1.0 Introduction
A fall from a standard working height can exert thousands of pounds of force on an individual. The impact from the fall can have serious and often fatal consequences. As part of Weill Cornell Medicine (WCM) Environmental Health and Safety (EHS) Program Manual, this Fall Protection Program has been established to promote a safe work environment for anyone working at heights at WCM.

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3.0 Objective
This program is intended to prevent exposure to fall hazards and ensure compliance with applicable regulatory requirements. It is designed to provide guidance to protect the WCM community from fall hazards and ensure that any work performed at heights is done so in a safe manner by workers who are appropriately trained and provided with safe work procedures, personal protective equipment, and other safety controls.

4.0 Applicability
This program applies to anyone who may be working at heights at WCM, including all students, employees, and volunteers working in laboratory, clinical, and administrative/service work environments. Working at heights involves any work that would present a potential fall of greater than four feet.

This program does not apply to construction work at WCM. All construction work must meet applicable OSHA and regulatory guidelines in accordance with the WCM EHS Construction Safety Program.

5.0 Responsibilities

5.1 ENVIRONMENTAL HEALTH AND SAFETY (EHS)
- Assists the WCM community in the implementation of this program.
- Provides or coordinate general training for groups on the content of this program, as requested.
- Provides or assist in training for competent persons.
- Retains all training records.
- Periodically reviews and updates this written program.
- Evaluates work being performed and determines compliance with this program.
- Evaluates the overall effectiveness of this program on a periodic basis.

5.2 ENGINEERING & MAINTENANCE (E&M)
- Assists employees in the implementation of safe work practices addressed in this program.
- Ensures employees comply with all provisions of the Fall Protection Program.
- Designates Competent Persons for Fall Protection and ensure they are trained appropriately.
- Ensures employees receive training appropriate to their assigned tasks.
- Ensures employees are provided with, inspect, and use, appropriate protective equipment.

5.3 DEPARTMENTS WITH EMPLOYEES WHO WORK FROM HEIGHTS
- Assist employees in the implementation of safe work practices addressed in this program.
- Ensure employees comply with ALL provisions of the Fall Protection Program.
- Designate Competent Persons for Fall Protection and ensure they are trained appropriately.
- Ensure employees receive training appropriate to their assigned tasks.
- Ensure employees are provided with, inspect, and use, appropriate protective equipment.
5.4 PROGRAMMATIC ROLES
This fall protection program also designates programmatic roles with specific responsibilities associated with fall protection. The responsibilities associated with these programmatic roles are as follows:

5.4.1 Worker
- Comply with the Fall Protection Program
- Complete all fall protection training as required
- Request further instruction if unclear or are unsure how to properly use fall protection devices.
- Conduct assigned tasks in a safe manner and wear appropriate personal protective equipment
- Report any unsafe work conditions and any job related injuries to their supervisor immediately.

5.4.2 Competent Person
- Have the experience and knowledge to recognize fall hazards.
- Correct all unsafe conditions.
- Train employees in the proper use of fall protection.
- Regularly audit work areas to ensure fall protection equipment is being used appropriately.
- Correct unsafe conditions.
- Shut down work until hazardous conditions are corrected.
- Take damaged fall protection equipment out of service.

5.4.3 Qualified Person
- Maintain professional certifications as necessary in accordance with regulatory requirements.
- Have background in applicable regulatory requirements.
- Design all fall protection systems in accordance with regulatory requirements.
- As required, test all fall protection systems (anchorages, etc.) in accordance with regulatory and accepted consensus standards.
- Produce appropriate regulatory documentation for all new fall protection installations.

6.0 Fall Hazard Identification

6.1 FALL HAZARD RECOGNITION
Any working height greater than 4 feet is considered a fall hazard and employees must be protected. (For construction, the height is 6 feet). Potential fall hazards include, but are not limited to:
- Roofs
- Floor Openings
- Shafts
- Catwalks
- Work Platforms
- Pits

6.2 HAZARD EVALUATION
This program has been designed to evaluate potential fall hazards through a logical hazard assessment process. When a work task or work area presents a potential fall hazard the supervisor or competent person must evaluate these potential hazards using this process and determine if a hazard can first be eliminated, if the hazard cannot be eliminated, they must then evaluate how the hazard can be prevented or controlled.

