

# Cultivating Tomorrow's Engineers through the Entertainment & Hospitality Landscape | AWARD #2115331

PI: Emma Regentova (UNLV), email: [emma.regentova@unlv.edu](mailto:emma.regentova@unlv.edu)

Co-PIs: Venkatesan Muthukumar (UNLV), Si-Jung Kim (UNLV), Jonathan Hilpert (UNLV).

Community Partner: Anna Radef (Clark County School District), email: [radefal@nv.ccsd.net](mailto:radefal@nv.ccsd.net)

Project website link: <https://stemlab.sites.unlv.edu/>

## Project Description

Intensive 3-week summer program for engaging middle school students of levels 6,7 and 8 into informal and formal STEM learning through demonstration and implementation of fun engineering projects in entertainment and hospitality (Vegas STEM Lab).

## Key Achievements

- Developed an intensive 3-week summer STEM experience with alternating learning modes and activities.
- Studied burgeoning STEM identity through 5 constructs of Dynamic Systems Model of Role Identity: Ontological & Epistemological Beliefs, Purpose and Goals, Emotion, Self-Perceptions & Definitions, Perceived Action Possibilities.
- Broader impact: Validated approach to demonstrate the ubiquity of engineering methods and foster STEM learning. Identified activities leading to the highest levels of identity development.

## Audience & Settings

**Audience:** 70 Middle school students of grades 6,7, and 8 of Clark County School District.

**Disciplinary area:** General STEM with the focus on entertainment and hospitality engineering.

**Learning environment:** Field trips to industry sites, interviews of industry and academia professionals, classroom interactive and team learning, variety of design tools: CAD, coding, sensors, microcontrollers, motors, robots, drones, design instruments and demo projects. 18 Undergraduate and graduate student and faculty mentors of different age, gender, ethnicity and race.

## Access and Inclusion

Targeted schools with majority of underrepresented groups.

- 1st Year: 18% female, 2% non-binary, 19 % Black, 19% Hispanic, 52% White.
- 2<sup>nd</sup> year: 38% Female, 29 % Asian, 20 % Black, 29 % Hispanic, 1% multiracial and non-Hispanic, 21% white,

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Year 1 Youtube video (short):  
<https://www.youtube.com/watch?v=KSvEksxHpdc>

Year 2 youtube video (short):  
<https://youtu.be/nJ1AqeggDlk>