**Hazard Identification and Risk Assessment for Field Activities**

**Overview**

This **Hazard Identification and Risk Assessment** procedure applies to all IOF and IRES faculty, staff and students who are involved in off-campus field activities related to research or teaching. It is a slightly modified version of the EOAS Hazard Identification and Risk Assessment procedure (used with permission) and is in addition to the UBC Travel and Field Safety Policies and Procedures [(https://travelfieldsafety.ubc.ca/about/)](https://travelfieldsafety.ubc.ca/about/) with which all individuals engaged in field studies must familiarize themselves.

This Hazard Identification and Risk Assessment form needs to be completed and signed off by [1] the Supervisor and [2] the Chair (3) Faculty Representative of the AERL LST. It must be submitted a minimum of 2 weeks prior to any field work in order to allow for any additional mitigation that may be required.

**Description of Field Activity and Participants**

Please provide in the space below a brief description of the fieldwork/activity together with the number of anticipated participants:

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**1. Critical components**

1. A comprehensive appraisal of the hazards to be encountered on field activities and an assessment of the risks associated with these hazards must be undertaken during the planning for the trip.
2. Staff members in charge of field activities and supervisors of postgraduate students are responsible for ensuring that the risk assessment procedure has been completed and signed off before the commencement of the field activity.
3. Following identification of the hazards likely to be found during the field activity, risk control measures must be adopted to minimize the risk associated with each hazard.
4. Potential hazards and the control measures in place must be disclosed to all participants before departure.
5. This document is only valid for the dates specified and the following conditions apply:

i) Activity and participants must remain the same. *Any significant variation to the activity or number of participants will require the Field trip supervisor to re-assess the risk and submit a new version. An addendum to the previously submitted assessment specifying the changes should be provided when minor changes to the submission occur.*

ii) The dates specified must be for a period of less than 12 months. *For ongoing (eg. long term project that spans several years) the Field trip supervisor is required to submit a new version each year).*

**1.1. Hazard identification and risk assessment**

**To achieve a comprehensive appraisal of hazards during fieldwork it is advisable to incorporate the ideas of all participants and where appropriate stakeholders. A hazard considered as trivial to one participant may be considered significant to another. This diversity in hazard identification may result from variation in, personal experience, individual capabilities or bias associated with personal attitudes to OH&S.**

**Hazards may be site or task specific, they may be insidious or apparent and they have the capacity to affect individuals differently. The accepted method of ‘Risk Assessment’ is to score a hazard on the basis of ‘Consequence’ and ‘Likelihood’ (table 1). These individual scores are then used with the ‘Risk Matrix’ (table 2) to determine the level of risk; giving a score of high, medium or low.**

**Where the risk associated with a task/hazard is determined to be high or medium the task should not be undertaken unless the hazard can be reduced. In this circumstance a systematic approach known as the ‘Hierarchy of Control’ needs to be applied to the control of a hazard (table 3). The hierarchy is subdivided into 5 levels of control; the first level of control being ‘Elimination’. Elimination aims to remove a hazard or hazardous work practice from a worksite. An example may be to remove a trip hazard. However, it is not always practicable or possible to eliminate a hazard and therefore the next control, ‘Substitution’ can be applied. An example of substitution may be changing from using a toxic chemical to a non toxic alternative.**

**Skipping forward to the final level of control; Personal Protective**

**Equipment (PPE) is considered the lowest, least effective, control because**

**it assumes that the employee involve in a task will be exposed to some level of risk. Where long term exposure is likely PPE may not be sufficient in mitigating risks to employees.**

**Table 1, Defining categories of Consequence and Likelihood**

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| **Consequence** | **Description** | **Likelihood** | **Description** |
| **Major** | **Death or extensive Injury** | **A** | **Is expected to occur** |
| **Moderate** | **Medical treatment** | **B** | **Could probably occur** |
| **Minor** | **First aid treatment** | **C** | **Could occur but only rarely** |
| **Insignificant** | **No treatment** | **D** | **May occur but probably never will** |

**Table 2, Risk Matrix combining elements of Consequence and Likelihood**

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| --- | --- | --- | --- | --- | --- |
| **Likelihood** |  |  | **Consequence** | |  |
| **Major** | **Moderate** | **Minor** | **Insignificant** |
| **A** | **H** | **H** | **H** | **M** |
| **B** | **H** | **H** | **M** | **M** |
| **C** | **H** | **M** | **M** | **L** |
| **D** | **M** | **M** | L | **L** |

