**Laser System SOP Template**

This document contains the recommended sections and guidelines on how to create a laser SOP. Contact Brayden George with any questions on setting up your SOP.

Brayden George

Laser Safety Officer

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**Contact Information**

*List contact information for lab PI, laser safety officer, USU EHS office, USU public safety, 911. Further list the room number and building of laser locations.*

**Scope**

*Details of how this document will work. i.e., how to safely use the laser system.*

**Potential Hazards**

*Take into consideration the laser classes you have in your lab. What hazards are associated with class 3b and class 4 lasers? What wavelengths of light are you emitting? How does the wavelengths you are working at affect eyes and skin? Where in the room does the hazard exist? Include a section on key safety techniques when wearing lasers. Here is an example:*

Keys for safely working with lasers:

1. Avoid placing your eyes at beam height. When aligning the laser do not put your eyes at the same level of the laser. Use caution when bending over when the laser is firing so that you do not receive a direct laser shot to your eyes

2. Remove reflective items from your hands/arms when working with lasers. This includes watches, rings, and other jewelry

3. Where and when laser safety glasses should be appropriately worn. This is especially important when any covers are off.

4. When working with UV wavelengths, always wear safety glasses or goggles to protect against scattered UV light

5. Align the laser with the lowest power possible.

6. Align the laser in a bright, well-lit room. You do not want your pupils to be dilated, which will be more sensitive to the laser light

7. Avoid putting your hands or other body parts in the laser beam path

**Personal Protective Equipment**

*What PEE is needed. Laser Safety Eyewear must be prescribed by the Laser Safety Officer around the laser. Laser safety eyewear must have the correct optical density and wavelength protection for the laser being used. Will skin protection be required? LSO will help with hazard calculations.*

**Engineering Controls**

*Can part of the system be covered with protective barriers? Are interlocks in place? Can the beam of the laser be enclosed? Is the laser bolted down to the table? Make sure the controls are adequate for the wavelength and frequency you are working in.*

**Process Information / Normal Operating Procedures**

*Be as detailed as possible for each laser unit you are working with. This should be a step-by-step process of how to work safely with your lasers and lab surroundings.*

**Turning On Laser**

**Turning Off Laser**

**Working With Software**

**Maintenance and Service Procedures**

*Many laser manufactures will perform maintenance on the equipment they sell at a recommended service interval. If you will be performing the service on your behalf, you will need to create proper Lock Out Tag Out procedures and properly de-energize equipment before working on electrical components.*

**Alignment Procedures**

*Laser alignment should be done on the lowest energy setting possible, if laser alignment is performed without PPE and procedures in place, the risk of being struck my specular or diffuse reflection of a laser is possible. If you are working with UV or Infrared wavelengths, ensure that you have the proper viewing equipment. Never move a body part trough the path of the beam.*

**Emergency Contact Information**

*Give information to lab personnel here who to contact in the event of an emergency. 911, Lab PI, USU Police, Laser Safety Officer, USU EHS. State here what lab personnel should do in the event of an emergency such as emergency shut off procedures.*

**First Aid Measures**

*How should an eye injury first be treated, make sure that the area is safe and lab personnel are trained on what to do in an emergency. How do you treat a skin burn? Make sure lab personnel are trained and know what to do in the event of an accident.*