



Heat Stress

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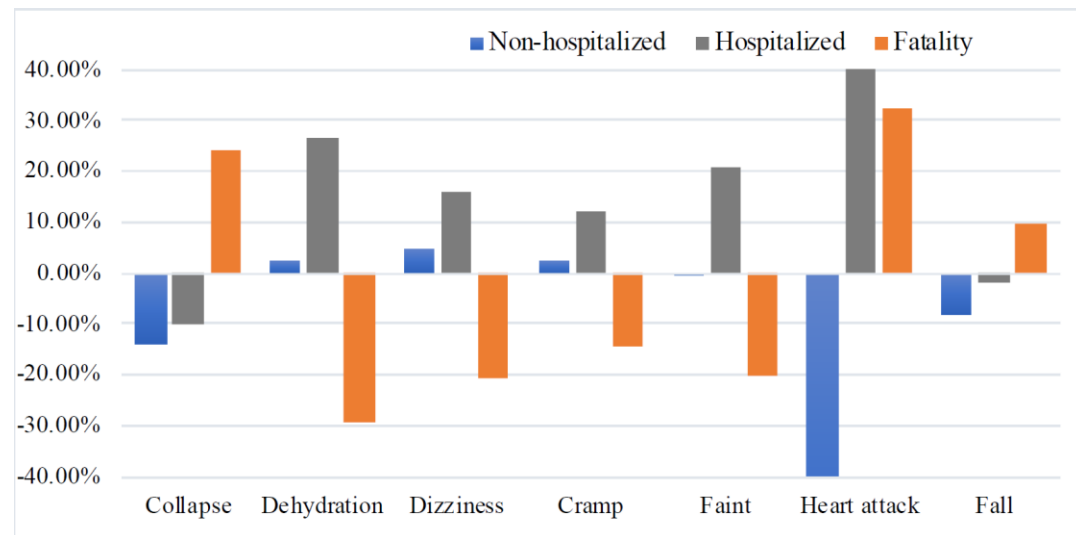
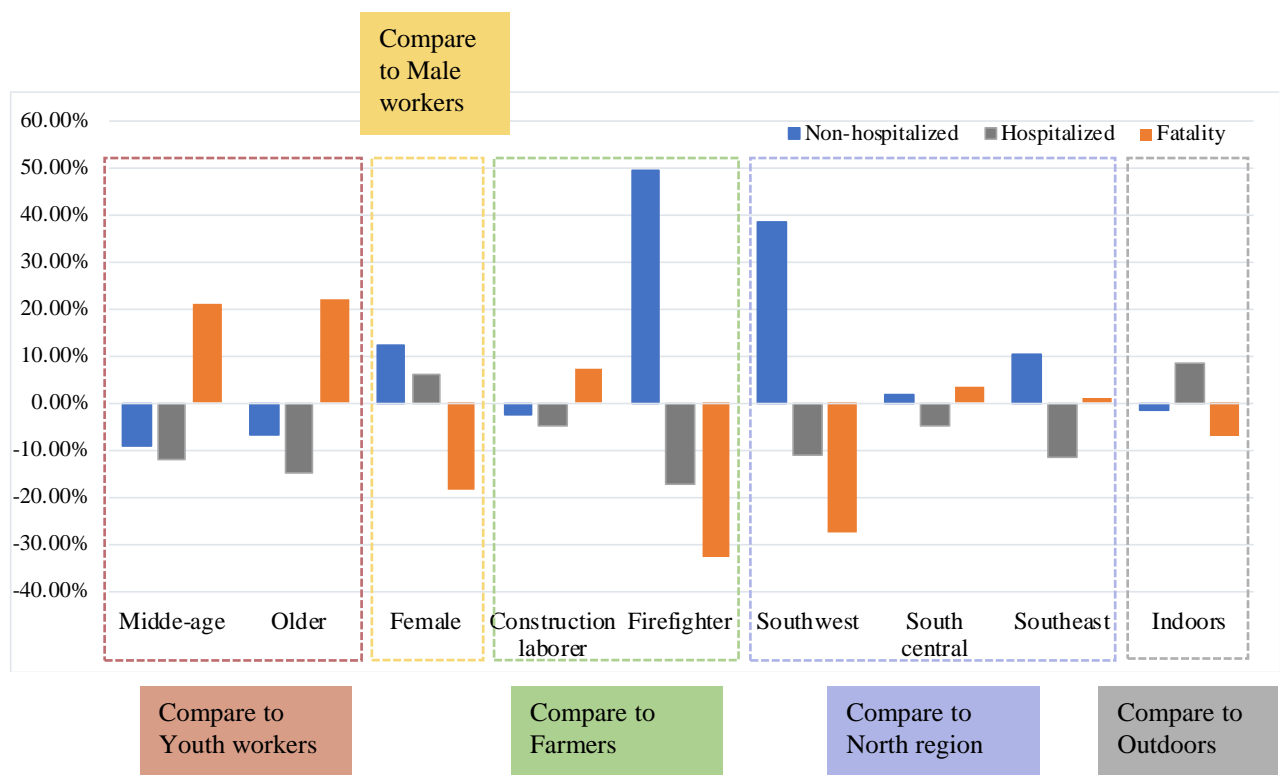
