNATE BUILDING OUTDOOR ASSEMBLY AREA	
LOCATION:	Lawn West of 510, between Buildings 510 and 555,
Closest AED's	
LOCATION:	Lobby at the main entrance of building 510

[one-page summary of the Local Emergency Plan](#)

The full [Local Emergency Plan](#) is available on the Physics Department web pages.

510 is in the BNL - GREEN ZONE ([Protective Action Zone](#)).

Environment

- BNL is registered to the ISO 14001 Environmental Management System ([EMS](#)). Everyone should be aware of this and should understand what they can do to help the Department maintain its registration. For most of us it means reducing waste, disposing of waste properly, recycling, wise use of resources, and being aware of our impact on the environment. More detailed information is on the [Department's EMS web page](#).
 - One waste disposal issue that impacts nearly everyone is the disposal of spent batteries. Alkaline and Carbon-Zinc batteries should be disposed of by placing them in the regular trash. Other batteries (**Ni-Cd, Li-ion, Lead-Acid, NiMH, Silver-Oxide, etc.**) with hazardous components are disposed of by taking them to the Universal Waste Area in the stockroom (510-1-147).
 - Waste batteries MUST be placed in a closed container that is labeled for the type of battery that you are disposing. If there is no container for your battery type, **bring it to the ESH Coordinator**. Do NOT leave the battery in the area; this is a violation of BNL policy and NYSDEC regulations and can result in a fine to the Department.
- **Chemicals**
 - Even if you do not work in a laboratory, you may use chemicals that are tracked by the BNL Chemical Management System ([CMS](#)). A tracked chemical will have a CMS bar code attached to it. If the chemical is used up or otherwise disposed of, a CMS manager must be notified so that the chemical can be removed from the database. **Contact the ESH Coordinator for assistance.**

Security

The Physics Building (building 510) is unlocked to allow for 24-7 access. Always close and lock your office door at the end of the day, or if you will be away from your office for a length of time. When you are attending a seminar you must lock your door. Your computer(s) must also be password locked when you leave your office. We encourage to label your personal equipment (laptops, disks, radios, ...)with your name, property verifications are done regularly.

Working in Laboratories and Shops

Any work in laboratories, shops or tech areas requires work planning. For simple tasks, worker planned work is sufficient, but most lab work is covered by an Experiment Safety Review ([ESR](#)) or a Work Permit. Before beginning work, you must read and sign the work document. If there is no document for the proposed work, contact the ESH Coordinator to get the appropriate ESR or Work Permit started. ESRs are maintained, and signed, electronically. There are standing Work Permits for electrical and electronic troubleshooting, crane operation, and use of the machine shop. Before you can perform any work covered by these permits, you must be on the authorized personnel list for the permit.

If your work involves hazards or equipment that is not already listed on the ESR or Work Permit, **contact the ESH Coordinator** before beginning work. The new hazard may require changes to the ESR or Work Permit, and additional controls to maintain a safe work environment.

Ergonomics:

Repetitive stress injuries are a concern for all workers in the Physics Department. There is a link on the Physics Home Page to ergonomic information and a computer workstation evaluation tool. You are encouraged to use this tool as a self-evaluation and to follow up by requesting a personal assessment by one of BNL's experts.

Moving furniture:

Desks and other heavy furniture cannot be moved by Physics personnel. Ask for help moving furniture.

The Safe Conduct of Research

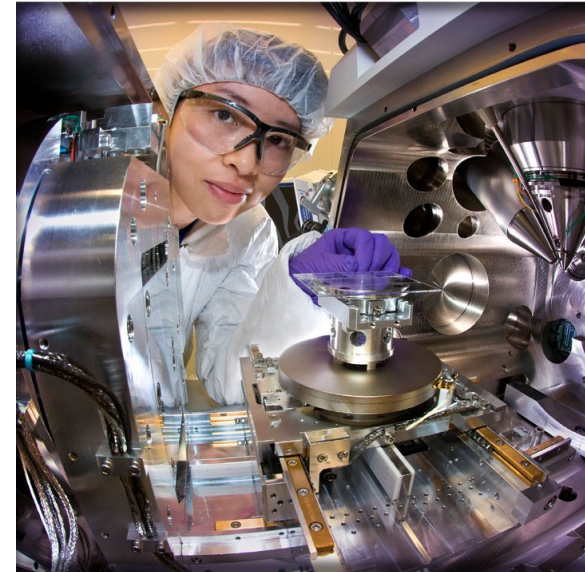
- [SCOR web page](#)
- [The Safe Conduct of Research](#)