1. Elimination of Fall Hazards: Fall hazard elimination is the first choice when presented with a fall hazard. The elimination of a fall hazard requires an assessment of the workplace and the work being conducted.
2. **Prevention of Fall Hazards**: Fall hazard prevention is utilized when a fall hazard cannot be eliminated from a work place or the work task. Prevention involves making changes to the workplace or worker’s behavior to prevent falls. Fall hazard prevention involves the use of stairs, guardrails, work platforms or other means of passive fall protection or the use of A-Frame ladders, man lifts, and scissor lifts which provide a steady work platform and reduce potential fall distances and unguarded hazards.

3. **Control of Fall Hazards**: Control of fall hazards may only be used after it has been determined that a specific hazard cannot be eliminated or prevented. This is to be the last choice in fall hazard assessment. Fall hazard control is accomplished through the use of assorted fall protection equipment. This equipment, used to control the risk of a fall and limit fall distance and the forces associated with a fall, may include full body harnesses, lanyards, fall arrest systems, lifelines, and anchorage points. Controlling fall hazards requires significant planning and training to be implemented correctly.

A Competent Person must assess all fall hazards before employees are permitted to work. The Competent Person must review fall protection to ensure it is appropriate and set up and installed properly. The flow chart on the following page can be used by the Competent Person to assess fall hazards.

**Figure 1**: Fall Hazard Flow Chart
CONTINUED: Fall Protection Program

7.0 Walking and Working Surface

7.1 GUARDRAILS

7.1.1 Requirements for Guardrail Systems

All guardrail systems must meet the following criteria:

- The top rail or top of guardrail system must be 42 inches (plus or minus 3 inches) above the walking/working surface.
- Midrails or intermediate rails must be installed between the top edge of the top rail and the walking/working surface.
- A toe board must be installed at the walking/working surface (floor, platform, ramp, etc.) and must extend at least 4 inches in height above the surface.
- All parts of the guardrail system must be capable of withstanding a force of at least 200 pounds applied within two inches of the top edge in any outward or downward direction.

7.1.2 Inspections and Addressing Deficiencies

- Guardrail systems must be visually inspected any time they are accessed.
- Any deficiencies found in guardrail systems must be reported to a Competent Person and/or E&M Supervisor immediately. Signs and/or danger tape must be affixed to these systems immediately and employees must be prohibited from accessing or working from these areas until necessary repairs are made.

8.0 Skylights

8.1 REQUIREMENTS FOR SKYLIGHT GUARDING

Skylights on all roofs that will be accessed must be guarded or fall protection must be implemented.

- A fixed guardrail system meeting the requirements of section 7.0 must be installed or;
- A screen must be installed over the skylight. The screen must be capable of withstanding a load of at least 200 pounds applied perpendicularly at any one area on the screen or;
- The skylight must be constructed of plastic and able to support the 200 pound load as described above.

9.0 Personal Fall Arrest Systems

A Personal Fall Arrest System consists of a full body harness, lanyard, connectors, and anchorage. This system may also include deceleration devices, a self-retracting lifeline, or a combination of devices. A Personal Fall Arrest System must meet the following general requirements:

- The system must meet or exceed all requirements of applicable American National Standards Institute (ANSI) standards.
- It must be set up so that an employee cannot free fall more than 6-feet or make contact with any lower level.
- It must limit the maximum arresting force on an employee to 1,800 pounds.

9.1 LANYARDS

The following minimum requirements must be met when using a lanyard as part of a fall arrest system:

- The lanyard must meet or exceed all requirements of applicable ANSI standards.
- It must be equipped with an approved shock absorber.
- It must be attached to an approved engineered anchorage point.
- The lanyard must be free from knots.
- It may not be wrapped around an anchorage and connected to itself.
- It must be inspected before every use and in accordance with manufacturer recommendations. Any damaged or defective equipment must be removed from service immediately and an Out of Service tag must be placed on the equipment in accordance with the EHS Accident Prevention Tag Update.

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9.2 LIFELINES

The following minimum requirements must be met for all lifelines (self-retracting, vertical, horizontal, etc.).

