**DATE:** January 17, 2017

**SUBJECT**: Slip, Trip and Fall Protection Program, DePauw University

**REGULATORY STANDARDS**: OSHA 29 CFR 1910.66

 29 CFR 1910.128, 129, 130, 131

 29 CFR 1920.23,24,25,26,27

 29 CFR 1926.104

 29 CFR 1926.500

**BASIS**: Approximately 300,000 disabling injuries occur in work-related falls each year. 85% of workers surviving falls lose time from their jobs. This poses a serious problem for exposed workers and their employer. The OSHA Safety Standards establish uniform requirements to make sure that the hazards elevated falls represent in U.S. workplaces are evaluated, and that this hazard information is transmitted to all affected workers.

**GENERAL POLICY**: DePauw University will ensure that work areas that have a potential for falls over four (4) feet in height within our facilities are evaluated, and that information concerning their hazards be transmitted to all affected employees. This document is intended to address comprehensively the issues of evaluating potential fall hazards, communicating information concerning these hazards, and establishing appropriate protective measures for all affected employees.

**RESPONSIBIITY**: DePauw University Division of Finance and Administration is responsible for the administration of this program and has full authority to make necessary decisions to ensure success of the program. All university employees are responsible for safety at all times. This institution has expressly authorized managers/supervisors to halt any university operation where there is danger of serious personal injury.

**Contents of the Slip, Trip and Fall Protection Program**

1. Written Program
2. Statement of Policy Disciplinary Action
3. Facility/Department Evaluation
4. Training
5. Fall Hazard Control Procedures
6. Protective Materials and Hardware
7. Fall Protection Systems
8. Inspection and Maintenance
9. Common and Dangerous Fall Hazards
10. Contractor Responsibilities
11. Definitions

**DePauw University Slip, Trip and Fall Protection Program**

1. **Written Program** – DePauw University will review and evaluate this standard practice instruction document:
	1. On an annual basis
	2. When changes occur to 29 CFR that prompt a revision of this document
	3. When facility operational changes occur that require a revision of this document
	4. When there is an accident or close-call that relates to this area of safety
	5. Review the program any time fall protection procedures fail

Effective implementation of this program requires support from all levels of management within this institution. This written program will be communicated to all personnel who are affected by it. It encompasses the total workplace, regardless of the number of workers employed or the number of work shifts. It is designed to establish clear goals and objectives.

A log of Job Hazard Evaluations and/or Accident/Incident Investigations that have been conducted and have resulted in review/revision of this Slip, Trip and Fall Protection Program will be maintained by the Manager of Safety and Risk Management Services and will be available for review by responsible parties.

1. **Statement of Policy** – The hazards of potential falls at heights of 4 feet and above will be addressed in this document. This instruction describes a systematic approach that must be used to prevent workers from falling. This instruction also lists some of the most common fall hazards, and provides recommendations and guidelines for selecting fall arrest systems.

Employees who fail to follow the safety procedures and protocols identified in this program may be subjected to disciplinary action as specified in the university’s Progressive Discipline Policy. The disciplinary actions taken can include verbal reprimand, written warning or immediate termination based upon the circumstances of the violation.

1. **Facility/Department Evaluation** – The workplace will be assessed before each assigned job for potential fall hazards. Proper fall arrest equipment will be used for jobs requiring fall protection when elimination of the hazard(s) is not possible. This institution will evaluate the facilities by department to determine fall hazards. This preliminary evaluation will detail the required steps for protecting employees from fall hazards. A fall hazards assessment sheet will be used to document fall hazard assessments. A complete list of fall hazard locations and protective measures procedures will be maintained.