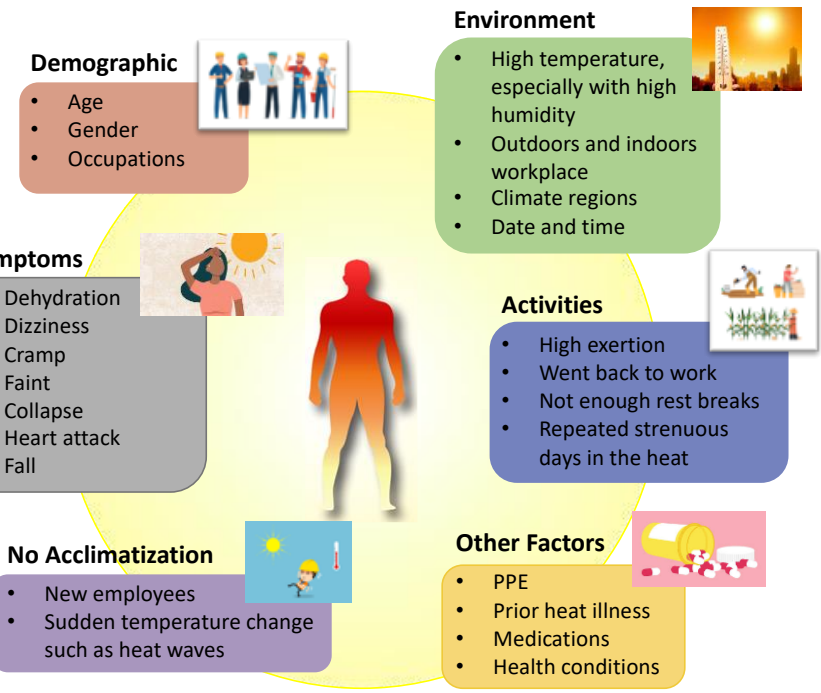
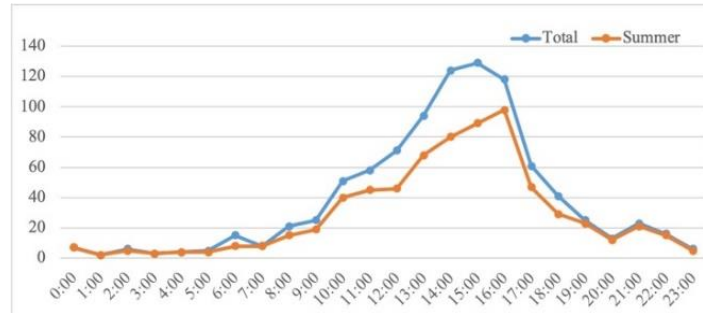
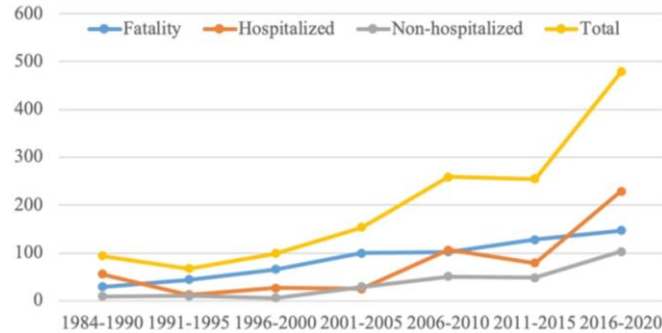
SAVE Lab Website: <https://save.lab.ua.edu/>