- Self-retracting lifelines must attach to the back “D” ring of a harness.
- The lifeline must attach to an appropriate anchorage.
- Self-retracting lifelines must not be lengthened by attaching lanyards or other components.
- The lifeline must be situated in a manner which will prevent the individual from becoming entangled in it.
- It must not be exposed to corrosive materials, acids, caustics, or excessive heat.
- Lifelines must be inspected before every use and in accordance with manufacturer recommendations. Any damaged or defective equipment must be removed from service immediately and an Out of Service tag must be placed on the equipment in accordance with the EHS Accident Prevention Tag Update.

9.3 ANCHORAGE POINTS

The following minimum requirements must be met for all anchorage points.

- The anchorage point must be independent and serve no other function unless rated to do so.
- It must be capable of supporting at least 5,000 pounds per employee.
- It must be engineered and designed specifically for fall arrest.
- Material rigging equipment may not be used as anchorage points.
- Anchorage points must be designed and installed by a Qualified Person.
- Documentation displaying the rating and installation details for all anchorage points must be maintained by the competent person.
- Anchorage points must be inspected before every use and in accordance with manufacturer recommendations. Any damaged or defective equipment must be removed from service immediately and an Out of Service tag must be placed on the equipment in accordance with the EHS Accident Prevention Tag Update.

9.4 FALL PROTECTION HARNESS

The following minimum requirements must be met for all fall protection harnesses.

Full body harnesses must be used for fall protection. The use of body belts is prohibited. Only National Institute for Occupational Safety and Health (NIOSH)-approved harnesses are permitted to be used.

Harnesses must be inspected before every use and in accordance with manufacturer recommendations. Any damaged or defective equipment must be removed from service immediately and an Out of Service tag must be placed on the equipment in accordance with the EHS Accident Prevention Tag Update.

10.0 Ladders

10.1 GENERAL GUIDELINES FOR LADDER SET-UP AND SELECTION

- Inspect all ladders for structural integrity before use (discard, tag, or professionally repair all broken ladders before use).
- All ladders must have parallel and uniformly spaced rungs free of any slip hazards or cracks.
- Foldout ladders must have a metal spreader or locking device to hold the ladder open.
- Ladder must be placed on a level surface.
- Secure or barricade off all ladders placed in high traffic areas (doorways, active passageways, driveways, active construction sites).

10.2 A-FRAME LADDERS

- The user is never to stand on the top two steps or be closer than 2 feet from the top of the ladder. So if the individual is working at a height of 8 feet, a 5-foot step ladder may be used at the correct height. Inspect all ladders for structural integrity before use (discard, tag, or professionally repair all broken ladders before use).
- Always maintain 3 points of contact.
CONTINUED: Fall Protection Program

- Always face forward and have at least one hand grasped on the ladder when climbing up or down.
- Keep ladders free of oils/grease and other slipping hazards.
- Don’t shift, move or extend a ladder while in use.
- Don’t load ladder beyond the maximum intended load or manufacturer’s rated capacity
- *Note: All step ladders must meet the requirements of this section on A-Frame ladders.

**10.3 EXTENSION LADDERS**
- The user is never allowed to use the top 3 rungs or be closer than 3 feet from the top of the ladder. This means that a typical worker will have an effective working height 2 feet above the top of the extension ladder.
- Inspect all ladders for structural integrity before use (discard, tag, or professionally repair all broken ladders before use.
- Always maintain 3 points of contact.
- Never fasten two ladders together to provide a longer section unless both ladders are specifically designed to do so.
- Portable non-self-supporting ladders use the four to one rule. For every 4 ft of height the ladder must move out 1 ft from the wall.
- Always face forward and have at least one hand grasped on the ladder when climbing up or down.
- Keep ladders free of oils/grease and other slipping hazards.
- Don’t shift, move or extend a ladder while in use.
- Don’t load a ladder beyond the maximum intended load or manufacturer’s rated capacity.

**10.4 FIXED LADDERS AND STAIRS**
- Inspect all ladders for structural integrity before use (discard, tag, or professionally repair all broken ladders before use.
- Always maintain 3 points of contact.
- Always face forward and have at least one hand grasped on the ladder when climbing up or down.
- Keep ladders free of oils/grease and other slipping hazards.