**Hazard Location List**

**Department Specific Fall Hazard Location Remarks**

**Service Center** Warehouses A and C Primarily racks;

 Use forklift with

 cage

**Information Services** Locations around campus for Use primarily

 projectors, projector screens, speakers, portable

 wiring, routers, etc. for computer systems ladders

**Peeler Art Center** Gallery areas for displays and lighting Portable

 ladders and

 personnel lifts

**Facilities Management** Locations in all campus buildings and Use attached

 exteriors to maintain ceiling systems, ladders at many

 lighting systems, window systems, locations

 smoke detectors, painting, roof and

 guttering, cleaning vents and maintaining

 door systems, installation of special event

 materials, tree trimming, boiler maintenance,

 overhead piping, accessing roof locations,

 accessing crawl spaces from basement floors,

 working on athletic scoreboards, working on pumps,

 motors and fans, pulling ceiling cable, accessing

 parking lot lighting, installation and repair of

 fire protection systems, working on A/V and PA

 systems, operating divider curtains in Lilly

 Fieldhouse, installing phone and data cables,

**Green Center for The**

**Performing Arts** Catwalks in Moore Theatre, Kerr Theatre, Kresge Auditorium

 Set Constructions in Moore Theatre

 Riser setups in Moore Theatre

 Stage edge in Moore Theatre, Kresge Auditorium, Thompson

 Recital Hall

 Ladders and scaffolding for construction

 Ladders for hanging outdoor banners

 Stairs throughout building

 Balconies in Great Hall, Hallways, and Kresge Auditorium

**Pulliam Center for**

**Contemporary Media** Television Studio A Lighting Grid Ladders, lifts

 Television Area Prop Room (minimal set construction) Ladders

 Television Studio B Lighting Grid Ladders, lifts

 Rooftop Access Ladders (three total) Fixed ladders

 Watson Forum Lighting and Cabling Grids Ladders, ceiling

 Access

 Main Lobby Lighting and Signs Ladders, lifts

 Lighting Studio on Lower Level Ladders

**Employees Affected by the Slip, Trip, and Fall Protection Program for**

**Required Work Above 4 Feet**

**Department Job Title**

**Service Center**  Service Center Superintendent

 Service Center Worker II

 Assistant to Mail Center Manager and Procurement Clerk

 Manager for Safety and Risk Management Services

**Peeler Art Center** Director/Curator

 Assistant Curator

 Registrar

 Gallery Preparator

 5th Year Klauser Fellow

**Information Services** Systems and Network Engineer

 Senior Network and System Administrator

 Senior Systems and Networks Engineer and Security Specialist

 Network Administrator

 Coordinator of Media Services

 Associate Coordinator of Media Services

 Media Support Specialist

 Media Technician

**Facilities Management** Landscaper

 Facility Service Provider

 HVAC/Heat Plan Technician

 Mechanical Maintenance – Plumber

 Groundskeeper

 Building Inspector

 Carpenter

 Electrician

 Locksmith

 Painter/Maintenance

 Team Leader

 Operations Superintendent

 Group Leader

 Landscape Superintendent

 Custodial Superintendent

**Green Center for The Performing Arts** Technical Director

 Director of Operations

 Operations Coordinator

 Assistant Operations Coordinator

 Student Workers

 Manager of Marketing and Publications

 Faculty (performers and ensemble directors)

**Pulliam Center for Contemporary**

**Media**  Director of PCCM

 Assistant Director of PCCM

 Chief Engineer

 Director of Television Operations

 ITAP Coordinator

 Student Workers

1. **Training** – A training program will be provided for all employees who will be exposed to fall hazards in the work area, and will be conducted by competent personnel. The program will include but will not be limited to:
	1. A description of fall hazards in the work area
	2. Evaluation for methods to eliminate fall hazards
	3. Procedures for using fall prevention and fall arrest systems
	4. Fall arrest equipment limitations
	5. Evaluation of total fall distance during fall arrest
	6. Inspection and storage procedures for fall arrest equipment

Generally, workers will be trained to recognize the hazards of falling from elevations and to avoid falls from grade level to lower levels through holes or openings in walking/working surfaces. Training programs will include elimination, prevention, control and fall arrest systems. It must be ensured that appropriate fall arrest systems are installed, and that employees know how to use them before beginning any work that requires fall protection.

4.1 **Initial training** – Training will be conducted prior to job assignment. DePauw University will provide training to ensure that the purpose, function, and proper use of fall protection is understood by employees and that the knowledge and skills required for the safe application and usage is acquired by employees. This standard practice instruction document will be provided to, and read by all employees receiving training. The training will include, at a minimum, the following:

 4.1.1 Types of fall protection equipment appropriate to use

 4.1.2 Recognition of applicable fall hazards associated with the work to be completed and the locations of such.

 4.1.3 Fall arrest anchor point capacity requirements

 4.1.4 Procedures for removal of fall protection and arrest devices for repair or replacement

 4.1.5 All other employees whose work operations are, or may be, in an area where fall protection devices may be utilized, will be instructed to an awareness level concerning hazards associated with fall protection operations

 4.1.6 Equipment maintenance and inspection requirements

 4.1.7 Equipment donning and doffing procedures

 4.1.8 Equipment strengths and limitations

4.2 **Refresher Training** – This standard practice instruction document will be provided to, and read by all employees receiving refresher training. The training content will be identical to initial training. Refresher training will be conducted on an annual basis or when the following conditions are met, whichever event occurs sooner:

 4.2.1 Retraining will be provided for all authorized and affected employees whenever (and prior to) a change in their job assignments, a change in the type of fall equipment used, or when a known hazard is added to the work environment which affects the fall protection program.

