

**UAB** THE UNIVERSITY OF  
ALABAMA AT BIRMINGHAM.

# Improvements For Radiation Safety Training in a Post COVID Environment

Chandler Cotton, *Charles Wilson, PhD, CHP, CLSO, CSP,*  
Emily Caffrey PhD, CHP, Robert Heath MPH

# Outline

---

1. What brought us here
2. What we've learned
3. Where we want to go

## About your speaker

- Fell in love with Health Physics and Radiation Safety in early College
- Had always enjoyed tutoring/teaching
- Grad assistantship NSF Peer Learning and Supplemental Instruction
- 1<sup>st</sup> Experience as RSO (Annual Training 2<sup>nd</sup> week)
- Realized the value in connecting Andragogy and Rad Safety Training
- Explored how to improve Training

# How can we improve Radiation Safety Training?

# Many Challenges

- Our Time
- Rad Worker Time
- Available Resources
- Means of Testing Success
- Regulatory Agencies
- Tiedown Requirements



# What isn't a challenge?

- We do **not need to clone ourselves** for training
- The **information** should be concise but meet requirements
- **Delivery** options are abundant
- The goal should be simple - **ALARA**



# 1 Goal split into 3 projects

- University of Missouri – Swap to Video Modules (Ongoing)
- University of Alabama at Birmingham – Incorporate Active Learning (Ongoing)
- Simultaneously also investigate burgeoning issues and gaps in training
  - Veterinary Use of Radiation Producing Machines
- Find a way to measure success that doesn't hurt the current program

**UAB** THE UNIVERSITY OF  
ALABAMA AT BIRMINGHAM.

# Radiation Safety at UAB

School of Health Professions



# UAB is/has

**An Agreement State**

**A Broad Scope Licensee under the jurisdiction of the Alabama Department of Public Health**

**>4000 Badged Radiation Workers**

**Hospital and University Users**

# Rad Safety Training at UAB

A few years ago:

40 Hour (1-week) courses that included constant engagement

Now:

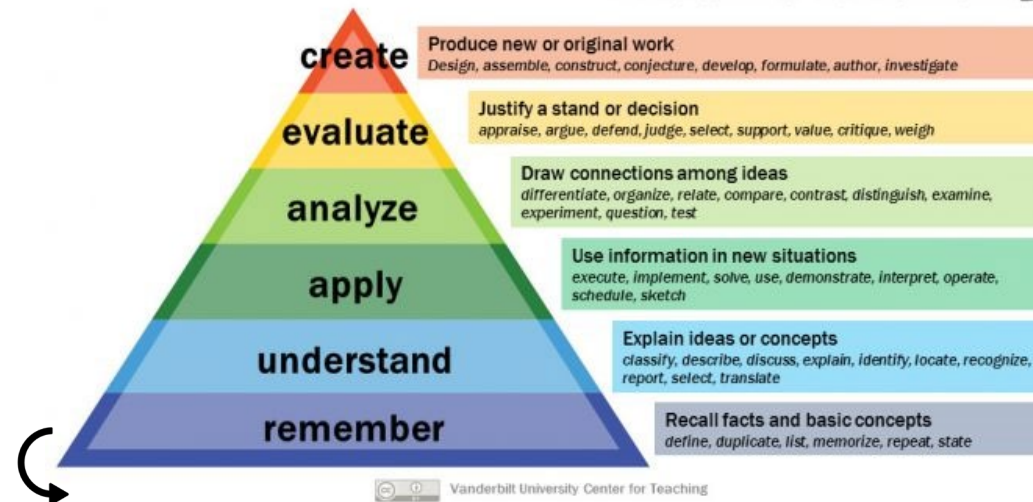
PDFs (Handouts) Online with 5-10 Multiple Choice Questions

