Standard Operating Procedure for Class 4 Laser Systems in the Optical Science and Nonproliferation Laboratory

Including Duties, Responsibilities, and Expectations

Laboratory PI: Kyle C. Hartig
Laboratory Safety Manager: Emily Kwapis
Contact information is posted at laboratory entrance as well as in the group shared folder.

Laser Systems

The Optical Science and Nonproliferation Laboratory in Rhines 141 has two Class 4 laser systems in the laboratory space.

The Astrella femtosecond (fs) and Surelite II nanosecond (ns) laser systems are classified as Class 4 lasers based on 21 CFR, Subchapter J, part 1040, section 1040.10 (d). Manuals associated with the operation of these laser systems are available in the lab and/or in the online group drive. You are to default to these manuals for laser startup and shutdown procedures. A "cheat sheet" for operation of the laser systems is also present next to the controls for each laser that should be used as "pre-flight checklist" to verify adherence to operating procedures.

Both laser systems have an included shutter that confines any laser beam to the inside of the laser enclosure. Unless an active experiment or alignment is being performed all laser systems should be off. During "down times" in alignment or experiments the shutter to each system should be closed to reduce risk while maintaining the thermal stability of the system. When the shutters are closed, it is not possible for laser light to escape the laser enclosure. Both laser systems are equipped with an interlock system that will shut the lasers down when the door to the laboratory is opened or the laser enclosure is opened. The fs laser has additional interlocks that will shut the laser down if an abnormal situation is detected with the energy stability, spectral bandwidth, and cooling water. Lastly, both laser systems have a laser emission indicator that is illuminated when lasing is occurring within the laser system enclosure (this light is illuminated regardless of the state of the shutter on these laser systems) and is viewable through all the laser safety glasses available in the lab.

Laser Safety Officer:

The UF EH&S Laser Safety Officer is Florian Buhlman and may be contacted through lso@ehs.ufl.edu or 352-392-7359 with any questions, comments, or concerns.

I. General Safety Expectations

As an Optical Science and Nonproliferation (OSN) student or scholar member, you are expected to:

1. **Safety is the number one priority.** You should first and foremost be **trained** and **knowledgeable** on the **safe operation** of equipment as well as **safe experimentation** practices. Violation of laboratory safety guidelines will be documented and included on evaluations which may impact reappointment.

2. It is **your duty** and responsibility to inspect, question, challenge and, if need, be stop unsafe practices, and most importantly report them to PI Prof. Kyle C. Hartig (KCH) and the rest of the OSN members. If you see something, say something!
3. Promote a culture of safety. **Safety comes from knowledge.** Make sure you know and are prepared for the worst possible scenario when performing an experiment. Be aware of your surrounding in general!
4. Before trying something new on your own, first talk to your OSN peer and senior group members. For new experimental setups, please talk to Prof. Hartig first.
5. You **shall not open the laser system enclosures** without Prof. Hartig present.

Postings and Information in the Lab:

1. Laser Safety Related Manuals and Information Available in the Lab Information Binder:
    - OSN Standard Procedures Manual
    - Laser Safety Manual
    - Laser Accident Emergency Procedure (posted on door as well)
    - Laser Safety Handout
    - Statement of Laser Training and Experience (with signatures) for each laser user
    - Emergency Information Sheet (posted on door as well)
    - Laser Eyewear Requirements (posted at entrance to lab) and in laser manuals
2. Depending on the laser experiment being conducted additional safety information is available online in the group shared drive as well as posted in the lab or in the lab information binder.

Safety Training:

Safety is the number one priority. You should first and foremost be trained and knowledgeable on the safe operation of equipment as well as safe experimentation practices. It is your duty and responsibility to inspect, question, and challenge (and if needed stop) practices performed by the group. Most importantly, report unsafe practices to KCH and the rest of the OSN members. Before working in the lab, everyone must be safety trained, pass a safety exam, and sign the necessary forms stated below.

Additionally, online training found at my.ufl.edu > Main Menu > My Self Service > Training and Development > myTraining is required to be taken for safety and proper lab conduct.
The classes that are required are: EHS833 Laser Safety, EHS861 Chemical Hygiene Plan/LATCH; EHS862 Lab Safety Actions & Reactions; EHS863 New Researcher Overview of EHS; and EHS809 Hazardous Waste Management. These courses must be completed before work can be done in the lab.