Safety Automation and Visualization Environment (SAVE) Laboratory

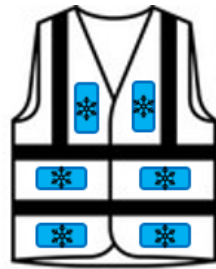
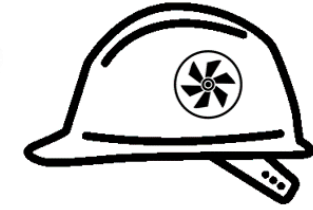


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Heat-related Illness severity risk factors



Heat Stress Interventions



Internal Interventions

External Interventions

Administrative Interventions

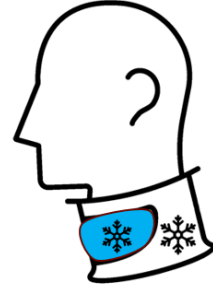
- Fluid
- Food
- Medications
- Mental Health



Regulation / Standards



Workplace Safety Culture



- Clothing
- Wearable Cooling Devices
- Fans
- Shade
- Topical Strategies

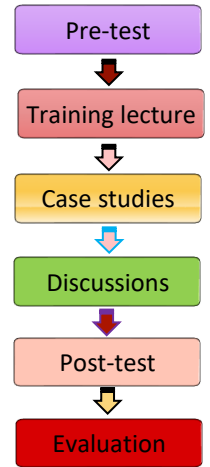
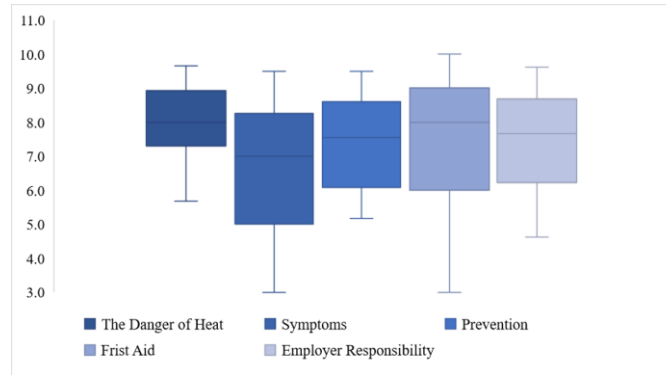
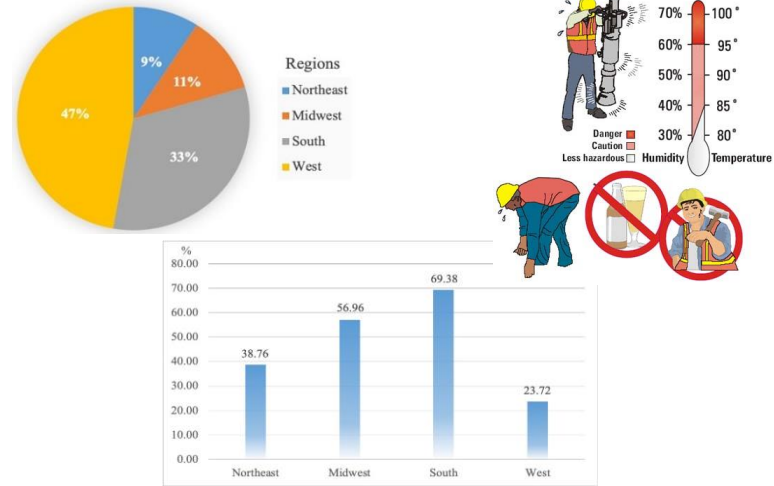


