TO BE READ IN CONJUNCTION WITH THE SCHOOL SAFETY HANDBOOK

(http://www.abdn.ac.uk/engineering/documents/ENG-HSHB-2014.pdf)

NO EATING OR DRINKING IS ALLOWED IN THE LAB

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Document approved for issue by Dr Y TANINO

Signature: ___________________________ Date: _____________
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1. **TRAINING & RISK ASSESSMENT**
   - All persons commencing work in the lab must undergo a formal Laboratory Induction in addition to the Basic Induction they received on arrival at the School. In addition to records of induction, training records must also be kept of any further training provided.
   - You must read and understand the School Safety Handbook prior to working in the lab.
   - You should go through the relevant material at [http://www.abdn.ac.uk/safety/resources/](http://www.abdn.ac.uk/safety/resources/).
   - No work should commence in the lab until a risk assessment has been completed in conformance with School procedures as stated in the School Safety Handbook.
   - You must complete a risk assessment form for each experimental procedure.
   - Risk assessment is the process of:
     - identifying where there is a significant risk (i.e., danger) in an activity and
     - determining how that risk can be decreased to an acceptable level (i.e., working out how the activity can be done safely).
   - **Projects may require more than one assessment to be written over the course of research. These must be submitted to supervisor before any work is done.**

2. **PERSONAL AND PROTECTIVE EQUIPMENT**
   - Laboratory coats and glasses must be worn at all times in the laboratory.
   - Secure all long hair or loose clothing while in the lab.
   - You must wear closed-toe shoes in the lab.
   - Safety glasses should be worn whenever there is a likelihood of material of any kind entering the eyes (normal spectacles are not an effective or acceptable form of eye protection).
   - Gloves must be worn whenever there is a likelihood of the hand coming into contact with substances which could damage the skin or with toxic substances which could be absorbed through the skin (or through cuts and abrasions on the skin) OR whenever you come into contact with any equipment, glassware, chemicals, samples, or worktops.
   - Gloves and lab coats must be removed when leaving the lab, unless you are transporting samples/equipment to a different lab.

3. **CHEMICALS**
   Chemicals used in both maintenance and experimental work represent a significant hazard and steps to manage this must be addressed in the Risk Assessment. Anyone working with chemicals must ensure, before any work commences, that they:
   - understand the hazards associated with the chemicals
   - know what precautions should be taken

   The main hazards of chemicals are:
   - the toxic effects of chemicals if they enter the body
   - the corrosive effects of some chemicals if they come into contact with human tissue
   - the flammable nature of some chemicals
   - the reactive nature of some chemicals – often when incompatible chemicals come together

   Consider also what will be done if there is a spillage (or other uncontrolled release) of a chemical.

   Solvents, acids, and poisons are stored separately. A list of some of the more widely-used incompatible chemicals is kept in the **SAFETY FOLDER** in the Lab. *(This list is not all*
inclusive, the absence of a chemical from this list should not be taken to indicate that it is safe to mix it with any other chemical.)

- Organic solvents must NOT be disposed of down the drains.
- You must have a hardcopy of, and have read and understood, the MSDS of every chemical that is stored or used in the lab before you commence work.

4. ELECTRICITY
- The Estates Section is responsible for the provision and maintenance of a safe electrical supply.
- When undertaking maintenance work on electrically powered equipment, the power supply should either be isolated and padlocked off or, in the case of 13Amp plugs, plugs should be removed from their sockets and the plug and cable returned to the equipment.
- No electrical equipment should be opened without permission of a supervisor and without having the necessary experience.

5. COMPRESSED AIR
- Some machines and equipment require a compressed air supply for normal operation.
- The resident technician will make any connections to machines requiring compressed air.
- Never direct compressed air at anyone. It has been known for people to be killed by misuse of compressed air.

6. GAS CYLINDERS
- Some machines and equipment require gas cylinder connections for normal operation.
- The technicians will make any connections to machines requiring gas cylinders.
- Always open valves slowly. Do not use excessive force on valves and gauges. If a cylinder valve cannot be opened readily, it should be returned to the supplier.
- After use, always shut off the gas at the cylinder valve and release the pressure in the gauges before finally shutting all valves.
- Understand the hazardous properties of the compressed gases you are using (e.g., flammability and toxicity).