**Table 3, Hierarchy of control**

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|  | **Example** |
| **1. Elimination** | **Remove the hazard**   * **Asbestos: remove it from the building** |
| **2. Substitution** | **Use an alternative**   * **use scaffolding rather that ladders** * **quieter machinery for noisy models** |
| **3. Engineering Controls** | **Separation of hazard**   * **place a physical barrier around the hazard to exclude access** * **separate vehicle and foot traffic in warehouses** |
| **4. Administrative**  **Controls** | **Change the work practice**   * **require employees involved in hazard processes to have certain rest periods, e.g. truck drivers** |
| **5. Personal Protective**  **Equipment** | **Provide protective clothing and or equipment.** |

**2. Accident/Incident reporting, investigation and recording**

1. Before commencement of the field activity, the staff member in charge must be familiar with the UBC policy on Accident/Incident Reporting, Investigation and Recording Procedures
2. An Accident/Incident Report must be completed for all incidents, no matter how minor. *The supervisor of the group or the staff member in charge of the field activity should undertake an investigation of the incident on site and assist with the completion of the CAIRS incident report form. A thorough investigation of the immediate and underlying causes of an incident is essential to prevent a recurrence.* Refer to the UBC Incident Site Investigate Guide for details. The CAIRS report is on-line and should be completed as soon as on-line access is possible.

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| **HAZARD CHECKLIST** | **Possible source/agent** | **Initial risk level before control measures** | **RISK CONTROL measure** | **Final risk level** |
| **Low, Med, High or N/A** | **MUST BE FILLED IN IF THERE IS ANY RISK** |  |
| **Temperature** | Fire  **Hot environment**  **Cold environment**  Other\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |  |  |
| **Water or Immersion in** | Boating  Swimming  Diving  Collecting or travelling near  water bodies  Other\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |  |  |
| **Stress** | Thermal – heat  Thermal - cold  **Repetitive activity/motion**  Other\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |  |  |
| **Hygiene** | Food preparation  Food storage  Personal (eg , cleaning and  toilet facilities)  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Other\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |  |  |
| **Allergies and allergic reactions (specify)** | Chemical\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Animal\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Food\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Other\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |  |  |

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| **Cutting, stabbing, puncturing** | **Blades/knives**  Sharpened tools  Equipment  Environment (eg. thorny bushes)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Other (specify) |  |  |  |
| **Entanglement** | Rope/wires  Grass  Clothing  Other\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |  |  |
| **Slipping, tripping and falling** | Rope/wires  Uneven surface  **Wet environment/surface**  Muddy environment/surface  Working at heights/ladder use  Tree climbing  Other\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |  |  |
| **Site specific Animal hazards** | * **Bites** * **Stings**         Other (specify species if known and identified hazard) |  |  |  |
| **Electrical** | Power generation equipment  Plant and Equipment  High Voltage  Other\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |  |  |

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| **Chemicals (specify)** | **Handling and use**  Transport  Storage Name of  chemical(s)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |  |  |
| **Radiation** | Ionising source  Non-ionising source  Plant and Equipment (laser)  Electromagnetic  **Ultraviolet (lamps/solar)**  Other\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |  |  |
| **Pressurised vessels or equipment (includes compressed air and gas bottles)** | Handling and use  Transport  Storage Name of  gas(es)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |  |  |
| **Vehicles, plant and machinery** | Four wheel drive  Quad bike  Boat  Trailer  Bus  Heavy vehicle\_\_\_\_\_\_\_\_\_\_\_\_\_  Scientific equipment  Motorised equipment  Pressure equipment  Conveyors  Sampling equipment  Other\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |  |  |

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| **Vibration** | Plant and Equipment  Environment (eg earthquake)  Other\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |  |  |
| **Crushing** | Equipment  Plant  Environment (eg rock fall)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Other\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |  |  |
| **Noise** | Plant and Equipment  Vehicle\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Environment\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Other\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |  |  |
| **Inhalation** | Fumes  Smoke  Dust  Welding vapours  **Chemicals**  (specify)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |  |  |
| **Suffocation** | Tunnels  Avalanches  Land slippage  Confined space  Other\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |  |  |
| **Struck by or striking against** | Plant and Equipment  Vehicle  Lightning  Environment (eg rock fall, tree branch)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Other\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |  |  |
| **Other factors** | Lifting heavy loads |  |  |  |
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| **Completed by: (Name)** | **Date:** |
| **Completed by: (Signature)** | **Date:** |
| **Signed: (Supervisor)** | **Date:** |
| **Signed: (Head of IRES** | **Date:** |
| **Signed: (Faculty rep, AERL LST)** | **Date:** |

**NOTE: This form is approved only when all signatures have been obtained.**