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Six Steps to Laser Safety

The following six steps will guide you through laser safety protection as required by both the University of Maryland and the ANSI Z136.1 standard. Please read through this guide and utilize the content to help facilitate a safe atmosphere to work in the laboratory. The information contained in this document follows from the recommendations in ANSI, OSHA, and numerous texts by experts in the field of laser safety.

Step 1: Familiarize yourself with the UMD Policy on Occupational Exposure to Laser Light. The policy, found on ESSR's Laser Safety portal, governs the safe use of lasers at the University of Maryland. The policy includes all laser light in the range of 180 – 10,600 nm. Responsibilities for Principal Investigators, laboratory supervisors, and researchers are clearly stated under the policy.

Step 2: Determine the class of your lasers. Lasers and laser systems are classified according to the ANSI standard, least hazardous to most hazardous, Class 1 to Class 4 respectively. The classification scheme found on the portal and in Appendix III of the LSP applies to all lasers and laser products. Classification shall be based on the maximum output power or radiant energy available for the intended use. PIs may rely on the manufacturer's information for most commercial laser products and/or lasers as required by the Federal Laser Product Performance Standard (FLPPS).

Step 3: Determine the required Engineering Controls, Administrative Controls and Personal Protective Equipment for your laser laboratory. Preventing unwanted access to hazardous laser light can be accomplished through the use of Engineering Controls first, and should be supplemented by administrative procedures (Standard Operating Procedures) and Personal Protective Equipment (Laser Safety Eyewear). Guidance on Engineering Controls, Administrative Controls, and PPE can be found on the Laser Safety portal.

Step 4: Sign up for Laser safety training. Laser safety training is required for all users of Class 3B and Class 4 lasers. For Class 3R lasers, contact the LSO for information regarding training. Sign up for laser safety training through SciShield on the ESSR website.

Step 5: Inventory your lasers through ESSR. Complete the Laser Registry Form found on the portal for all classes of lasers. Maintain your inventory by periodically updating your registry with any new purchases, changes, or additions to lasers in the lab. Email completed forms to lasersafety@umd.edu.

Step 6: Complete Self-Inspections. ESSR will conduct periodic inspections of your laser laboratory following the requirements of the ANSI standard and best practices in regards to laser safety. The LSO will coordinate inspections with the Principal Investigator following completion of the self-inspection. ESSR recommends the PI conduct a self-inspection prior to the scheduled inspection with the LSO. The self-inspection form may be found on your SciShield Lab profile, under Self-Inspections.