7. EQUIPMENT
- The lab contains specialised equipment, e.g.,
  - ISCO pumps
  - Anton Paar density meter
  - automatic tube cutter
  - balances, glassware, stirrers
  - Training will be given in any/all when necessary.

8. LONE WORKING
- Access to laboratory space is also subject to the various School rules and reference must be made to the School Safety Handbook.
- Normal working hours are 8am to 6pm Mondays to Fridays, and excludes public holidays.

Undergraduate students, taught postgraduate students, and visitors
- Undergraduate students, PGT students, and visitors must under no circumstances, irrespective of duration, be inside the lab if their immediate supervisor is not physically in Fraser Noble.
- Working outside normal hours is strictly forbidden.

**PhD students and PDRAs**

- You must never work outside designated hours without getting permission from both the Lab Manager and your immediate supervisor first.
- If you are working out of normal hours, a “buddy system” is advisable, where you contact another person at pre-selected times to ensure your safety.
- If you are working out of normal hours, consider leaving the door ajar for your safety.

9. **SLIPS AND TRIPS**

- The floor should be kept clear of objects and there should be no trailing cables. If it is absolutely necessary to have trailing cables, they should be covered with a suitable ramp or rubber cable protector.
- Personal belongings should be left on top of the desks.
- Any spills should be cleaned immediately and properly.

10. **ACCIDENT / NEAR MISS REPORTING**

    Any accident or “near miss” must be reported as soon as possible following the incident – see [http://www.abdn.ac.uk/safety/general/accidents/](http://www.abdn.ac.uk/safety/general/accidents/). The report must be completed by the immediate supervisor of the injured person or the person in charge of the area where the incident happened (and not by the injured person). A copy of the completed form must be sent to the University Safety Adviser within 48 hours.

    The following **MUST** be reported:
    - Any incident in which anyone is hurt (regardless of how minor the injury might appear at the time and regardless of whether they need medical treatment).
    - Any incident in which someone could have been hurt (but in which perhaps chance or “good luck” prevented injury). These incidents are sometimes referred to as near-misses.

11. **LIQUID NITROGEN**

    - The lab has a 25L liquid N\textsubscript{2} dewar. If a significant quantity is spilt, the immediate area will not contain adequate oxygen to support life. The door should be opened immediately and the lab evacuated. Notify Lab Manager or one of the technicians.

12. **GENERAL**

    - The fume cupboard is for experiments only, and **not** for storage.
    - Glassware is separated into 3 classifications
      - Communal
      - Research – oil or oil + aqueous phases
      - Research – aqueous phases
    Glassware must be used only for these applications and washed according to lab procedure specific to the application.
• When the alarm sounds for more than 15 seconds, you should leave the building immediately through the nearest exit. Do not wander off without letting the Lab Manager and/or your immediate supervisor know that you have safely evacuated the building. Alarms are tested every Wednesday morning for about 10 seconds.

• Emergency number is 3939 from internal phones. If using mobiles the number is 01224 273939.

• Ventilation is controlled by Estates. If you notice that the ventilation is not on, you should leave the lab and notify the Lab Manager.

• You must not bring friends into the lab. All visitors should wear lab coats and safety glasses.

• Do not bring in food or drinks into the lab. Also:
  o Do not eat or drink in the lab (including chewing gum).
  o Do not throw away food wrappers or drinks bottles in the lab trash cans.

• Do not use a mobile phone or in-ear music device in the lab.

• Broken glassware must be disposed of immediately in the broken glassware box by the door. Notify Lab Manager so broken items may be replaced, if appropriate.

• All containers containing chemicals must be labelled (initials, contents, date).

• Coreflood experiments involve gases and liquids at elevated pressure. Do not touch equipment or chemicals unless you have been authorized to do so by the Lab Manager or your immediate supervisor.

• Be knowledgeable about all activities taking place in the lab – not just those you are involved in – so that you can respond accordingly in case of an emergency. Similarly, you should be able to identify every user of the lab, know whom they work with, and know how they can be contacted.

• The lab is used for research. You are not permitted to take photos of anything in the lab without the permission of the Lab Manager.

• Do not make personal calls from the lab phone.