**11.0 Scaffolds**

**11.1 SCAFFOLD SELECTION**
The proper scaffold is selected for the task by the Competent Person, based upon the type of work to be conducted and the working load to be supported.
- Light duty scaffolds are intended for workers and tools only. The scaffold must support a working load of 25 pounds per square foot.
- Medium duty scaffolds are intended for workers, tools and construction materials. The scaffold must support a working load of 50 pounds per square foot.
- Heavy duty scaffolds are intended for workers, tools, stored materials, and construction materials. The scaffold must support a working load of 75 pounds per square foot.
- All scaffolds must be capable of supporting at least four times the design load.

**11.2 GENERAL REQUIREMENTS**
- Fall protection is required for all scaffold use 6 feet or more above a lower level.
- All scaffolds, where work is conducted in excess of 6 feet in height, shall have 4 inch toe boards.
- A scaffold shall not be moved while someone is on it.
- Follow all manufacturer’s guidelines and special warnings if the scaffold is commercially produced;
- The maximum work level height shall not exceed 4 times the least base dimension of the scaffold. Example: a four foot by six foot scaffold cannot exceed sixteen feet in height at the work platform level.
- The minimum working platform width is two feet.
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- The supporting structure for the scaffold must be rigidly braced, using adequate cross bracing or diagonal bracing with rigid platforms at each work level.
- Working platforms should have a nonslip surface.
- Scaffolds should be used only on an even surface.
- The platform surface is to be kept clear of extraneous tools and materials.
- The work level platform shall be wood, aluminum, plywood planking, steel or expanded metal for the full width of the scaffold, except for necessary protected openings.

11.3 INSPECTIONS AND MAINTENANCE

An inspection must be conducted prior to the use of any scaffold, and then daily during usage of the scaffold.

- Carefully examine the scaffold for broken or missing cross bracing, broken supporting structure, working platform, and other damaged parts. In addition, all walking and working surfaces must be free of grease, oil, paint, or other slippery substances;
- The scaffold should be equipped with positive wheel lock casters that are secured in place;
- The joint between working platform and supporting structure must be tight, and all hardware and fittings should be attached firmly. Movable parts should operate freely without binding or undue play;
- All wood parts must be free of sharp edges and splinters. Visually inspect the scaffold to be free of shakes, warping, decay, or other irregularities. Metal parts must be free of sharp edges, burrs and corrosion. Inspect for dents or bends in supporting structure, cross braces and walking/working surfaces;
- Check all working platform to support structure connections, hardware connections and rivets. If a scaffold tips over, inspect the scaffold for damage before continuing work; and
- Damaged scaffolds must be withdrawn from service and either repaired or destroyed. When a defect or unsafe condition is found, personnel shall tag or mark the scaffold so that it will not be used until corrective action is taken. Defective or unsafe situations shall be reported to the supervisor. Field repairs and the fabrication of improvised scaffolds are prohibited.

12.0 Aerial Lifts

12.1 GENERAL SAFE WORK PRACTICES

- Operators shall not wear any loose clothing or any accessory that can catch in moving parts.
- Before machine is started, the operator must walk completely around the machine to ensure everyone and everything is clear of the machine.
- Modifications and additions that may affect the capacity or safe operation of an aerial/scissor lift are strictly prohibited without the manufacturer's written approval. Capacity, operation, and maintenance instruction markings will be changed as necessary if the manufacturer approves a modification.
- The insulated portion (if applicable) of an aerial/scissor lift shall not be altered in any manner that might reduce its insulating value.
- Any signs, plates, or decals which are missing or illegible must be replaced.
- If the aerial/scissor lift becomes disabled, an “Out Of Service” tag or equivalent shall be attached to the controls inside the platform in a conspicuous location.
- Aerial/scissor lifts with noted, reported deficiencies shall not be operated until repairs are made and equipment is authorized for use by EHS.
- Operators must report all accidents, regardless of fault and severity, to their Supervisor.