You should complete the Chemical Hygiene Plan (CHP) Training Form, PPE Usage Form, and Hazardous Waste Training form prior to passing the safety quiz.

The Safety quiz will consist of 2 parts:

1. <u>Part one oral safety exam:</u>
   The oral safety examination will consist of 2 questions from each of the following areas: Lab Safety (Lab safety manual/safety pamphlet), Laser Safety (UF Laser Safety Manual and Pamphlet), Chemical Hygiene Plan/LATCH, and OSN Procedures, OSN Class 4 laser standard operating procedures (i.e., this document).
2. <u>Part two in-person practicum:</u>

The in-person quiz will consist of a walk through with the laboratory PI (KCH) where a detailed discussion will occur regarding how to safely handle and operate the various equipment in laboratory as well as a demonstration on how to safely setup a laser beamline and experiment (first with laser off and finally with the laser on).

After successfully passing the safety quiz and demonstrating proficiency with the laser systems, Prof. Hartig and the student will sign the EH&S Statement of Laser Training and Experience form that officially authorizes the student to undependably operate the laser systems. This form will be maintained in the lab information binder and a copy will be provided to EH&S.

At minimum you should receive the following documents in preparation for your lab safety exam:

1. UF Lab Safety Manual
2. Laser Safety Manual, Laser Safety Handout, and Laser Emergency
3. Hazardous Waste Management
4. Emergency Pamphlet, MSE Emergency Procedures Guide, & Emergency Information Sheet
5. Chemical Hygiene Plan (CHP)
6. Research Misconduct Flyer
7. Export Control
8. MSE Safety Day Activity
9. Statement of Laser Training and Experience
10. Standard Operating Procedure forms (folder on Dropbox)
11. Chemical Inventory & MSDS Sheets (is now available on GatorTRACS/LATCH)
12. Select Equipment/Facilities Manuals & MSDS Sheets (folder on Dropbox)

Lab Door Code:

OSN's lab is located in Rhines 141. Access to the lab in Rhines Hall is gained using a four-digit code given out to each individual by Prof. Hartig.

Calling from the Office:

If the number you are calling is located on campus and uses the (352) area code, the first two of the remaining seven numbers should be 29. Those two numbers and the area code can then be omitted, and the last five numbers can be dialed to reach the on-campus phone (ex. If the number is 352-291-1100, only 11100 needs to be entered). When calling any other number, dial 9 before entering the entire number (ex. If the number is 367-291-1100, enter 9-367-291-1100).

II. Laser Operation

Note: UF Guidelines found in the Laser Safety Manual prohibits observers being present in the laboratory when operating Class 4 lasers. The exception to this rule is students, staff, and faculty who are being trained to be laser users and are being directly supervised and directed by the laboratory PI.

Hazards:

Hazards associated with lasers generally fall into the following categories:

- Exposure to laser radiation that may damage the eyes or skin
- Electrical hazards generated in the laser power supply or associated circuits
- Chemical hazards resulting from contact of the laser beam with volatile or flammable substances, or released as a result of laser material processing

The above list is not intended to be exhaustive. Anyone operating a laser must consider the interaction of the laser system with its specific working environment to identify any potential hazards.

Optical Safety:

Laser light, because of its special qualities, poses safety hazards not associated with light from conventional sources. The safe use of lasers requires all operators, and everyone near the laser system, to be aware of the dangers involved. Users must be familiar with the instrument and the properties of coherent, intense beams of light.

The safety precautions listed below are to be read and observed by anyone working with or near the laser. At all times, ensure that all personnel who operate, maintain, or service the laser are protected from accidental or unnecessary exposure to laser radiation exceeding the accessible emission limits listed in "Performance Standards for Laser Products," *United States Code of Federal Regulations*, 21CFR1040 10(d).

The greatest concern when using a laser is eye safety. In addition to the main beam, there are often secondary beams present at various angles near the laser system. These beams are formed by specular reflections of the main beam at polished surfaces such as lenses or beam splitters. While weaker than the main beam, such beams still carry sufficient intensity to cause eye damage.

Laser beams are powerful enough to burn skin, clothing, or paint even at some distance. They can ignite volatile substances such as alcohol, gasoline, ether, and other solvents, and can damage light-sensitive elements in tv/computer screens, video cameras, photomultipliers, and photodiodes.