 4.2.2 Additional training will also be conducted whenever a periodic inspection reveals, or whenever this employer has reason to believe, that there are deviations from, or inadequacies in, the employee’s knowledge or use of fall protection equipment or procedures.

 4.2.3 Whenever a fall protection procedure fails

 4.2.4 The retraining will reestablish employee proficiency and introduce new or revised methods and procedures, as necessary

4.3 **Certification** – The employer will certify that employee training has been accomplished and is being kept up to date. The certification will contain the employee’s name and dates of training. Training will be conducted by competent personnel.

1. **Fall Hazard Control Procedures (Fall Prevention)** – Standard Operating Procedures (SOP), will be developed, documented, and utilized for the control of potential fall hazards by each department identified in section 3 above. SOPs will be developed by competent personnel who will be provided with any required specialized training to recognize fall hazards, to understand and address fall prevention techniques, and to become familiar with fall arrest equipment and procedures. It is critical that they consider fall protection design for the safety of operations where employees must work at elevated heights.

The following format will be followed when developing the SOP. The procedures will clearly and specifically outline the scope, purpose, authorization, rules and techniques to be utilized to control fall hazards in the work area (including the means by which compliance will be enforced) and will include, but not be limited to, the following:

* Procedures taken to eliminate fall hazards including work flow modifications to eliminate the need to work above 4 feet
* Specific procedural steps for the use and operation of body harness systems, and other fall protection systems, where required
* Specific procedural steps for the placement, erection, inspection, maintenance, disassembly and transfer of fall protection systems or devices and the person(s) responsible for them
* Specific requirements for testing fall protection systems or equipment to determine and verify the effectiveness of the fall protection control measures
* The correct procedures to rescue employees who have fallen
* The role of each employee in fall protection plans and applicable policies
* Specific requirements for testing fall protection systems or equipment
* Procedures for observation of individuals and their job tasks and work habits in order to ensure that the SOP is followed
1. **Protective Materials and Hardware** – Appropriate fall protection devices will be provided for potential fall hazards. Selection of the equipment will be based on the fall protection requirements. Selection criteria require that all equipment selected be singularly identified, will be the only device(s) used for controlling falls and will not be used for other purposes. Criteria to be met include:
* Capable of withstanding the environment to which they are exposed for the maximum period of time that exposure is expected
* Anchor points will not deteriorate when located in corrosive environments such as areas where acid and alkali chemicals are handed and stored
* Capable of withstanding the ultimate load of 5,000 lbs., or 2 times the fall arrest impact load, for the maximum period of time that exposure is expected
* Fall protection devices will be standardized whenever possible.
* Guard rails shall be able to withstand at least 200 lbs. of force applied in any direction on the top rail
* All floor openings, including a stairway, ladderway, hatchway, chute, skylight, pit, and manhole must be guarded by fixed or removable railings, screens, or toeboards.
* Every wall, window wall, and chute wall opening from which there is a drop of more than 4 feet must be guarded by one or more protection devices described in the rule.
* Open-sided floors, platforms, and runways must be guarded by a railing and, in certain cases, a toeboard
1. **Fall Protection Systems** – When fall hazards cannot be eliminated through any other means, fall arrest systems will be used to control falls. Proper training on the use of fall arrest equipment is essential and will be provided prior to use.

**Full Body Harness Systems** – A full body harness system consists of a full-body harness, lanyards with energy shock absorbers or retractable fall limiters, all with double-locking snap hooks. Before using a full-body harness system, the supervisor and/or the user must address such issues as:

* Has the user been trained to recognize fall hazards and use fall arrest systems properly?
* Are all components of the system compatible according to the manufacturer’s instructions?
* Have appropriate anchorage points and attachment techniques been reviewed?
* Has free fall distance been considered so that a work will not strike a lower surface or object before the fall is arrested?
* Have swing fall hazards been eliminated?
* Have safe methods to retrieve fallen workers been planned?
* Has the full-body harness and all of its components been inspected both before each use and on a regular semi-annual basis?
* Is any of the equipment, including lanyards, connectors, and lifelines, subject to such problems as welding damage, chemical corrosion, or sandblasting operations?

