OPERATIONS INFO
☐ E Operations Status  
Beamline is in commissioning status; Lead BL Scientist must contact M Bobis-DeLong to finalize this form and provide names of trainers before using this form to train users

ACCESS
☐ F Signs and Placards  
Locate and discuss all posted signs and placards (Hazard Info Placard, contact info, PPE)
☐ FB Hutch Access  
Train user for Beamline Hutch Search and Secure and Breaking Security. Be aware of moving door hazards
☐ F Safety Approval Form  
Users must review SAF; review controls and other training for SAF or beamline
☐ F Lead Experimentalist  
Lead Experimentalist must ensure that safety, training, and reporting requirements are completed

EMERGENCIES
☐ F FLOCO/Control Rm  
Discuss process to contact a Floor Coordinator (FLOCO) and the Control Room for assistance
☐ F Beamline Staff  
Discuss process to contact Beamline Staff for assistance and operations (emergency contact info, phones)
☐ F Emergencies  
Discuss where to go and who to contact during an emergency. Locate exits and fire alarm pull boxes
☐ F Emergency Lights  
May come on for self-test with lights and buzzer
☐ F Eye Wash/Shower  
Locate eye wash/shower
☐ F Spill Station  
Locate spill control station
☐ F Emergency Beam Stop  
Locate emergency beam stop buttons, discuss purpose and operation
☐ F Radiation Monitors  
Identify radiation monitor locations, move away from area, call control room if area monitors sound off
☐ F Oxygen Monitors/Alarms  
Locate hatch ODH monitors, discuss alarm response, verify green light is on, discuss LOB receiving room access
☐ EB Gas Alarms  
Discuss any gas systems and alarms in the area, and the appropriate response to alarms

BEAMLINE EQUIPMENT
☐ F Config Control  
Identify the configuration control signs and follow configuration control policy
☐ F Mezzanine Access  
Access to mezzanine, areas above hatch roof, staircase is not permitted
☐ F User Authorization  
User is authorized to operate ONLY the equipment the user has been trained on - review operation and hazards
☐ EB User Labyrinth  
Discuss proper steps and precautions to take for use of the user labyrinth
☐ B1 Electrical Outlets  
Note outlet colors; do not plug equipment into sensitive or UPS outlets w/o beamline staff approval
☐ B2 Electrical Outlets  
Do not plug equipment into sensitive or UPS outlets w/o beamline staff approval
☐ B End Station Equip  
Point out Red Cables or High Voltage (HV) Supply for end station equip (do not touch)
☐ B1 Equip Stop Buttons  
Review operations for equipment stop buttons and when to use them
☐ B2 Equip Stop Buttons  
Review operations for equipment stop buttons and safety edges and when to use them
☐ B E-stop Buttons Reset  
User ☐ ☐ is ☐ ☐ is not authorized to reset the E-stop system after use; if authorized review reset procedure
☐ B Ergonomics  
Use caution when moving around equipment and under beam pipes, changing chambers, during equipment alignment (limited space, low pipe, trip hazards, awkward positions, personnel injury, equipment damage)
☐ B Cryogen Lines  
Discuss allowed operations with transfer lines, review operations
☐ B CryoCooler  
If cryocooler will be used, review operations for water use and shut-off valves
☐ B CryoStat  
User ☐ ☐ is ☐ ☐ is not authorized to make changes to cryostat; if authorized, review operations
☐ B CryoStream  
User ☐ ☐ is ☐ ☐ is not authorized to operate
☐ B Detector  
Review detector location, operations, hookups, cables, fill frequency, cautions for high voltage and equip damage
☐ B High Temp Apparatus  
User ☐ ☐ is ☐ ☐ is not authorized to change apparatus and temp controls (review operations; prevent burns)
☐ B Ion Chamber(s)  
Point out Red Cables or High Voltage (HV) Supply for ion chamber(s) (do not touch)
☐ B Laser Training & PPE  
If operating Class 3B or 4 laser, verify BNL laser training, beamline laser training, eye exam, PPE
☐ B Laser Present  
Laser present at this beamline (avoid direct eye exposure)
☐ B Laser Interlocks  
Only beamline staff and FLOCs are permitted to reset laser interlocks
☐ B Lenses  
Review location and operations for lens focusing
☐ B1 Mirror  
Review mirror location, operations [Grating Change ☐ Yes ☐ NA][Adjustment ☐ Yes ☐ NA][Rotation ☐ Yes ☐ NA][Tilt ☐ Yes ☐ NA]
☐ B2 Mirror  
Review mirror location, operations [Grating Change ☐ Yes ☒ NA][Adjustment ☒ Yes ☒ NA][Rotation ☒ Yes ☒ NA][Tilt ☐ Yes ☒ NA]
☐ B3 Mirror  
Review mirror location, operations [Adjustment ☒ Yes ☒ NA][Rotation ☒ Yes ☒ NA][Tilt ☐ Yes ☒ NA]
☐ B4 Mirror  
Review mirror location, operations [Grating Change ☐ Yes ☒ NA][Adjustment ☒ Yes ☒ NA][Rotation ☒ Yes ☒ NA][Tilt ☐ Yes ☒ NA]

During initial form development: If there is a number next to the designation (e.g., B1, B2, etc.), select the most appropriate content.