Feasibility & Effectiveness of External Interventions

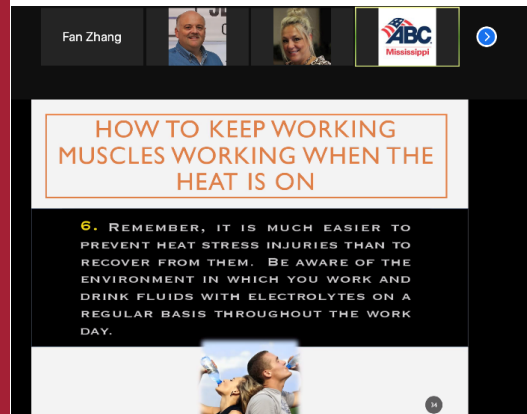
- Pre/Per/Post Cooling
- Hot-humid / Hot-dry



Heat Stress Training



Virtual Instructor - Led Training (VILT)



Training in Spanish



Train-the-Trainer



WHAT IS HEAT ILLNESS

THE BODY NORMALLY COOLS ITSELF BY sweating. During hot weather, especially with high humidity, sweating isn't enough. Body temperature can rise to dangerous levels if range from heat rash and heat cramps to heat exhaustion and heat stroke. Heat stroke can result in death and requires immediate medical attention.

PREVENTING HEAT ILLNESS

- REMEMBER THREE SIMPLE WORDS: WATER, REST, SHADE.
- DRINK WATER OFTEN
- REST IN THE SHADE
- TAKE BREAKS
- LIMIT TIME IN THE HEAT

WHO IS AFFECTED

Workers exposed to hot and humid conditions, particularly those doing heavy work tasks or using bulky protective clothing and equipment.

SYMPTOMS OF HEAT ILLNESS

- excessive sweating
- extreme thirst
- dry mouth
- pale, moist skin
- headaches
- irritability
- rapid breathing
- cramps or nausea
- confusion of aggressive behavior
- seizures or convulsions
- unresponsiveness

HEAT EXHAUSTION FIRST AID

- Move victim to a cool place.
- Keep the victim lying down with legs straight and elevated 8-12 inches.
- Cool the victim by applying cold packs or wet towels or cloths. Fan the victim. Give the victim cold water if he or she is fully conscious.
- If no improvement is noted within 30 minutes.
- seek medical attention.



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Heat Stress Training

Outcomes

Total number	
Cities	13
States	6
Companies	> 25
Trainees	> 600 workers

Level 1 Assessment

Evaluation	Top Rated
Topics	91%
Presentation	98%
Instructor	98%

Level 2 Assessment

Pre-Test / Post Test	Improvement
Average Accuracy	13%

Level 3 Training Impact Assessment - Workforce Training and Development

Competency		Competency												
		Identifying the danger of heat							Choose the first aid treatment			Articulating heat illness prevention		
Subset		Sign and Symptoms					Risk Factors							
Corresponding Knowledge/Skills		Dehydration Signs	Heat Exhaustion Signs	Heat Stroke Signs	Heat Cramps /Rhabdomyolysis Signs	Heat Rash Signs	Environmental Risks	Work-related Risks	Personal Risks (Health Conditions, medications, Alcohol, Dehydration, Prior heat illness)	Heat Stroke First aid	Heat Exhaustion First aid	Heat Cramps First aid	Acclimatization to hot Environment	Heat stress Preventative Techniques
Learning Support	SMS											1	1	
	Informative Flyer / Poster	1	1	1	1	1	1	1	1	1	1	1	1	
	Job aids	1	1	1	1	1	1	1	1	1	1	1	1	
	Onsite simulation									1	1	1		
	Video Content									1	1	1		
Expected trainee's Action		To Recognize HRI sign & Symptom			To identify potential Risks		To be alert to risk factors and potential heat stress			To make a logical decision at a time of emergency			To preserve health and prevent a disease from occurring	To abide by preventive measures