Laser users are advised to follow the precautions below.

1. Observe all safety precautions in the preinstallation and/or Operator's Manuals for all laser systems in the laboratory. These documents are available in the lab alongside the lab information binder and/or online in the group shared drive.
2. All personnel should wear laser safety glasses rated to protect against the specific wavelengths and pulse duration being generated (specific OD requirements for laser eyewear are located at the entrance of the lab for each laser wavelength and are further enumerated in the manual for each laser system). Verify the OD rating for the wavelength of light to be used on the front of the laser eyewear (do not trust outright labels on the eyewear case as someone may have placed a pair back in the wrong case). All safety glasses in the lab are brand new (Spring 2022) and CE rated.

3. Avoid wearing watches, badges, jewelry, or other objects that may reflect or scatter the beam.
4. Stay aware of the laser beam path, particularly when external optics are used to steer the beam.
5. Provide enclosures for beam paths whenever possible.
6. Use appropriate energy-absorbing targets for beam blocking.
7. Block the beam before applying tools such as Allen wrenches or ball drivers to external optics.
8. When not in use, lasers should be shut down completely and made off-limits to unauthorized personnel.
9. Never look directly into the laser light source or at scattered laser light from any reflective surface even while wearing protective eyewear. Never sight down the beam.
10. Set up the laser so that the beam height is either well below or well above eye level. In the OSN laboratory, no "upward periscopes" (i.e., to raise the beam height) should be constructed without first obtaining approval from Dr. Hartig and receiving further training and oversight.
11. Avoid direct exposure to the laser light. Laser beams can easily cause flesh burns or burn clothing.
12. Make sure no screens like those on laptops or oscilloscopes are in the beamline prior to opening of laser system shutters or unblocking the beam as the beam will damage these displays as well as reflect off of them in an uncontrolled manner.
13. Advise all those working with or near the laser of these precautions and check for proper PPE and authorization (must be an approved LU) to be in the lab while class 4 lasers are operating.
14. Turn on signage that indicates to those attempting to enter the lab that a laser beam may be present (i.e., "laser beam present" or "laser energized" light).
15. Verify presence of safety interlock on door leading into the laboratory. This also requires the door to be closed which will automatically lock and prevent unauthorized entry.
16. Always angle slightly (~5º) beam blocks and power meters to avoid reflection of laser light back into the laser system. Backscattered light entering the laser system may damage the optics inside the laser system.
17. When measuring the laser power do not slide the power meter into the beam without blocking the beam first with an appropriate beam block (true for any optical component manipulation in the beamline) and verify that the beam is not focused in any way as this will damage the sensitive power meter sensor.
18. Always check the wavelength and energy rating of all optics and meters in the beamline against the wavelength and energy of laser light to be used, as permanent damage could occur, and significant cost incurred to replace.
19. If the laser is off and you are working in the lab, it is best practice to change the laser indicator light to its "safe" state to indicate to others in the group or building facilities that they may enter the lab without disturbing your experiment and/or without needing laser glasses. Do not leave the sign on. Shut the sign off when no one is present in the lab.
20. The optical table arrangement in the OSN lab is unique when compared to other laser research groups, as the lab has several tables that are separated from each other by about 3-4 ft. Presently, one table is used to hold the laser sources, and another serves as an experimental station. A third table exists as a "hobby" or general workstation table. A set of safety chains (bright yellow with magnet mounts on each end) are located on either end of the tables and can be placed in such a way as to block personnel access between the laser source and experimental tables when a laser beam is passed from one to the other. Prior to removing any beam blocks at the source table, it is best practice and expected that you will visually verify and double check the beam line (with associated optics) that is to be used to route the beam from the source table onto the experimental table and onward into the experimental chamber.

Once the beam line has been visually verified, the yellow chains should be placed as to block personnel from walking into the area where the beam will be passing between the two tables. Once all these best practices and expectations have been met, you may proceed to leapfrog the beam blocks further down the beam line and into the experimental chamber verifying the beams path along the way.

III. Standard Procedures and Best Practices

Optics Cleaning:

Optics contained and used in the lab are extremely delicate and sensitive to touch and many environmental factors. Cleaning and handling of optical components is a routine task in any laser laboratory; however, particular care and attention must be taken to avoid any damage or premature degradation to expensive optical components. Please refer to the linked resource available through Edmund Optics (here) for a detailed description as well as YouTube video on how to clean various optical components. Additional training and in-person, hands on experience will be provided by Prof. Hartig prior to being allowed to clean optical components on your own.