Factors:

- Distraction/“Multi-tasking” (cell phone use)
- Incomplete understanding of procedures, Experimental Safety Review, or Work Permit
- Lack of familiarity with laboratory equipment
- Time pressure (deadlines)
- Fatigue
- Working alone in the lab
- Incomplete training

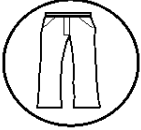








If in doubt, ask your supervisor

THE SAFE CONDUCT OF RESEARCH



Hazard Validation Tool (HVT)

typical lab posting, each is unique

HAZARD INFORMATION PLACARD				
Bldg: 0510.12	Room: 1-142 High Bay	Emergency Contact #:631-344-2222		
Dept: PO Physics Department	NO FOOD ALLOWED NO DRINK ALLOWED NO OPEN FLAME NO SMOKING			
Print Date: 06/03/24 11:50 AM				
PROTECTIVE EQUIPMENT REQUIRED FOR AREA Area Designation: Multiple Purpose Laboratory				
 LONG PANTS	 FULLY ENCLOSED SHOE	 SAFETY GLASSES IN DESIGNATED AREA		
CHEMICAL HAZARDS OF THE AREA				
 FLAMMABLE WATER REACTIVE	 CARCINOGEN RESPIRATORY SENSITIZER REPRODUCTIVE TOXICITY	 DERMAL SENSITIZER	 CORROSIVE	 GAS UNDER PRESSURE
 STARTLE HAZARD				
ADDITIONAL HAZARD INFORMATION				
Cryogenic vessels are used in some areas. PPE required				
Hard-hats are required when crane is in use				
ESR / SWP / RWP / PI: PO-109-2023, PO-105-2023, PO-091-2022 ←				
Utility Isolation: Electric: Circuit breakers on all walls Steam: Shut offs above each Trane heater - 12' above floor Master steam shutoff located inside Machine Shop (1-141) on South Wall, East end.				
ADDITIONAL INFORMATION PLACARD (Optional Placard provided for line organizations to add information applicable to their operations)				
Primary Contact: Franz, Achim	Work: 4750	Home/Cell: 631-816-0348		
Alternate Contact #1: Doyle, Thomas	Work: 7556	Home/Cell: 516/779-3119		
Alternate Contact #2: Lenz, Michael	Work: 5423	Home/Cell:		

← Laboratory type and Minimum PPE required for entry into the area.

← Hazard symbols for the chemicals in the area.

← Additional information and contact numbers for entry and work.

Personal Protective Equipment (PPE)

- **ALL** staff members and students are **required** to wear posted PPE, such as safety glasses, lab coats, long pants, and enclosed shoes.
- **Check** HVT placards outside of your work area for Area-based PPE requirements.
- Follow the **Experimental Safety Review(ESR)** requirements for Task-Specific PPE.
- Ask you supervisor/mentor about obtaining required PPE.

ACCEPTABLE	UNACCEPTABLE	WHY?
		Openings in front and back
 <i>Leather or plastic, no cloth fabric surfaces</i>		Openings in front and back
		Openings in front and back
		Heel too high and insufficient coverage in front
		Heel too high and not a closed toe

Personal Protective Equipment (PPE)

The room is located in [Building 30](#)
(Brookhaven Center).
[Short [video](#) on the content of the room.]



Glasses

Open Wednesday ONLY

9 a.m.—12:30 p.m., 1:30 p.m.—4:30 p.m.

CLOSED Monday, Tuesday, Thursday, Friday

Prescription safety glasses can be obtained by having your Department or Division Safety Coordinator complete [BNL Form #2211B](#). The signed form must then be submitted to the Safety Glass Representative in Building 30.

A new eye prescription must be submitted every two years. A maximum of one pair of glasses will be issued per year. Contact Erica Lamar with an account number.



Shoes

Open Tuesday & Thursday ONLY

9 a.m.—12:30 p.m., 1:30 p.m.—4:30 p.m.