NSLS-II Beamline Specific Training Form BL-TEMPLATE

☐ B5 Mirror
Review mirror location, operations [Grating Change ☑Yes ☐NA][Adjustment ☑Yes ☐NA ][Rotation ☑Yes ☐NA][Tilt ☑Yes ☐NA]

☐ B4 Monochromator
Review operations for energy ranges, set up, and operation of monochromator drive, motors, bearings, power, software; User ☑ is ☐ is not authorized to adjust monochromator

☐ B1 Monochromator
Review operations for energy ranges, set up, and operation of monochromator drive, motors, bearings, gas feeds, power, software; User ☑ is ☐ is not authorized to adjust monochromator

☐ B2 Monochromator
Review operations for energy ranges, set up, and operation of monochromator drive, motors, bearings, gas feeds, power, software; User ☑ is ☐ is not authorized to adjust monochromator

☐ B3 Monochromator
Review operations for energy ranges, set up, and operation of monochromator drive, motors, bearings, gas feeds, power, software; User ☑ is ☐ is not authorized to adjust monochromator

☐ B1 Optical System
Review optical system set up, operations, water gauge for optics system, mirror, camera

☐ B2 Optical System
Review optical system set up, operations, mirror, camera

☐ B3 Optical System
Review optical system set up, operations

☐ B1 Sample Chamber
Review operations for sample chamber and mounter; User ☑ is ☐ is not authorized to modify sample chamber or add new equipment to existing flanges (if authorized, review requirements and extension policy)

☐ B2 Sample Chamber
Review operations for sample chamber and mounter; User ☑ is ☐ is not authorized to modify sample chamber or add new equipment to existing flanges (if authorized, review requirements and extension policy)

☐ B3 Sample Chamber
Review operations for sample chamber and mounter; User ☑ is ☐ is not authorized to modify sample chamber or add new equipment to existing flanges (if authorized, review requirements and extension policy)

☐ B4 Sample Chamber
Review operations for sample chamber and mounter

☐ B5 Sample Chamber
Review operations for sample mounting and sample changing

☐ B6 Sample Chamber
Train user to operate sample chamber and microscope (including vacuum) and how to mount samples

☐ B1 Sample Chamber (Robot)
User ☑ is ☐ is not authorized to make changes to device (review operations)

☐ B2 Sample Chamber (Robot)
User ☑ is ☐ is not authorized to make changes to device

☐ B Sample Environ and Cell
Review operations and sample mounting

☐ B Shutters
Review location, operations, indicators, and required sequence for beamline shutter controls

☐ B Spectrometer
Review spectrometer operations and limits

☐ B1 Table (in Hutch)
User ☑ is ☐ is not authorized to make adjustments to table (review operations; do not place objects on table)

☐ B2 Table (in Hutch)
User ☑ is ☐ is not authorized to make adjustments to table (review operations; do not place objects on table)

☐ B3 Table (in Hutch)
User ☑ is ☑ is not authorized to make adjustments to table (review operations; do not place objects on table)

☐ B4 Tables (in Hutch)
User ☑ is ☐ is not authorized to make adjustments to the hutch tables (review operations)

☐ B Temp Control
User ☑ is ☐ is not authorized to change apparatus and temp controls (review operations; prevent burns)

☐ B1 Vacuum (End Sta Eqp)
User ☑ is ☐ is not authorized to perform vacuum work and bleed ups on end station equipment; if authorized, review location, indicators, and operations

☐ B2 Vacuum (End Sta Eqp)
User ☑ is ☐ is not authorized for vacuum work or bleed ups on end station equipment

☐ B3 Vacuum (End Sta Eqp)
User ☑ is ☐ is not authorized for vacuum work or bleed ups on equip vacuum; review process to reset PPS

☐ B Water System
Review location, indicators, alarms, trips, and operations for system and shut off

☐ B WebCam
Be aware of WebCams and/or Remote Monitoring

BEAMLINE OPERATIONS

☐ B Computer Operations
Review operations for computer operations, control software, data acquisition software, machine status

☐ B Computer Software
Do not install any computer software on beamline computers

☐ B Computer Data
Review data storage, data transfer, and back up process

☐ B Passthrough Beamlines
Review operations for passthrough beamlines

☐ B Unattended Ops
User ☑ is ☐ is not requested to attend beamline at all times, as per SAF. Discuss process

ESH & HAZARDS

☐ B8 Beryllium
Identify location of beryllium articles or beryllium windows and process for notification in case of breakage

☐ B8 Cryogen Fill Station
For Cryogen Filling Station, NSLS-II training and PPE required; BNL cryogen training recommended

☐ B8 Chemicals
Discuss use, labeling, storage, spills, labs, disposal, and transportation of chemicals

