Lab rules will be followed very strictly. Failure to adhere to the rules and policies may result in the loss of Composites Shop privileges. (Refer to Shop Manual, page 2).

Shopmasters:
Fiona Spencer, fspencer@aa.washington.edu
Eliot George, ezgeorge@aa.washington.edu

Training
1. Before you start working in the lab you must have completed, passed and emailed documents of completion to Shopmasters for the following:
   a. Hazard Communication (HazCom) training –online
      https://www.ehs.washington.edu/chemical/chemical-hazard-communication-hazcom
   b. Respirator Training with Fit test for respirators –class
      https://www.ehs.washington.edu/training/respiratory-protection-training
      If determined to be required by Shopmaster or EH&S for your process.
   c. Fume Hood Training –Online
      https://www.ehs.washington.edu/training/fume-hood-training-online
   d. Electrical Safety, Basics –Online
      https://www.ehs.washington.edu/training/electrical-safety-basic-online-safetysmart
   e. Fire Extinguisher Training –Online
      https://www.ehs.washington.edu/training/fire-extinguisher-training-online
   f. Managing Laboratory Chemicals --Online
      http://www.ehs.washington.edu/psotrain/corsdesc.shtm

2. All users must complete a composites safety training that will be scheduled once per quarter.
3. It is strongly recommended that you also become machine shop certified.

Access and Supervision
Limiting and controlling access is critical to preventing untrained or unauthorized persons from incurring injury. This is particularly true in an academic setting where a shop may be part of a group of rooms in a large building with hundreds of occupants.

1. The Composites Shop is only open during normal operating hours or scheduled hours.
2. Sign in/out of the Composites Shop every time you enter or leave.
3. Check in with the Shopmaster each time before using 3D printers, ovens, hot press.
4. Schedule an appointment online 24 hours in advance to ensure access.
5. Perform experiments under supervision of designated lab supervisor. Volunteers are not allowed to work without supervision from leads/supervisor of their respective research groups.

General Rules
1. No food or drink is allowed in the lab.
2. Closed toe shoes and full length pants are required.
3. Wear a lab coat or chemical apron when working with composites, resins and epoxy.
4. Wear safety glasses at all times while in the shop.
5. If you break any equipment please report it immediately. Do not use broken equipment (ie fume hoods).
6. Do not leave items long term in fume hood. This is a shared facility so others will need to use the hood. The hood is designated for using chemicals, not storing them.
7. Violation of shop rules will result in restriction of your room access privileges.

**Lab Housekeeping**
1. Be respectful to other users.
   a. Leave work area cleaner than you found it.
   b. Ask someone if you don’t know where something is stored.
2. Always cover your work surface with cardboard, paper, aluminum foil, etc. before using anything sticky. This includes inside the fume hood.
3. No cutting, sanding, drilling, etc. of cured carbon fiber in composites shop.
   a. Use carbon cutting tools and downdraft table in ME machine shop G32A.
   b. Consult with A&A machine shop for alternative solutions.
4. No dry sanding of any materials.
   a. Keep dust out of your parts.
5. If you spill it, wipe up the spilled material immediately and properly dispose of the waste.
6. Before you leave, sweep or vacuum your work area, including both the table and floor, empty any full trash cans.
7. Use materials from your research lab. Classroom materials must be approved for use by instructor or Shopmaster.
8. Avoid creating trip hazards by using overhead electrical drops and promptly putting away extension cords.
9. Space is limited. Only short term storage of mold/parts is permitted.
10. Room is not meant for storage. After work is completed clean your area and carry work back to your respective labs. This includes all consumables, chemicals, materials and parts.
11. If you need to leave a part overnight let the Shopmaster know in advance, post a name, email address, phone number and time the part will be moved. Absolutely no long term storage of any part.

**Chemicals Hygiene** (see Spill SOP: https://www.ehs.washington.edu/chemical/chemical-spills-laboratories)
1. Read the Safety Data Sheet (SDS) or MSDS for chemical products that you will be using. Follow the instructions related to handling and storing.
2. Identify locations of all chemicals in the lab, SDS/MSDS folder, emergency phone numbers, emergency eye wash fountain and drench shower, first aid kit, aprons, gloves, safety glasses, and emergency exits.
3. All small containers (having cured or uncured resin) must be placed under fume hood and MUST be labeled with a marker to indicate their content. These containers are called *secondary containers*.
4. When possible always use *secondary containers* to transport chemicals (see Moving Hazardous Chemical Policy SOP in the UW Lab Safety Manual). If larger containers of chemicals need to be used then place items in a bin on a cart. This way spills between labs to the shop can be
minimized. After completion immediately return chemicals to their storage location (i.e. research lab).

