

Principal Investigator:

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Secondary Contacts:

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Emergency Information:

Staff Member: 301-204-3771 (cell)

BBR (Gary Bors): 202-510-8577

All other emergencies: 911

Purpose:

This laboratory is an imaging and spectroscopy analysis laboratory. Possible safety issues to be aware of are the presence of lasers and fluorescence microscopy light sources.

All laboratories and facilities on the Broad Branch Rd. campus are controlled areas. Specific training must be completed and documented before working in this laboratory / facility.

1. Chemicals Standard Operational Protocol*1.1 Chemical and Microbial Handling, storage, and disposal:*

Study MSDA sheets on all chemicals that you work with (hard copy located in lab coat locker) or check on-line (<https://www.msdonline.com>) or with the product or kit manufacturer.

Microbes should be handled in biological safety cabinets and transported to the imaging laboratory already fixed and ready to image. Only class I (class II on a specific case by case basis agreed with PI before ordering) biohazard is allowed in the laboratory. All class I and II organisms must be handled in biosafety hoods using aseptic technique.

Appropriate protection must be worn when transferring chemicals, during sample preparation and when handling microbes and media, including lab coats, protective gloves and eye ware.

All media and culture slides, thin sections and plates etc must be clearly labeled with: media type, organism, date cultured and initials of investigator (label bottom of media plates not the lid).

All biologicals must be disposed of by autoclaving and bottles must be washed after autoclaving. Specialized media may need to be disposed of separately and must be agreed on with PI before use. Any used slides should be placed in a sharps box for disposal.

Any used media plates must be placed into autoclave bags for autoclaving. Autoclaved bags must be placed into Biohazard waste boxes for incineration. Autoclave use for trained personnel only. Training will be given in a specialized course from the PI.

All cuts and abrasions must be treated using standard antiseptic and first aid measures and reported to the PI ASAP both in person and by email.

Study MSDA sheets on all chemicals that you work with (hard copy located in lab coat locker) or check on-line with the product or kit manufacturer.

Microbes should be handled in biological safety cabinets. Only class I (class II on a specific case by case basis agreed with PI before ordering) biohazard is allowed in the laboratory. All class I and II organisms must be handled in biosafety hoods using aseptic technique.

Appropriate protection must be worn when transferring chemicals, sample preparation and when handling microbes and media, including lab coats, protective gloves and eye ware.

All media and culture bottles and plates must be clearly labeled with: media type, organism, date cultured and initials of investigator (label bottom of media plates not the lid).

All biologicals must be disposed of by autoclaving and bottles must be washed after autoclaving. Specialized media may need to be disposed of separately and must be agreed on with PI before use.

All used media plates must be placed into autoclave bags for autoclaving. Autoclaved bags must be placed into Biohazard waste boxes for incineration. Autoclave use for trained personnel only. Training will be given in a specialized course from the PI.

All cuts and abrasions must be treated using standard antiseptic and first aid measures. PI must be informed both personally and by email.

Date each chemical to record the day it was opened and by whom.

Only take what you need and do not return unused chemicals back to main reservoir. All chemicals must be stored in appropriate cabinets. Acids and Bases are never stored together.

Only dilute mineral acids may be discarded into marble chip baths located in the fume hoods. No chemicals may ever be poured into any sink or drain.

For biological spills use Bio-Spill kits (under the sinks in R236 and R244), and all biological waste has to be autoclaved.

Needles, pipette tips and sharp tools are disposed in suitable sharps protective boxes.

Chemicals that need to be disposed of shall be stored in appropriate cabinets until laboratory-wide storage removal is initiated (~ annually). When purchasing chemicals, try to buy as little as possible to minimize waste.

1.2 Lab Chemicals: Where they are, how they are obtained for use:

Familiarize yourself with where the various chemicals are stored based on type, reactivity, and flammability.

Familiarize yourself with the type of organisms being used in your experiments.

1.3 Sample Labeling:

All samples and media plates must be labeled in such a way as to be immediately identifiable (i.e. on the base not lid of plates). The use of notebook numbers or other schemes is not sufficient. Unlabeled vials constitute a serious offense and can lead to loss of laboratory privileges.

2. Instrument Standard Operational Protocol

For all instruments: Training on the specific safety features of each instrument is instrument dependent and should be agreed with PI before use.

2.1 Olympus BX61Epifluorescent microscope

*Access to this instrument is subject to scheduling. All users must be trained first before using this instrument. **Warning:** mercury lamp source, incorrect use may cause eye damage or complete loss of sight.*

2.2 Witec α – SNOM (Bertie) Scanning Near Field / Atomic Force Microscope, Raman – microscope. Training is required before use. Wear appropriate laser eye protection goggles for the wavelength being used i.e. 532 or 785nm laser. **Warning:** danger of eye damage if misused.

2.3 Witec Scanning Raman Microscope (Gertie). Training is required before use. Wear appropriate laser eye protection goggles for the wavelength being used i.e. 532 laser. **Warning:** danger of eye damage if misused.

Gel Imaging Station – Specialized training is required for this piece of equipment. **Warning:** intense UV light, danger of skin and eye damage if misused.

3. Compressed Gasses, storage, and disposal

Appropriate regulators are required for compressed gasses.

3.1 *Storage of new Tanks:* All compressed tanks must be stored in the storage area. Unused tanks must have end-caps securely fastened. Do not store reducing and oxidizing gases in close proximity. Do not use carbon monoxide unless directly linked to fume hood.

3.2 *Securing in-use Tanks:* All in-use tanks must be securely attached to fixed bodies, e.g. bench top.

3.3 *Return of empty or long-term non-use tanks:* All gas and N₂ taps should be closed and checked before leaving the laboratory.

4. General Laboratory Safety Features: Lab Safety Rules:

4.1 *Eye-ware-protection:* Required for: All chemical reactions, microbial culturing, distillations, chemical transfer and sample preparation.

4.2 *Protective clothing:* Required for: All microbiology and chemical reactions, distillations, chemical transfer autoclaving Recommended for: sole-use operation of analytical instruments Cuts must be treated immediately by designated aiders.

5.0 Off-hours Operation:

5.1 *Any Chemistry:* Please contact PI for permission and instructions on working in this laboratory after hours. Any permissions must be by e-mail.

5.2 *Instruments:* The use of instruments after hours is not restricted but must be communicated with lab supervisor. The repair of instruments after hours is subject to the same restrictions as after-hours chemical processing.

6.0 **General Lab Safety Features:** You will be made aware of the locations of; Fire extinguishers Emergency Shower, Eye wash station and Emergency Power Off Switch during laboratory safety training.

Keep Laboratory Doors Locked during off hours unless you are actively using the facility.



Laboratory User

I agree that I have thoroughly read and understood this laboratory safety document. I have access to this safety information at all times when I am working. I have been trained to be able to identify the hazards to which I may be exposed and to follow the work practices and procedures discussed in this document. I certify that I will conduct my research work safely and that I will be responsible for following stated safety policies.

User Name (Print)

User Signature

Date

Principal Investigator

I certify that the information presented in this safety document is accurate and complete. I agree to comply with all safety procedures and to fully train and supervise all researchers under my direction.

PI Signature

Date