Common reagents used in the cleaning of optical components include the chemicals Isopropyl Alcohol, Methanol, and Acetone. Each of these chemicals are volatile and have specific hazards; thus, care must be taken during their use. These solutions are available in the lab in small, well-marked squirt bottles for easy application to optics grade wipes during cleaning, and are filled from bulk containers (wearing gloves, using a funnel, and in the fume hood) stored in the hazardous chemical locker in the lab. Cleaning of optical components should occur on a fresh Kimwipe placed on a clean and flat table or bench (not in the fume hood – we want to avoid dust getting on the optics). When applying these solutions to wipes you are to wear appropriate gloves and squirt a small amount of the solution (enough to wet it) onto the wipe, which is being held along one edge by tweezers. You will use tweezers and your gloved hands to handle and clean the optical components following the guidelines and examples described in the above paragraph and from your training with Prof. Hartig.

6 Tips for Handling Most Optics to Keep Them in Good Condition (from Edmund Optics):

1. Always wear gloves or finger cots. The oil on your fingertips can sometimes damage the coating on optics, and if a fingerprint is left on an optical surface for a long time, it can become a permanent stain.
2. Always handle optics by the edges. Never touch the optical surface with your fingertips, even while wearing gloves.
3. Never handle optics with metal tools. Reduce the chance of damage by using wooden, bamboo, or plastic tools to handle optics. Vacuum pens are handy for small optics.
4. Always place an optic on a clean, soft surface, especially if the optical surface is convex. Resting on a hard or dirty tabletop can cause scratches on the optical surface.
5. To store optics, wrap them individually in clean, lint-free lens tissue and place in a low humidity environment. Never store unwrapped optics together in a box or bag, as contact between the optics will cause damage. Never store optics with heavier items on top of them.
6. Never blow on the optic. It is also recommended to not chew gum or talk while handling optics to prevent saliva contamination. Saliva particles will often stain the surface. A specialty optical "air bulb" is available in the lab to assist with "blowing" dust off optics.

Laser Safety:

Radiation Control and Radiological Services is responsible for providing up-to-date information and training to the research community concerning the safe conduct of laser use in accordance with all pertinent local, state, and federal regulations, guidelines, and laws. To that end, we provide this manual as a resource to be used in conjunction with other safety manuals and resource materials available from Environmental Health and Safety.

The UF Laser Safety Manual defines the Laser Safety Program and required training for the University of Florida. This program has been developed to provide guidance to faculty, staff, students, and visitors for the safe use of lasers and laser systems. This manual also provides essential reference information on non-ionizing optical radiation.

Prof. Hartig will ensure that all laser users (LUs) under his control, as well as incidental personnel, are properly trained with respect to the safe operation of lasers and are made aware of the associated hazards before they are authorized to operate any Class 4 laser or laser system http://webfiles.ehs.ufl.edu/laserstatetrain.pdf. Prof. Hartig shall establish and maintain a list of current LUs that are approved to operate specific Class 4 lasers under his supervision and provide a copy of the list to the UF Laser Safety Officer (LSO)- a copy of which will be maintained in the laboratory safety and procedures binder in the OSN lab.

Laser users who operate a class 4 laser or laser system must:

- Read the UF Laser Safety Manual
- Read all relevant SOPs including this one
- Read all manufacturer supplied safety instructions and manuals for relevant laser systems
- View the UF Fundamentals of Laser Safety presentation online
- Take the UC Laser Safety Course (email Dr. Hartig results/certificate following the test): https://uctraining.wufoo.com/forms/r1v93qn90a2vbx0/
- Take the online Laser Safety Exam: http://www.ehs.ufl.edu/programs/rad/laser/laser-training/
- Receive PI training on the specific laser equipment to be used

Safety glasses: Laser safety glasses rated for the wavelength of all lasers beings used in the lab MUST BE WORN at all times that the laser is in operation (when laser beam is present outside the laser system enclosure). The required OD rating (specific OD requirements for laser eyewear are located at the entrance of the lab for each laser wavelength and are further enumerated in the manual for each laser system) is posted at the entrance of the lab. You may check the required OD rating for safety glasses based on laser wavelength, pulse duration, energy, and rep rate through the following link: https://www.lia.org/evaluator/od.php. A laser viewer and several fluorescent cards are available in the lab to assist with visualizing the laser beam while wearing laser safety glasses. Be aware that some these cards have a reflective coating and care should be taken to angle the cards to reduce reflection in an unwanted direction.