5. Wear gloves when handling chemicals, including uncured prepreg composites.
6. Wear safety goggles when handling or working near hazardous chemicals.
7. Use fume hood for chemicals only.
8. Any parts larger than fume hood must consult with Shopmaster before using hood.
9. Use mold releases that are labeled as low-odor or low-VOC. This is a shared facility and various user will have varying degrees of sensitivity that can result in headaches, dizziness, respiratory irritation, eye irritation, visual disorders, memory impairment, coordination loss, and damage to liver, kidney, nervous system, skin reaction. If you must use a mold release or resin that constitutes an odor nuisance for quality or research reasons, make prior arrangements with the Shopmaster for scheduling & ventilation. ‘We need to use it because this is what we brought/donated’ is not sufficient reason for using high-odor chemicals.
10. If you bring a new chemical into the lab, send a copy of the SDS to the Shopmaster. This must be approved by Shopmaster before using chemical in Composites shop.
11. Must use a chemical container in secondary plastic bottles labeled container with safety data sheet. If larger containers are required, for transporting chemicals, use a tub on a cart to that can be easily moved from point of usage and back to storage cabinets (i.e. located in research labs). This will reduce the likelihood of spillage.

Carbon Fiber and Resins

1. Respirator training must be completed where the proper respirator will be recommended to student and/or PI.
2. Must wear respirator when handling materials contain carbon fibers and polyurethane resin.
3. Must wear appropriate Personal Protective Equipment (PPE) while working in the lab, especially when handling liquid chemicals.
4. If respirator is required must schedule work so that other users of a shared space can be properly informed.
5. If you create a mess (resin spill, fabric cutting) it is your responsibility to clean your mess immediately. Failure to do so will result in revoking lab access and privileges.
6. If you are heating/curing any material/part overnight or for long hours, you MUST place a note on indicating the material type and when it will be removed.
7. Follow protocols for cured, uncured resin, rags, VARTM bagging material etc. Do not throw anything in the garbage container. Please take garbage back to you own lab and contact EHS for proper disposal procedures.
8. All carbon fiber contaminant waste such as wipes, rags, beakers, napkins, respirator cartridge etc. Must be put in Zip-lock bag and kept in separate containment areas. Students work for PI’s with their own labs must take item back to their labs.

Respirator Protection

1. If work requires respirators all others sharing space will also need to use respirators. Scheduling will avoid conflict and improperly exposing others hazards.
2. Training includes medical, fit test, storing of respirators, cleaning respirators.
Tools
1. Use tools only for their intended purpose. Screwdrivers are not chisels or pry bars. Wrenches and drill are not hammers.
2. Protect vacuum pumps from resin and use resin tamps for wet layups.
3. Put away tools and materials even if they were out when you found them.

Freezer
1. Wear gloves when handling materials or working in freezer.
2. Only use material labeled for your lab or class.
3. Freezer is small and priority goes to classroom material.

Incident and Accident Reporting
1. Report unsafe conditions to Shopmaster.
2. For near misses, accidents fill out OARS reports: http://www.ehs.washington.edu/ohsoars/
3. Report accidents, spills immediately to Shopmaster. For emergencies call 911.

General Instructions for Research Students
1. Must use lab during normal operating hours, posted hours or scheduled by laboratory Shopmaster.
2. Shopmasters should know about all your planned experiments, absences, and changes in schedule
3. Please select working hours so the times coincide with the schedules of experienced students, staff, and supervisors and occur during normal operating hours of the shared composites lab.
4. Two people MUST be in lab while working. Working alone is prohibited.
6. Take all required safety training and forward emails of completion to Shopmasters.
7. Keep lab clean and tidy.
8. Always cc Shopmaster when writing emails related to composites lab.

I have read and will adhere to the A&A Composites Shop RM107: Rules and Policies.

Name (Print): ____________________________________________

Signature: ______________________________________________

Date: _________________

Class/Research Group: ______________________________________

PI/Instructor: ______________________________________________