Free Heat Illness Prevention Training



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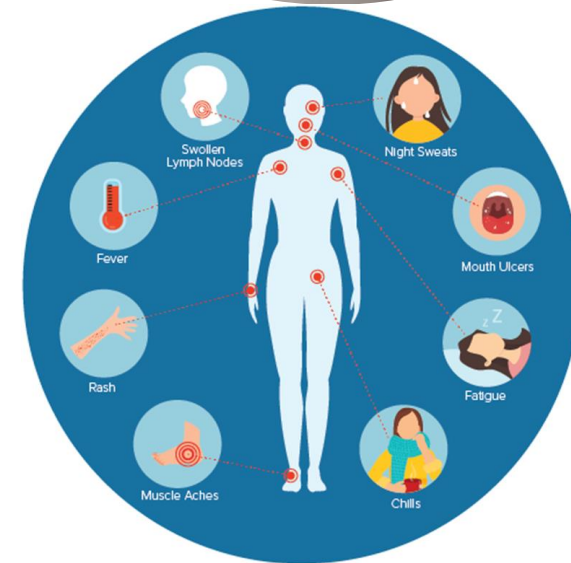
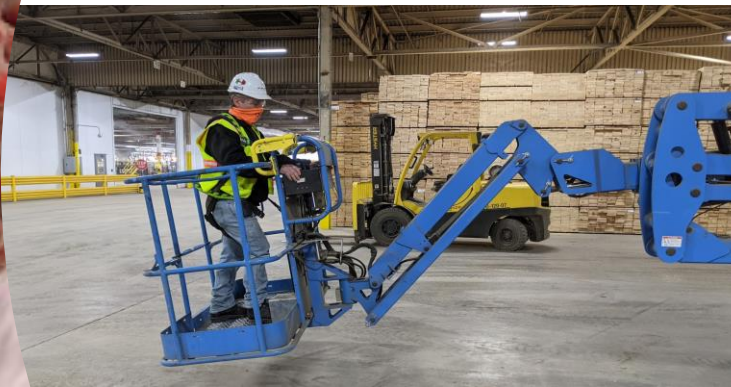
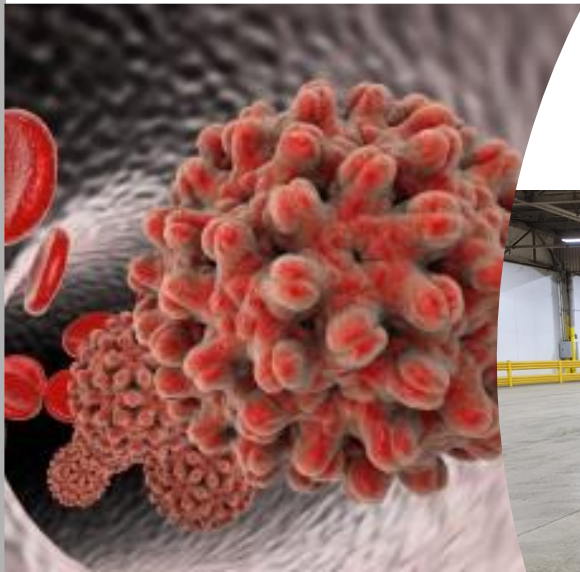
• **Infectious Diseases Training**

-American Rescue Plan Act of 2021

- **Airborne diseases** – Influenza, Covid, Tuberculosis
- **Bloodborne disease** – Hep B/C, HIV
- **Waterborne disease** – Legionella,
- **Touch related** – Norovirus, Tuberculosis, Hep A
- **Tick related** - Lyme Disease, Rocky Mountain Spotted fever
- **Mosquitos' diseases** – Malaria, Denque, West Nile, Zika