Safety glasses wavelength and laser specific OD requirements:

- 266 nm – OD 6+
- 532 nm – OD 7+
- 1064 nm – OD 6+
- 750-800 nm – OD 6+ (note: fs laser has a broadband range).

Prior to operation of the laser systems, you must verify that the door to access the lab is locked, blackout curtains on the windows are drawn, and the red "Danger Laser Radiation" light on the outside of the lab is on along with all other PPE requirements (e.g., safety glasses) and controls enumerated in this document and the UF laser safety manual are in place. Be aware, that you may have other safety related items/controls that must be in place depending on the specific experiment you are performing with the laser system (e.g., compressed gases, chemicals, and/or ventilation/aerosol hazards, etc.).

Best practices for alignment: Alignment of laser beams is commonly considered **one of the most hazardous activities** during operation of laser systems in the laser and optics community. Extreme care must be taken along with adherence to procedures and best practices to safely align laser beams in the lab.

Best practices:

- NEVER bend over and squat down in the lab when lasers are operating in such a way that your eyes face and end up at the same level of the laser beams on the optical tables. If you have to pick something up off the floor or bend over in the lab when lasers are operating, you have several options to safely do so: (i) shutter or block the laser beam first or (ii) face away from the laser sources and squat down as vertical as possible to reduce laser beams "sneaking in" around edges of goggles.
- Always check that mirrors and other optical components (e.g., windows) rated for the laser wavelength being used are present down the beamline prior to operating any laser system to avoid unfortunate and costly damage to these components.
- Always have a physical beam block present at the beam exit from the laser unit prior to turning on the laser and/or opening of the internal shutter of the laser system.
- Always use the minimum amount of laser energy (emitted from the laser system) possible that allows for visualizing of the laser beam using a laser viewer and/or fluorescent cards.
- Always start alignment with a beam block at the closest point to emission of the laser light (angled to avoid backscatter into the laser system) from the laser unit as possible before beginning alignment further down the beamline.
- Use two beam blocks to "leap-frog" blocking of the beam as you adjust mirrors or other optical components progressing down the beamline.
- NEVER remove or add optical components to the laser beam line without blocking the laser beam prior to the point at which the optical component is to be removed or added. Prior to removing the beam block following addition or removal of an optical component place a beam block (as close to the added or removed optical component as possible) at the point where the laser beam is expected to travel after interacting with the new optical component (if you think about it this makes sense as the new component most likely needs to be aligned to target the laser beam onto the next optical component down the beam line).
- Use the laser viewer to check for any stray beams following any alignment or addition/removal of an optical component prior to treatment of the laser beam line as "aligned" or ready for an experiment.

Part of the safety exam administered by Prof. Hartig will consist of a hands-on "practical" demonstration of laser beam alignment and other laser system operation best practices. Following adequate passing of the OSN lab safety exam and demonstration of experience, Prof. Hartig and you will sign a EHS Statement of Laser Training and Experience that will otherize you operate laser systems on your own.

<u>Changes to experimental setups:</u> Prof. Hartig will have to examine, discuss with you, and approve all new laser beam setups and experiments that you want to perform in the lab prior to any manipulation of optical components or laboratory equipment.

Any violation of laser safety regulations is considered a serious violation of laboratory, college, and university safety standards that will be reported and may impact your reappointment in the group.