☐ B8 Cryogen Use
For cryogen/cryostat use, discuss fill operations, ODH, demonstrate use, wear PPE (eye and skin protection)

☐ B8 Cryogen Dewar Fills
Liquid Nitrogen is filled by beamline staff only

☐ B8 Cryogen Transfer Lines
Discuss dewar autolfill process, ODH; if user is authorized to operate transfer lines, review operations

☐ B8 LN2 Shut Off
Review operations for LN2 shutoff buttons and when to use them

☐ F Electrical Work 50V
No work on exposed electrical components >50V without appropriate electrical training

Date: 6/1/2018
Rev Date:


During initial form development: If there is a number next to the designation (e.g., B1, B2, etc), select the most appropriate content.
NSLS-II Beamline Specific Training Form BL-TEMPLATE

Course Code PS-BST-TEMPLATE  Rev Date: 6/1/2018

☐ EB Electrical Connections  User is not authorized to adjust any high voltage, motor connections or in-hutch beamline electronics
☐ EB Electrical Equipment  User is not permitted to modify or service any electrical equipment on the beamline or perform any bake-outs
☐ EB Electrical Breakers  In case of power failure, contact the FLOCO or Beamline Staff
☐ EB Electrical Pwr Supplies  Review process to check power supplies and cables; User ☐ is ☐ is not authorized to change PS; User ☐ is ☐ is not authorized to power down PS; if authorized, review operations
☐ EB Red & Yellow Tags  Provide information about any beamline equipment or systems that are yellow or red tagged
☐ EB Gas  Show location, operations, use, fills, storage of gas (inc cabinets if any), emergency response actions, and if authorized: valve operations, gas interlocks, switching cylinders, operating transfer lines
☐ EB Ladders  Review step ladder use if needed; if ladder required, discuss set up, safety and 3-point rule
☐ EB Lifting  If lifting objects <30 lbs, keep weight close to the body (between shoulders and knees); If lifting objects =/>30 lbs, use lifting and/or mechanical aids or two person lifts
☐ EB Magnetic Fields  Magnetic fields present at this beamline - Users with medical devices/implants should stay 1' away from source
☐ EB Nano Materials  Review approved locations and controls for nanomaterial use
☐ EB PPE (Safety Glasses)  Safety glasses may be required inside hutch (discuss with beamline staff if required)
☐ EB Ventilation  Review use and operations for ventilation system and alarms, if present
☐ EB Food  Food consumption is permitted in designated food areas (LOBs)

LAB/TECH AREAS & SAMPLE PREP
☐ EB Lab Use  Discuss use of lab (including forms and PPE) and/or tech space (non-lab) area
☐ EB Sample Prep  Discuss location for sample prep; prepare samples only where instructed
☐ EB Soldering Station  Avoid skin contact with soldering iron to prevent burns to the skin; advise of process for solder scrap

WASTES
☐ EB Hazardous Wastes  Do not generate hazardous wastes without talking with beamline staff. Anyone generating Hazardous Waste must have Lab Standard and Hazardous Waste Generator training.
☐ EB Waste Location  Show relevant waste collection areas and discuss training requirements (sharps, razor blades, pipet tips, broken glass, hazardous waste Satellite Accumulation Area/SAA)
☐ EB Sharps  Place cover slips, tips, needles in sharps container

CLOSE OUT
☐ B1 Samples (Take Home)  Take samples back to home institution
☐ B2 Samples (Storage)  Review storage process for samples
☐ B3 Samples (Store or Ship)  Discuss with beamline staff whether to store samples or ship back to home institution and confirm before leaving
☐ B Shipping Haz Mat  Review shipping process for hazardous materials
☐ B Data Log Book  Complete entries in Experiment Data Logbook
☐ F End of Run Form  Complete the End of Run form for NSLS-II
☐ B Systems & Equip  Power down systems and turn off equipment voltages as required, perform PC security check
☐ B1 Shut Down/Secure BL  Secure beamline and inform the Beamline Staff experiment is complete
☐ B2 Shut Down/Contact Staff  Secure beamline and contact the Beamline Staff to disable the shutters before you leave
☐ F Housekeeping  Check housekeeping (beamline area neat, clean, free of hazards), recycling, tools returned or stored
☐ F2 Publications  Send a copy of your publication to ☑ NSLS-II User Administration ☑ the beamline


During initial form development: If there is a number next to the designation (e.g., B1, B2, etc), select the most appropriate content.
(1) Provide training for each checkbox to each user listed on the SAF as they arrive and complete the information below. If a checkbox does not apply, cross out that line. Training is valid for 1 year at this beamline only. (2) Send completed forms to NSLS-II Training, Building 745, immediately after all users listed on the SAF (who plan to arrive for this run) have been trained. Training will be entered in the user's training history.

Ensure your name and life number are correct and sign the space below that you understand the instructions provided to you in this training.

<table>
<thead>
<tr>
<th>PRINT User Name</th>
<th>Life #</th>
<th>User Signature</th>
<th>Date</th>
<th>Trainer's Signature</th>
<th>Training Entered</th>
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