INTRODUCTION

- Americans, on average, spend 90% of their time indoors, highlighting the importance of human-building interaction.
- Previous research has shown negative association with light in indoor environments and stress levels.
- By analyzing human interactions and physiological conditions associated with specific light environments, it is possible to discover ways to build workspaces that boost productivity and overall happiness of workers.

OBJECTIVE

- **Dr. Becerik-Gerber’s research** at i-Lab focuses on studying human-building interaction with user-centered environments.
- **Vital Impact:** Human-centered, responsive buildings can address user’s needs in numerous environments, such as office spaces and hospitals.

- **Objective of experiment:** To analyze how light elements in an indoor environment affect a person’s physiological conditions and performance from stress recovery.
- **Significance:** This study’s outcomes can offer guidelines for optimizing lighting conditions to enhance office workers’ performance and well-being.

EXPERIMENT

- **PsychoPy**: Utilization and creation of an experiment using PsychoPy

**Baseline Phase**
- Baseline physiological condition

**Stressor Phase**
- Participants completed two stress induction tasks

**Restoration Phase**
- Ten minutes rest under a lighting condition

**Subjective Questionnaire**
- Cognitive Performance: Participants completed same cognitive performance tests

RESULTS

- **Electrodermal Activity**
  - No Change
  - 6500 K
  - 3000 K

- **Memory Test**
  - No Change
  - 6500 K
  - 3000 K

- **Attention Test**
  - No Change
  - 6500 K
  - 3000 K

SKILLS

- **Technical:** Utilization and creation of an experiment using PsychoPy
- **Research:** Organizing, planning, and scheduling an experiment and analyzing acquired statistics/data
- **Communication:** Research participation interaction
- **Contribution:** Teach high school students about the process of research

NEXT STEPS

- **Continue** to challenge myself with difficult courses to explore the various fields in STEM
- **Utilize** my skills to engineer programs, systems, and devices to make an impact in people’s lives

**Advice for future SHINE students:**
- Continue to expand out of the STEM boundaries and to pursue STEM challenges
- Avoid setting limits on what you can accomplish

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