Laser Ablation:

A majority of the research in the OSN lab consists of laser ablation work. Laser ablation is what occurs when a high-power pulsed laser is focused on a sample surface and a laser produced plasma (luminous micro-plasma) is formed. These laser ablation plasmas emit light across a broad spectral range; however, the emitted light does not represent an eye damage laser. Laser light that was not coupled into the sample is diffusely scattered off the sample surface in many directions. Proper wearing of laser goggles and ablation occurring in the vacuum chamber adequately reduces the risk of this diffusely scattered laser light from the sample surface. Additionally, depending on the laser power and repetition rate, hearing protection may be suggested to avoid exposure to sustained high-frequency sounds being emitted from the laser ablation events. A tube can be connected to the exhaust of the vacuum pump to vent any hazardous materials into the fume hood. Optionally, a HEPA filter exists in-line with the vacuum chamber to filter out any microparticles that are formed/ablated off of potentially hazardous (i.e., radioactive) samples. These microparticles are flushed out of the vacuum chamber by backfilling the chamber to ambient pressure and pumping the chamber down (through the HEPA filter in-line with vacuum pump) at least two times prior to removal of the chamber lid.

General Guidelines:

- Use a beam block as well as shutter (separate "Uniblitz" shutter on experimental table) to control laser beam propagation into the vacuum chamber.
- Triple check that the right optics (e.g., mirrors, lenses, windows, filters, etc.) are in place for the wavelength of laser light being used. Incorrect use of optics will result in their immediate destruction and significant cost to replace.
- Use appropriate laser energies! Do not "crank it to 11" just because you can or because you are having difficulty seeing the emission/signal in the spectrometer- something else is most likely going wrong. Stop and ask for help.
- For any shadowgraphy or emission imaging measurements, you must work with Prof. Hartig first to gain necessary experience prior to performing any independent measurements as it is extremely easy to cause damage to camera systems in this setup.
- Prof. Hartig will sign-off on your ability to perform laser ablation measurements following demonstration of proficiency with the laser ablation experimental setup and equipment in the lab similar to the laser safety sign-off process.

Emergency Procedures:

Emergency procedures for general laboratory emergencies and laser accidents are posted on the door on the inside of the laboratory as well as located in the group shared drive.

In the event of a laser accident, immediately perform the following:

1. Shut down the laser system.
2. Provide for the safety of personnel (e.g., first aid and evacuations) as needed.
   NOTE: If a laser eye injury is suspected, have the injured person keep their head upright and still to restrict any bleeding in the eye. A physician must evaluate laser eye injuries as soon as possible.
3. Obtain medical assistance for anyone who may be injured.
   UF Student Health Care Center 352-392-1161
   Eye Center Shands at UF 352-265-0860
   Shands at UF Emergency Department 352-265-0050
   Ambulance (Urgent medical care) 911
4. If there is a fire, leave the area, pull the fire alarm, and contact the fire department by calling 911. Do not fight the fire unless it is very small, and you have been trained in firefighting techniques.
5. Inform the Laser Safety Officer or the Radiation Control Officer as soon as Possible.
   Radiation/Laser Safety Officer 352-392-7359
   After normal working hours, call 352-392-1111 to contact the University Police Department. UFPD will utilize the EH&S emergency call list.
6. If an injury is suspected, report it to worker's compensation as soon as possible
   Workers' Compensation 1-800-455-2079
7. Inform Prof. Hartig as soon as possible. If there is an injury, the PI must submit a report of injury to Risk Management and the LSO as soon as possible.
8. Following a laser accident, do not resume use of the laser system until the Laser Safety Officer and the Laser Safety Committee have reviewed the incident.

Summary:

UF Laser Safety Requirements Checklist:

The OSN Group adheres to the below requirements for operating the Class 4 laser systems present in the lab:

- Register all Class 4 lasers with UF EH&S
- Receive a laser safety inspection every six months
- Be posted with appropriate signs
- Have, and require the use of, appropriate protective eyewear
- Train all laser users and restrict laser use to those users
- Have a standard operating procedure available for the lasers in use
- Have an emergency off device for each laser
- Have an indicator of laser use at the entry to the lab (i.e., a "laser in use" light) that is switched on prior to turning the laser systems on
- Have an interlock or security latch in place at the entrance to the lab
- Control entry to the lab
- Control possible escape of laser radiation through windows and other portals

All laser users in the OSN group should be able to describe, identify, and demonstrate the groups adherence to the above requirements as well as verify such adherence prior to operating of the laser systems.

Updates to the Class 4 Laser SOP:

When updating the procedures manual, all new changes should be highlighted, and the group should be notified via email of the changes made. The document will be checked once a semester by the group to note all new (highlighted) sections and remove highlighting for an updated document. You are to sign the new version of the standard procedures manual contained in the laboratory information, training, and safety binder in the laboratory during your next visit to the lab.