12.2 INSPECTIONS

Prior to the operation of any aerial lift, an inspection of the lift must be completed. This applies at the beginning of every work period, and whenever a new equipment operator takes control of the aerial lift. Any safety defects (such as hydraulic fluid leaks; defective brakes, steering, lights, or horn; and/or missing fire extinguisher, lights, seat belt, or back-up alarm) must be reported for immediate repair. An Out of Service tag must be placed on the equipment in accordance with the EHS Accident Prevention Tag Update.

Manufacturers require regular inspections of lifts by a Qualified Person. Ensure all lift inspections are conducted in the required timeframe and by a Qualified Person. If lifts are found to be out of compliance, the lift must be placed out of service until required inspections are completed.
12.3 LIFT SET-UP

- Consideration shall be given to the amount of wind. Follow the manufacturer’s instruction regarding operation in windy conditions. As a general rule aerial lifts shall not be operated in winds exceeding 25mph although this can vary depending on the model of equipment:
  - At 20mph wind speeds or anticipated gusts, lifts will be lowered to a maximum height of 20 feet.
  - At 25mph wind speeds or anticipated gusts, lifts will be grounded.
  - If at any time, staff feels unsafe in lifts, they may make decision to ground the lift and review conditions with their supervisor.
- Guardrails must be installed and access gates or openings must be closed before raising the platform.
- Platform load limits specified by the manufacturer shall not be exceeded.
- Consideration shall be given to the protection of bystanders via barricading, having another employee keep bystanders at a safe distance, or other means.
- Aerial lifts shall not be operated from trucks, scaffolds, or similar equipment.

13.0 Training

13.1 ANNUAL TRAINING
An annual training is required for all employees potentially exposed to fall hazards. The training will detail recognition of hazards, appropriate controls, and fall protection equipment.

13.2 EQUIPMENT SPECIFIC TRAINING
All employees working with personal fall arrest systems are required to have training on the specific system before they begin work with this system. This equipment specific training is to be provided by the competent person.

13.3 AERIAL LIFT TRAINING
All employees working with personal fall arrest systems are required to have training on the specific system before they begin work with this system. This equipment-specific training is to be provided by the Competent Person.

13.3.1 Initial Operator Training
Prior to operation of an aerial lift at WCM prospective operators must pass a two part training session. The initial portion of the training reviews safe work practices, hazards of working from and operating lifts, and also safe operation for each model lift the operator will use. The second portion of the training involved a practical review of lift controls and operations and a test to ensure the operator is competent in using the lift.

13.3.2 Refresher Training
Annual refresher training must be attended by all aerial lift operators. This training will review safe work practices and the hazards associated with working from and operating aerial lifts.

13.3.3 Aerial Lift Training Records
Training records for aerial lift operators will be distributed to supervisors on a regular basis. Supervisors must review these records before allowing an employee to operate a lift.

13.4 COMPETENT PERSON TRAINING
An annual Competent Person training is required for all employees fulfilling the role of Competent Person for fall protection. The training must include, but is not limited to, the following topics:

- The nature of fall hazards in the work area.
- The correct procedure for set-up, maintenance, disassembling, and inspecting, the use of fall protection systems.
- The use and operation of guardrail systems, personal fall protection systems, and other protection used on campus.
- The correct procedures for the handling and storage of equipment and material, and the erection of overhead protection.
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- The role of employees in this Fall Protection Program.
- The Appropriate OSHA standards.

14.0 Record Retention, Availability, and Revisions

14.1 EQUIPMENT INSTALLATION, TESTING, AND INSPECTION RECORDS
Competent Persons are required to maintain records associated with all personal fall arrest systems and equipment. This includes all installation documentation, testing, and inspection records. All required records must be available for review upon request.

14.2 TRAINING RECORDS
EHS will maintain all training records for the annual fall protection training. All other training records must be maintained by the individual departments. All training records must be available for review upon request.

14.3 REVISIONS
An annual review will be conducted of the Fall Protection Program. Program revisions will be made, should any deficiencies be identified during the annual review. Any deficiencies brought to the attention of EHS will be reviewed and any changes necessary will be implemented in a timely fashion.

15.0 References
29 CFR 1910 Subpart D – Walking and Working Surfaces
29 CFR 1910 Subpart L – Scaffolds