**Retractable Lifelines** – A properly inspected and maintained retractable fall limiter, when correctly installed and used as part of the fall arrest system, automatically stops a person’s descent in a short distance after the onset of an accidental fall. Retractable fall limiters may be considered when working in areas such as on roofs and scaffolds, or in tanks, towers, vessels, and manholes. Also, retractable fall limiters must be considered when climbing such equipment as vertical fixed ladders. Before using a retractable fall limiter, the supervisor and/or user must address the following questions:

* Has the user been trained to use a retractable fall limiter correctly?
* Is the retractable fall limiter being used in conjunction with a complete fall arrest system?
* Is the equipment under a regular maintenance program?
* Has the equipment been inspected within the last six months?

**Standard Harnesses** – Harnesses for general purpose work must be Class III, constructed with a sliding back D-ring. Standard harnesses are suitable for continuous fall protection while climbing, riding, or working on elevated personnel platforms. They are suitable for positioning, fall arrest, and the rescue and evacuation of people who are working at elevated heights.

**Guard Rails** – Guard rails should be installed in any location where there is a possibility of a fall of 4 feet or more. The guard rails shall be 42 inches vertically, from the floor and a 4 inch toe board shall be installed at the edge of the hazard. Typical locations that require guard rails include Floor Openings, Wall Openings, and Open-sided Floors, Platforms and Runways.

1. **Inspection and Maintenance** – To ensure that fall protection systems are ready and able to perform their required tasks, a program of inspection and maintenance will be implemented and maintained. The following, at a minimum, will comprise the basic requirements of the inspection and maintenance program:
	1. Equipment manufacturer’s instructions will be incorporated into the inspection and preventive maintenance procedures
	2. All fall protection equipment will be inspected prior to each use, and a documented inspection at intervals not to exceed 6 months, or in accordance with the manufacturer’s guidelines, whichever is shorter
	3. The user will inspect his/her equipment prior to each use and check the inspection date
	4. Any fall protection equipment subjected to a fall or impact load, will be removed from service immediately and inspected by a qualified person (i.e., sent back to the manufacturer)
	5. Check all equipment for mold, damage, wear, mildew, or distortion
	6. Ensure that no straps are cut, broken, torn or scraped
	7. Special situations such as radiation, electrical conductivity, and chemical effects will be considered
	8. Equipment that is damaged or in need of maintenance will be tagged as unusable and will not be stored in the same area as serviceable equipment
	9. A detailed inspection policy will be used for equipment stored for periods exceeding one month
	10. Anchors and mountings will be inspected before each use by the user and supervisor for signs of damage
	11. Guard rails will be sturdy, well anchored and in compliance with Federal and/or local regulations
	12. Ladders, Mobile Ladder Stands and Scaffolding shall meet or exceed the National and/or local regulatory requirements
2. **Most Common and Most Dangerous Fall Hazards** – The tasks and situations listed below present inherent fall hazards. Give special attention to providing fall prevention and/or fall control for them, remembering that this attention is necessary in the design, engineering, planning, and execution stages of work. Supervisors will give special consideration to fall protection for the following tasks:
	1. Working from crane booms and lower cranes
	2. Working on top of machinery and equipment, such as overhead cranes, furnaces, conveyors and presses
	3. Other work that involves fall hazards, such as ‘off-chutes’ from main piping in duct work or boilers
	4. Working on roofs
	5. Working over chemical tanks or open pits
	6. Working from a fixed or portable ladders, or climbing systems
	7. Performing work on water towers, product tanks, silos, pipe racks, presses and floor pits
	8. Working around unguarded edges of work platforms, racking systems and elevated surfaces
	9. Working on Ladders, Mobile Ladder Platforms, and/or Scaffolding
3. **Contractor Responsibilities** – In addition to complying with fall protection requirements that apply to all university employees, each contractor who is retained to perform operation that involve fall protection will:
	1. Provide a written fall protection program which describes the Contractors’ fall protection policies and procedures when they will be working at elevated heights
	2. Coordinate fall protection operations with the university, when both university personnel and contractor personnel will be working in or near recognized fall hazard locations
	3. Inform the university of any hazards confronted or created in conducting operations involving fall protection within university owned facilities through a debriefing immediately prior to the operation
4. **Definitions**

***Anchorage*** means a secure point of attachment for lifelines, lanyards or deceleration devices.

***Body belt*** means a strap with means both for securing it about the waist and for attaching it to a lanyard, lifeline, or deceleration device.

***Body harness*** means straps which may be secured about the employee in a manner that will distribute the fall arrest forces over at least the thighs, pelvis, waist, chest and shoulders with means for attaching it to other components of a personal fall arrest system.