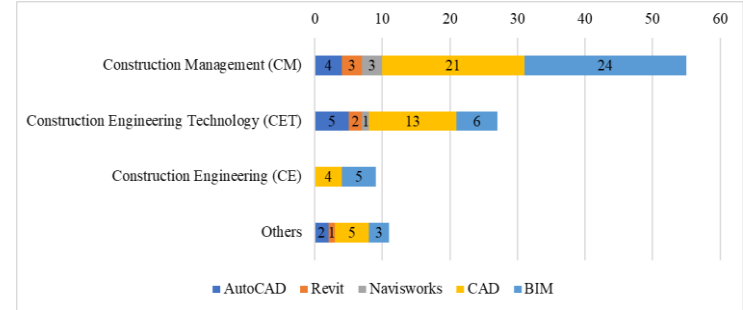
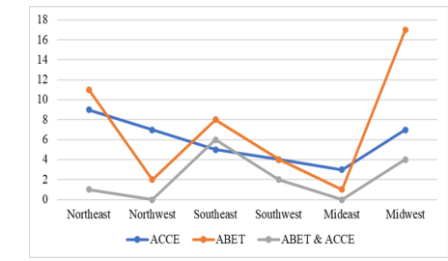
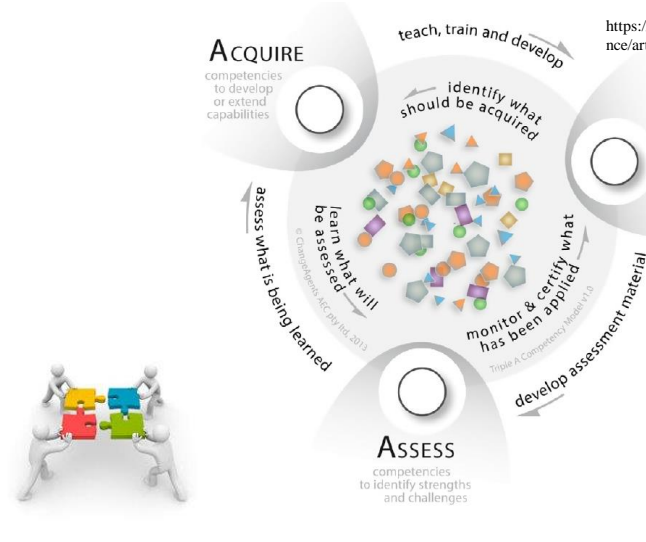
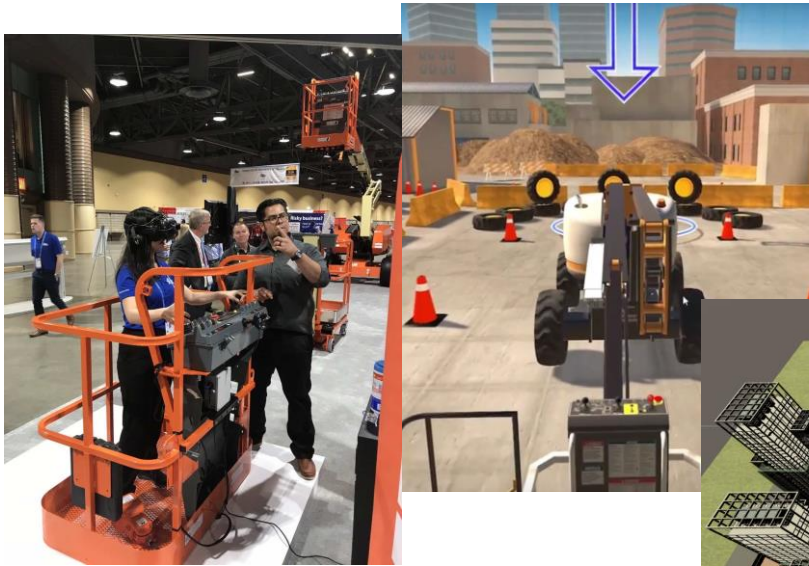
Free Workplace Infectious Control Training



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- Emerging Technologies
- Engineering Education



BIM

- B**: Better Analysis, Better Productivity, Sustainability, Better Documentation, Quality Control, VDC, Computation, Improves Design, Facilitates Innovation, 3D, 4D, 5D, ..., Systems Coordination, BSA, Design Options, Improves Safety, Improves The Work - Work The Plan
- I**: Improves Visualization / Understanding, Improves Certainty / Accuracy, Project Database, Material Tracking, Engages Client(s), Model Based Estimating, L.O.D., Improves Performance, Simulation of Work (4D), Improves Schedule, Use Downstream with Facilities Management, Efficient Layout, Logistics Planning, Overall Cost Savings, Plan The Work - Work The Plan
- M**: More Prefabrication, Reduce RFIs / C.O., Reduce Waste, Improves Performance, Simulation of Work (4D), Improves Schedule, Use Downstream with Facilities Management, Efficient Layout, Logistics Planning, Overall Cost Savings, Plan The Work - Work The Plan



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