CLOSED Monday, Wednesday, Friday

Employees requiring safety shoes must have an approved [E-Procurement](#) safety shoe voucher to purchase shoes in the program at no cost. The safety shoe voucher must then be submitted to the Safety Shoe Representative in Building 30. Other shoes are available outside the standard program which may be purchased at the employee's expense.

A maximum of two pairs of shoes will be issued per year. Contact Achim Franz with an account number.



Signs and barricades

- **Do not cross barricades** (tapes, chains, fencing, etc.).
- **Observe** hazard signs for high noise areas, radiation areas, and construction zones.
- **Training** is required for entry into certain areas.
- **Avoid** areas with “Wet Floor” placards; walk carefully when necessary.
- **Stay** out of construction areas.



Driving at Brookhaven

Brookhaven Lab observes NYS traffic laws:

- You must have a valid driver's license to drive onsite (no Learner's Permit).
- Obey the speed limit: **30 mph** or as posted.
- Come to a **full stop** at stop signs.
- Slow down for slow-moving vehicles (e.g., Kubotas, maintenance vehicles).
- Yield to emergency vehicles.
- Stop for pedestrians in crosswalks.
- Use hands-free electronic devices.
- **You could get a ticket for violations.**



Pedestrian Safety

- **Cross** street at marked crosswalks and observe traffic-control signals.
- **Before** crossing in a crosswalk, make sure cars come to a complete stop.
- If you have to cross the street where there is no crosswalk, **yield** to oncoming traffic.
- **Use** the sidewalk when available.
- If no sidewalk is available, **always** walk or jog facing traffic.
- In darkness, at dawn or dusk, wear **reflective gear or bright clothing**.
- **Don't text or email** while you are walking.



Biking Safety

- **Helmets** are **required** while biking onsite.
 - Order a helmet through your department.
- **Cyclists** are required to obey the same rules as drivers:
 - ✓ Follow traffic.
 - ✓ Stop at stop signs and red lights.
 - ✓ Observe right-of-way rules.
 - ✓ No texting or talking on a cell phone while riding.
 - ✓ Don't wear headphones in both ears.
- **Use** a light, head lights, and tail lights (NY State Law) and reflective clothing when riding in dusk or darkness.
- **Give** pedestrians the right of way in crosswalks.
- **Don't** ride on sidewalks.
- **Be alert** for road and trail hazards such as rocks, potholes, drains, and construction sites.
- Unless a tandem bike, or there is a designated/proper child seat, **only one one person** may ride on a bike at a time.