***Competent person*** means a person who is capable of identifying hazardous or dangerous conditions in any personal fall arrest system or any component thereof, as well as in their application and use with related equipment.

***Connector*** means a device which is used to couple (connect) parts of the personal fall arrest system and positioning device systems together. It may be an independent component of the system, such as a carabiner, or it may be an integral component of part of the system.

***Deceleration device*** means any mechanism with a maximum length of 3.5 feet, such as a rope grab, rip stitch lanyard, tearing or deforming lanyards, self-retracting lifelines, etc. which serves to dissipate a substantial amount of energy during a fall arrest, or otherwise limit the energy imposed on an employee during fall arrest.

***Energy shock absorber*** means a device that limits shock-load forces on the body.

***Failure*** means load refusal, breakage, or separation of component parts. Load refusal is the point where the ultimate strength is exceeded.

***Fall arrest system*** mans a system specifically designed to secure, suspend, or assist in retrieving a worker in or from a hazardous work area. The basic components of a fall arrest system include anchorage, anchorage connector, lanyard, shock absorber, harness and self-locking snap hook.

***Free fall*** means the act of falling before a personal fall arrest system begins to apply force to arrest the fall.

***Free fall distance*** means the vertical displacement of the fall arrest attachment point on the employee’s body harness between onset of the fall and just before the system begins to apply force to arrest the fall (maximum of six (6) feet). This distance excludes deceleration distance, and lifeline/lanyard elongation, but includes any deceleration device slide distance or self-retracting lifeline/lanyard extension before they operate and fall arrest forces occur.

***Hole*** means a gap or void 2 inches or more in its least dimension, in a floor, roof, or other walking/working surface.

***Lanyard*** means a flexible line of rope, wire rope, or strap which generally has a connector at each end for connecting the body harness to a deceleration device, lifeline or anchorage.

***Leading edge*** means the edge of a floor, roof or formwork for a floor or other walking/working surface which changes location as additional floor, roof, decking or formwork sections are placed, formed or constructed. A leading edge is considered to be an unprotected side and edge during periods when it is not actively and continuously under construction.

***Lifeline*** means a component consisting of a flexible line for connection to an anchorage at one end to hang vertically or for connect to anchorages at both ends to stretch horizontally and which serves as a means for connecting other components of a personal fall arrest system to the anchorage.

***Opening*** means a gap or void 30 inches or more high and 18 inches or more wide, in a wall or partition, through which employees can fall to a lower level.

***Personal fall arrest system*** means devices used to arrest an employee in a fall from a working level. It consists of an anchorage, connectors, body harness and may include a lanyard deceleration device, lifeline or suitable combination of these. As of January 1998, the use of a body belt for fall arrest is prohibited.

***Positioning device system*** means a body belt or body harness system rigged to allow an employee to be supported on an elevated vertical surface, such as a wall, and work with both hands free while leaning.

***Qualified person*** means one with a recognized degree or professional certificate and extensive knowledge and experience in the subject field who is capable of design, analysis, evaluation and specifications in the subject work, project or product.

***Retractable fall limiter*** means a fall arrest device that allows free travel without slack rope, but locks instantly when a fall begins.

***Rope grab*** means a deceleration device which travels on a lifeline and automatically, by friction, engages the lifeline and locks so as to arrest the fall of an employee. A rope grab usually employs the principle of inertial locking, cam/lever locking or both.

***Safety-monitoring system*** means a safety system in which a competent person is responsible for recognizing and warning employees of fall hazards.

***Self-retracting fall limiter/lanyard*** means a deceleration device containing a drum-wound line which can be slowly extracted from, or retracted onto, the drum under slight tension during normal employee movement, and which, after onset of a fall, automatically locks the drum and arrests the fall.

Snap hook means a connector comprised of a hook-shaped member with a double-locking mechanism that includes a self-closing, self-locking keeper which remains closed and locked until unlocked and pressed open for connection or disconnection.

***Toe board*** means a low protective barrier that will prevent the fall of materials and equipment to lower levels and provide protection from falls for personnel.

***Walking/working surface*** means any surface, whether horizontal or vertical on which an employee walks or works, including, but not limited to, floors, roofs, bridges, runways, formwork and concrete reinforcing steel but not including ladders, vehicles, or trailers, on which employees must be located in order to perform their job duties.

***Warning line system*** means a barrier erected on a roof to warn employees that they are approaching an unprotected roof side or edge, and which designates an area where fall arrest equipment is required.

***Work area*** means that portion of a walking/working surface where job duties are being performed.