

## **NAU Risk Assessment and Rating Tool:**

The NAU Risk Assessment Tool provides a framework that can be used to identify and manage the risks associated with our working and learning activities. It can be applied prior to proposing a project, fieldwork, experiments, and excursions to support safe and positive experiences for all participants.

While the process is subjective, the intent is to assist in discerning between lower-risk activities during which potential hazards are minimal, medium to higher risk activities which are manageable using hazard controls, and those which present an unacceptable risk. Follow the steps below for a self-guided risk assessment process. Consult with your supervisor and EH&S if you identify “high” risk ratings to obtain assistance in re-designing your work and implementing additional controls to reduce risk.

### **1. Consider the objectives of your work.**

- What steps will be required to accomplish your work?
- What are the risks associated with each step in your process?
- What are the risks associated with the location, or the environment?
- What is the safest approach?

### **2. Identify and assess the risks of your activities.**

Safety is activity and site-specific. Consider, for example, the process of taking a soil sample in the Sinclair Wash on campus during clear weather would likely be a low-risk activity. Taking a soil sample from the summit of Humphrey’s Peak during snowy or monsoonal weather, however, would change the risk rating considerably. Similarly, changing a lightbulb at floor level is a low-risk activity. Changing a lightbulb in a 25’ streetlight from an aerial lift will have a higher risk rating.

Consider the foreseeable conditions, activities required for your proposed work, and the potential hazards associated with that work. Also consider the skill sets and preparedness of your participants and how that will factor into your overall risk.

### 3. Rate the risk(s) associated with each step of your proposed work.

Use the Risk Rating Matrix below to assign risk ratings to each step/factor you identified in step 2.

**Risk Rating Matrix<sup>1,2</sup>**

| Likelihood of Occurrence               | Severity of Consequences |                |                            |   |
|--|--------------------------|----------------|----------------------------|---|
|  | No Injuries              | Minor Injuries | Moderate to Life Impacting | Life Threatening from Single Occurrence |
| (Almost) certain/occurs frequently     | Low                      | High*          | Unacceptable*              | Unacceptable*                           |
| Likely. Has occurred before/will again | Low                      | Medium         | High*                      | Unacceptable*                           |
| Possible, but not common               | Low                      | Medium         | High*                      | High*                                   |
| Slight/rarely occurs                   | Low                      | Low            | Medium                     | High*                                   |

<sup>1</sup>The Risk Rating Matrix is subjective. The primary goal is for researchers to pause, think about risk, and differentiate unacceptable and high-level risk steps from those with a lower-level risk. This will help drive additional consultation and control measures where needed.

<sup>2</sup>-Adapted from the Stanford Laboratory Risk Assessment Tool, Version 12/06/21

### 4. Act based on risk ratings.

Use the table below to determine the action to take based on the risk rating.

- Eliminate any activities with an unacceptable risk rating.
- Review activities with medium or high-risk ratings. What are the highest risk steps? What more can you do to control the risks? Could you modify your activities to reduce risk?
- Resume planning. Use the hierarchy of controls (Step 5) to design a safer process.


**Risk Rating Action Table**

| Hazard Risk Rating | Action Required  |
|--------------------|--|
| Unacceptable       | <b>STOP!</b> Project modifications needed to reduce risk. Consult with your supervisor or faculty advisor. EHS is available for consultation (NAUEHS@nau.edu). |
| High               | Additional controls recommended to reduce risk.  |
| Medium             | Ensure you are following best available controls to minimize risk. Consult with your faculty peers, advisor, supervisor and/or EHS, as needed.                 |
| Low                | Perform work within proposed scope.  |

## 5. Identify appropriate risk management actions and controls.

- Define the hazard controls to minimize the risk of each step using the hierarchy of controls starting with the most effective.
- List the hazard control measure you would use for each step or task (e.g., run experiment at a micro scale, work in a fume hood, work in pairs, avoid work in inclement weather).

Note: A hierarchy of controls should be applied starting with the most effective controls (i.e., elimination and substitution) at the top of the graphic and moving down. While personal protective equipment (PPE) should be used where indicated, it should be considered the last line of defense from potential hazards.

| Hazard and Risk Controls in order of Effectiveness  |                                      |   |
|---|--------------------------------------|---|
| <b>Most</b><br> | <b>Elimination</b>                   | Eliminate or remove the hazard or activity                                    |
|   | <b>Substitution</b>                  | Replace the hazard/activity with something lower risk                         |
|   | <b>Isolation</b>                     | Isolate people from the hazard  |
|   | <b>Engineering Controls</b>          | Engineer out the hazards through ventilation or some other means              |
|   | <b>Administrative Controls</b>       | Change the way people work through SOPs, training, or other established means |
|   | <b>Personal Protective Equipment</b> | Use Personal Protective Equipment (PPE)                                       |
| <b>Least</b>  |                                      |   |