**Abstract #: 313** **Presented by: Brian Hauck, BS, Graduate Student**

***Evaluation of Heat Stress Level as a Modifier for Injury and Incident Rates During An Industrial Construction Project***

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**Keywords:** Heat Stress Level, Occupational Safety and Health

**Objective:** The objective of this study was to explore relationships between outdoor environmental temperatures and the total reported incident and injury cases over a 20-month period (Phase 1a) of a large industrial construction project located in Tampa, FL.

**Methods:** The effects of heat stress levels were used as a modifier of incident and injury rates. The working hypothesis is that incidents and injury rates will show a marked increase with the changes in WBGT. Occupational health data consisting of incident, injury and illness records, total man hours was obtained from Walbridge.

**Results:** It was discovered that around a WBGT of 25°C the rate of incidences observed appears to increase (p= 0.08). The findings of this study with a p-value = 0.08 were approaching statistical significance (p-value < 0.05).

**Conclusion:** Although the results of this study did not achieve statistical significance, the resultant apparent increase in incidences at a WBGT around 25°C, is consistent and within close proximity to Ramsey's and Morabito's findings. While heat stress prevention should be an on-going practice during construction activities, careful consideration and a heightened heat stress prevention awareness and policy program should be implemented as temperatures approach a WGBT of 25°C.

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**Abstract #: 314** **Presented by: Melissa Hay, Graduate Student**

***Noise Exposure in Medical Helicopter Flights***

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**Keywords:** helicopter, noise, exposure, medical

**Objective:** The dual purpose of this study is to measure the noise exposure of pilots, nurses and paramedics in medical helicopter flights and assess the hearing protection that is currently used. If the measurements are found to be above the OSHA PEL we will recommend protective measures or additional protection to reduce the risks of hearing loss in the personnel.

**Methods:** We are hoping to use two types of noise monitoring: area and personal sampling as instructed in OSHA standard 1910.95. Area meters will be used to measure the cabin noise level of the helicopter and determine if the area samples exceed the thresholds for noise exposure. Traveling to the location of the patient, the rear of the helicopter will be measured, then, to preserve space, the investigator will move to the front of the helicopter for the return flight to the hospital. During the flight we will observe the usage of helmets, headphones and earplugs by the medical personnel. Monitoring the rear of the helicopter will also allow us to calculate the exposure to the patient to evaluate if they are in any danger of hearing losses, specifically neonates. We are not planning on attaching monitors to any patients, but possibly placing them in the general area to monitor the noise levels. We also will use Quest 300 Dosimetry meters for personal sampling devices for the pilot, nurse and paramedic during transit to evaluate their individual exposures. These personal monitors from the personnel will be clipped to the collar of the person's shirt and should not affect their work performance. We will place the monitor before boarding the helicopter and remove it after we are back in the hospital.

**Results:** TBD

**Conclusion:** TBD

**Research supported by:** USF Sunshine ERC

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