Easy to cheat

No high-level verification

No critical Thinking

## Bloom's Taxonomy



# Does this matter?

**We started seeing small (non violation) but avoidable (negligible) issues in different departments at UAB**

**While immediate fixes were addressed, a core possibility that related these issues was poor training retention**

# How can we fix this?

## Incorporation of Proper Radiation Safety Andragogic Training

**Andragogy (Malcom Knowles) – The science of adult learning and teaching**

**Learners need to know WHY they are doing this**

**Must draw on real world experience from all learners**

**Task oriented**

**Intrinsic Motivation**

# Andragogy

**Pedagogy – The science of learning (children)**

**Self Directed**

**Personal Development**

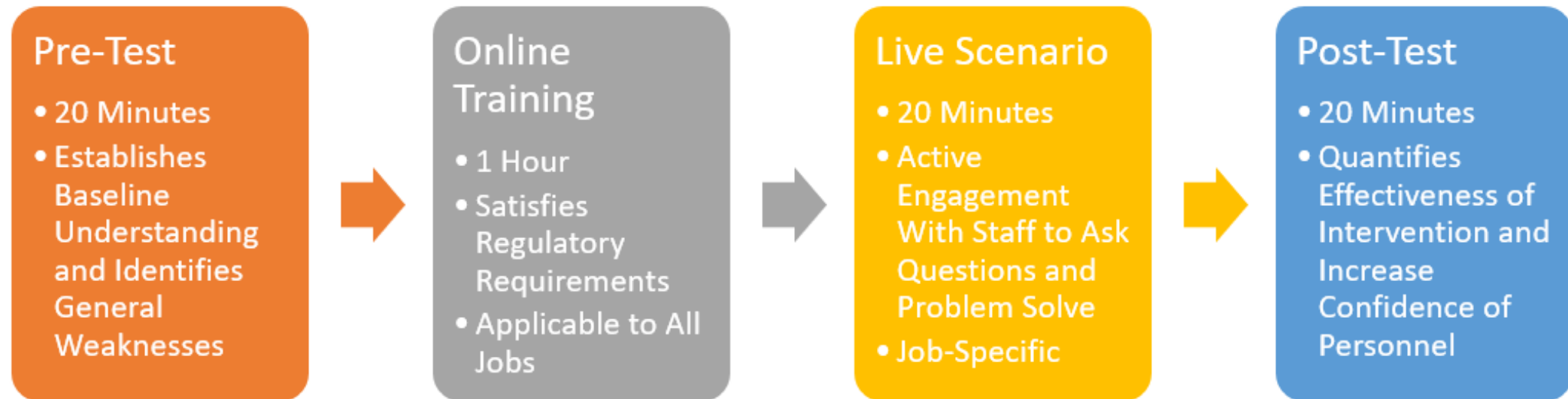
**Experiential**

**Problem Centered**

**Internal Motivation**

# How to Incorporate Andragogy into UAB RS Training?

## New training model:



# Andragogy

**Self Directed – Online Training**

**Personal Development – Clear communication of WHY**

**Experiential – The Scenario will incorporate previous experience of the group**

**Problem Centered – The Scenario will address a specific problem**

**Internal Motivation – The scenario should make the learner better at their job**

# Rolling out this Fall 2023

- **Two Subgroups of UAB Radiation workers will be tested by this model**
  - **Interventional Radiology (20 radiation workers)**
  - **Nuclear Medicine (10 radiation workers)**
  
- **If successful additional programs will be rolled out in 2024**



# Discussion

- **Concerns we foresee:**
- **Timing – Scheduling for the scenarios particularly with new hires**
- **Testing – Between two programs for how this will be handled**
- **IRB – Not required, but required to request it**

# Looking Forward

- All 3 papers are aiming to be submitted for publication December 2023 and published Mid 2024

# Contact

- <https://www.uab.edu/shp/cds/health-physics>
- Chandler Cotton [chancott@uab.edu](mailto:chancott@uab.edu)
- Charles Wilson [cawilso2@uab.edu](mailto:cawilso2@uab.edu)