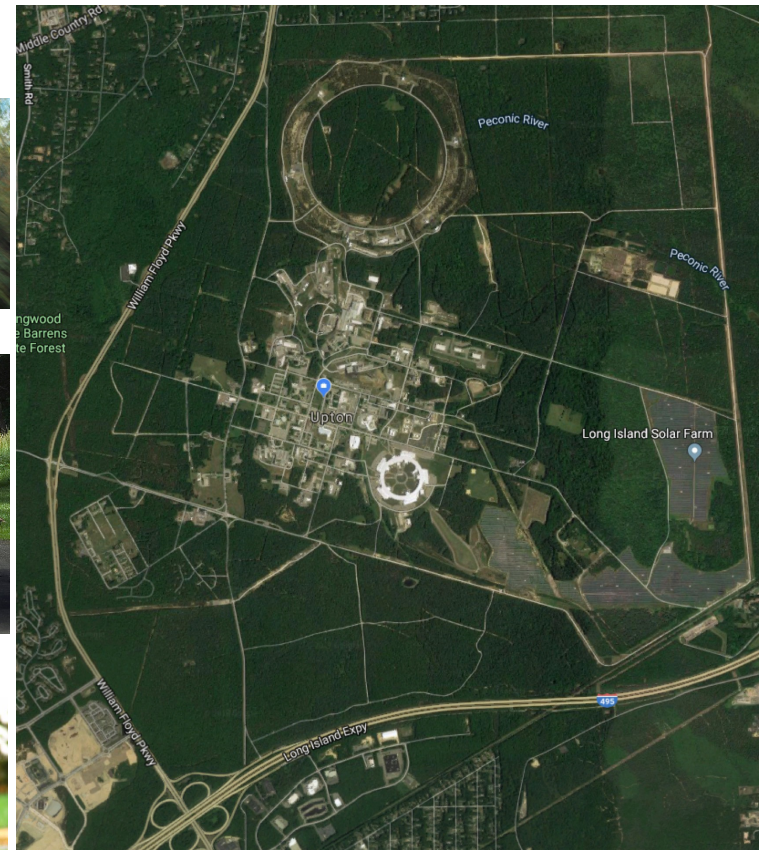
E-Scooters & E-Bikes

- Hoverboards and motorized skateboards are **NOT** allowed onsite.
- Do **NOT** store e-scooters and e-bikes inside any buildings onsite.
 - E-bike batteries can cause fires.
 - Do **NOT** charge scooters/bikes in dorms.
- Follow traffic rules while riding these vehicles onsite.
- Wear a helmet.



Recreational Activities

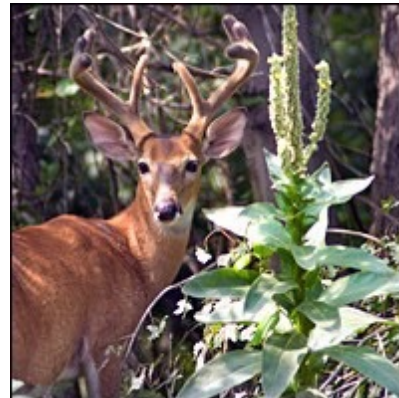
- Brookhaven has over 5 thousand acres of trails and woods...
- When running, walking, or biking in wooded areas, follow these precautions:
 - Stay on trails
 - Tell someone where you are going
 - Bring a cell phone with you
 - Study a site map
 - Go with a friend
 - Do not smoke/use open flame
 - Watch out for turkeys, deer, and geese!
- If injured, report to the Clinic (or to Fire/Rescue during after-work hours).



Natural Hazards

Lyme Disease & Tick-borne Disease Awareness TQ-LYME1

- To avoid **ticks**, avoid grassy or wooded areas and wear protective clothing (i.e., long pants) and repellent.
- **Watch out** for wildlife, especially deer, geese (who may be protecting their nest), and turkey, when walking, bicycling, and driving.
- **Be aware** of stinging insects, swarms, or nests.



What Should I Do in Case of an Accident or Injury?

- If an **emergency**, call **Ext. 2222** or **(631-344-2222** from a cell phone) or **911** from any Lab phone.
- **Report** the injury to your supervisor immediately *no matter how minor*. Do not leave the site without reporting.
- **Seek** medical attention at the Occupational Medicine Clinic (Bldg. 490, Ext. 3670).
- **Contact** Fire/Rescue (Bldg. 599, Ext. 2222) if the Clinic is closed (after hours). **Do not leave site without following this step.**
- **Report** near-misses (close calls) to your supervisor/host or Environment, Safety and Health Rep. (ESHR) immediately.





Safety & Health Resources: Here to Help!

- Your Mentor/Supervisor
- Your Dept./Division Environment, Safety and Health Rep., Environmental Compliance Rep., or ESH Manager, i.e. Jessica Panzarelle and Achim Franz
- Police and Fire/Rescue (Ext. 2222)
- Occupational Medicine Clinic (Ext. 3670)
- Safety Hotline (Ext. 8800)
- Safety Website: <http://intranet.bnl.gov/safety/>
- Safety & Health Services Division (Ext. 4056)



Avoiding slips, trips, and falls

Slips, trips, and falls are among the leading causes of recordable injuries at BNL. The seemingly simple act of walking can easily result in injuries and lost work days. See what you can do to avoid a fall.



Safety Videos

Safe Driving Tips

Other Safety News



Learn About Safety Day, June 17, 2015



BNL Safety Survey: Summary of Results and Path Forward



Distracted Driving: Risky Behavior

Latest Safety Video



Securing Your Facility

Brookhaven Laboratory's Laboratory Protection Division asks all staff to be mindful of securing buildings after hours, on weekends, or when they are otherwise left unattended.

Incidents & Statistics

15 Safety Statistics

DART: 6 Recordable: 11

Recent Safety Incidents

- ▶ Employee Feels Sharp Back Pain While Entering Van
- ▶ Employee Twists Knee While Walking on Incline
- ▶ Employee Steps on Broken Stair Tread, Injures Knee

All Incidents »

Questions ?

Work, learn, **be safe**