Standard Operating Procedures (SOPs)

Standard Operating Procedures (SOPs) are a set of instructions written to help individuals carry out a routine, complex task. SOPs should be written for tasks or experiments involving hazardous materials, and for procedures that pose a potential risk to the health and safety of personnel.

Why write SOPs? Below are some of their practical benefits:

- Maintain the quality of a process or an experiment through consistent performance guided by the SOP.
- Effectively transfer process knowledge to new personnel when SOPs are used as reference material during training.
- Documentation of the experimental procedure for inclusion in publication.
- Instruct new lab personnel about the hazards of a process or material and teach ways to reduce the risks arising from these hazards.
- When adhered to, SOPs help ensure that necessary steps are not overlooked, and safe work practices (the use of engineering controls, tried-and-tested procedures, or PPE) are not forgotten.

How to write effective SOPs?

- **Gather relevant information**, such as equipment manuals, piping and instrumentation diagrams, and safety data sheets (SDS) of materials. **Consult with** subject-matter experts or safety professionals.
- **Identify the hazards** inherent in the task, and assess the risks arising from the hazards. PIs can help their researchers write SOPs by guiding them through the hazard identification and risk assessment process, while also providing guidance on addressing risk using the hierarchy of controls.
- **Write the document.** Often, a documented procedure already exists which can be built upon into a safety SOP by incorporating hazard awareness, safe work practices, emergency response actions, as well as recommendations for the proper storage and disposal of hazardous materials.
- **Review and critique** the SOP by having group members or subject-matter experts evaluate and provide feedback.

An SOP doesn’t have to be perfect the first time around, and it should not be a once-and-done deal—it is a *living* document that is reviewed on a regular basis and changed as needed.
The Division of Research Safety has an excellent guide on writing Standard Operating Procedures: https://drs.illinois.edu/Page/Programs/StandardOperatingProcedures

Putting it all together:

Standard operating procedures are an important addition to the Laboratory Safety Plan. The Plan should incorporate or reference the Lab Safety Guide, and also include relevant safety data sheets and records of lab-specific training.

Useful links:

Lab Safety Plan overview: https://drs.illinois.edu/Page/Programs/PlanOverview

Standard Operating Procedures (SOPs): https://drs.illinois.edu/Page/Programs/StandardOperatingProcedures

DRS has an excellent page on Risk Assessments: https://www.drs.illinois.edu/Page/SafetyLibrary/RiskAssessment

The UIUC Laboratory Safety Guide https://drs.illinois.edu/site-documents/LaboratorySafetyGuide.pdf

FAQs: https://drs.illinois.edu/Page/Programs/FrequentlyAskedQuestions