Makerspace safety is best achieved via a   
collaborative relationship between the   
responsible person and Environmental Health   
and Safety. Elements of safety-by-design, user   
training, and strategies for monitoring and access   
control are essential for makerspace safety.

* Makerspace supervisors and EHS should work collaboratively to   
  implement safety-by-design. Examples include: Selection of   
  fabrication equipment to meet guarding and safety requirements;   
  Effective general ventilation and local exhaust ventilation in areas of   
  subtractive and additive manufacturing; Work area design and layout;   
  Mechanical lifting device selection and equipment.
* Makerspace users and employees should have documented training. This   
  training should be tied to authorization to use equipment or makerspace   
  areas. Training matrices and tracking systems can be used. Color coding on   
  badges can be used. Advanced facilities should consider card-swipe-access to   
  machines or areas that is tied to training.
* Makerspaces used by the public and students should have accessible standard   
  operating procedures for equipment. These SOPs should not be generic but be   
  created from the user manual of the specific equipment. SOPs should call attention   
  to primary hazards, controls, safe sequence of use for common operations, and operations that require assistance from a qualified person.
* Makerspaces should have some level of access control and monitoring. Consider locking and securing high risk equipment when qualified employees are not present. Consider preventing access to certain areas when qualified employees are not directly monitoring users. Implement protocols that prohibit individuals from working alone.
* Makerspaces should capture and properly process hazardous waste operations such as: 3D printing resin and related cleaning solvents; Metalworking lubrication; Coating and paint residue. 



**Environmental Health & Safety**

[psuehs@psu.edu](mailto:psuehs@psu.edu) • 814-865-6391