

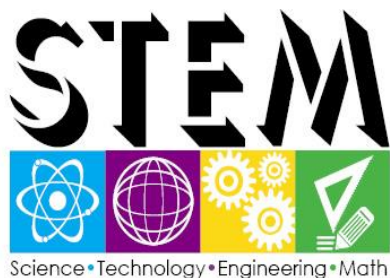


# Bridge the Gap

## with Gumdrops

Amy L. Zimmerman, P.E.

Corrinne M. Lochtefeld, P.E.



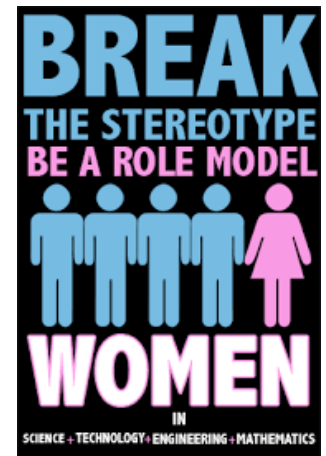
# Facts about Women in STEM

- **10%** of parents encourage their daughters to try engineering
- **66%** of 4<sup>th</sup> grade girls report they like science and math BUT..
- **18%** of engineering majors are female
- **80%** of jobs in the next decade will be technology based with STEM job growth outpacing the rest by **300%!**

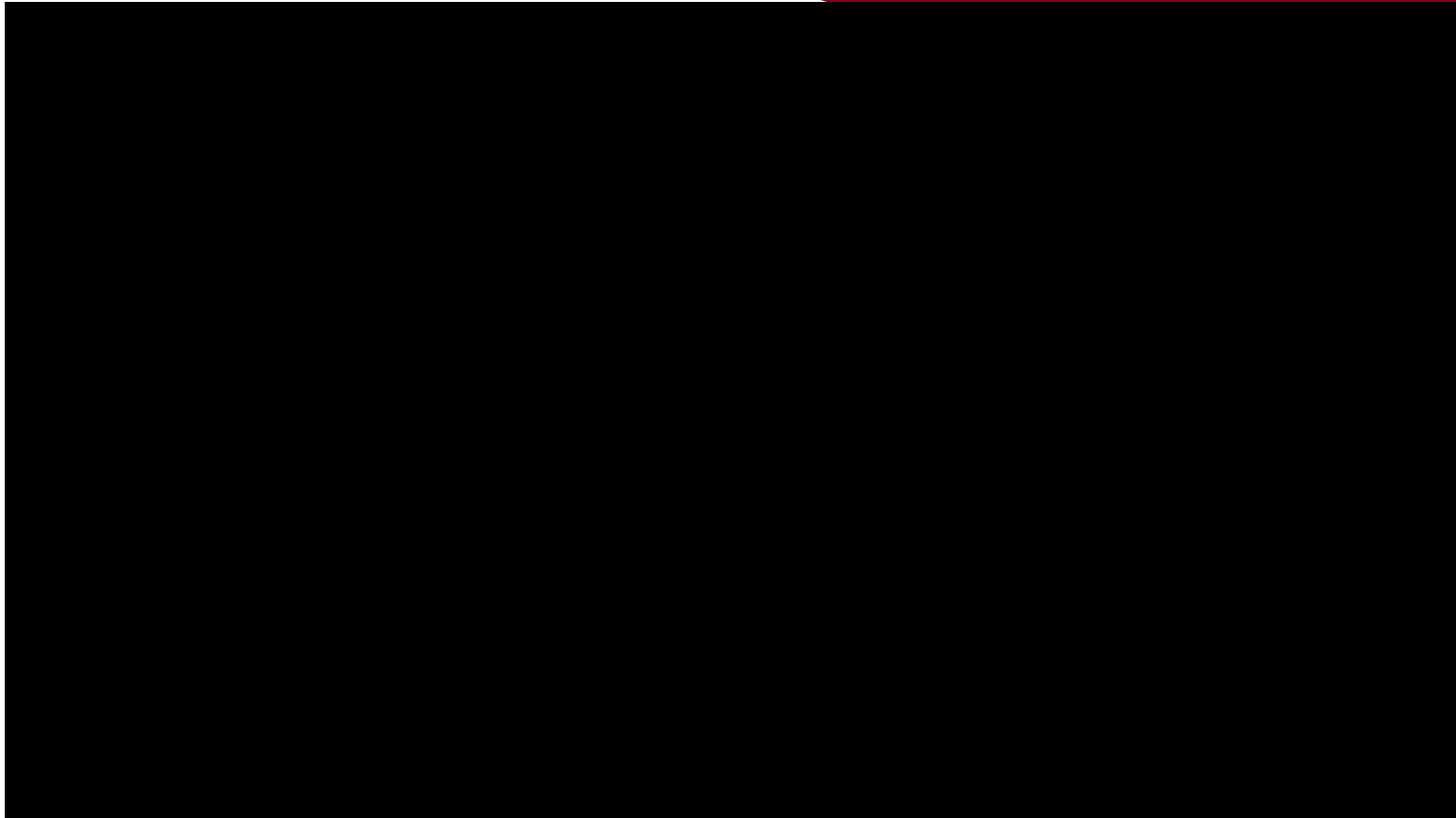


# Women in Engineering

- Our experience
  - 1 of 4 girls in college classes
  - 2003-2013, 17.2%-19.2% women in engineering
  - 2014 **39,690** Females graduated with Engineering Degrees, compared to **164,488** males
  - Singular woman at professional meetings
  - Use it as motivation, not a deterrent



# What Do Civil Engineers Do?

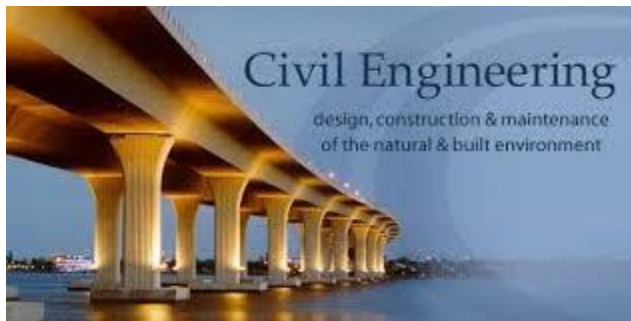


# Where Did We Begin?

- The University of Toledo
  - Seven Accredited B.S. Engineering Programs
  - Mandatory Cooperative Education Program
- Started in different Majors
- Civil Engineering



**COLLEGE OF ENGINEERING**  
THE UNIVERSITY OF TOLEDO



# What do Civil Engineers Do?



## Disciplines

- Transportation
- Structural
- Site Development
- Environmental/Water
- Construction

# What Do We Do? Transportation Engineering

## Roadway Design

- Highway Design
- Urban Streets
- Intersection Improvements
- Resurfacing
- Highway Interchanges
- Bridge approaches



## Traffic Design

- Signal Design and Timing
- Sign Design
- Pavement Markings
- Traffic Impact Studies
- Safety Studies





# Activity Time

## Basic Bridges



Steel Truss Bridge



Log Bridge



Suspension Bridge



Cantilever Bridge

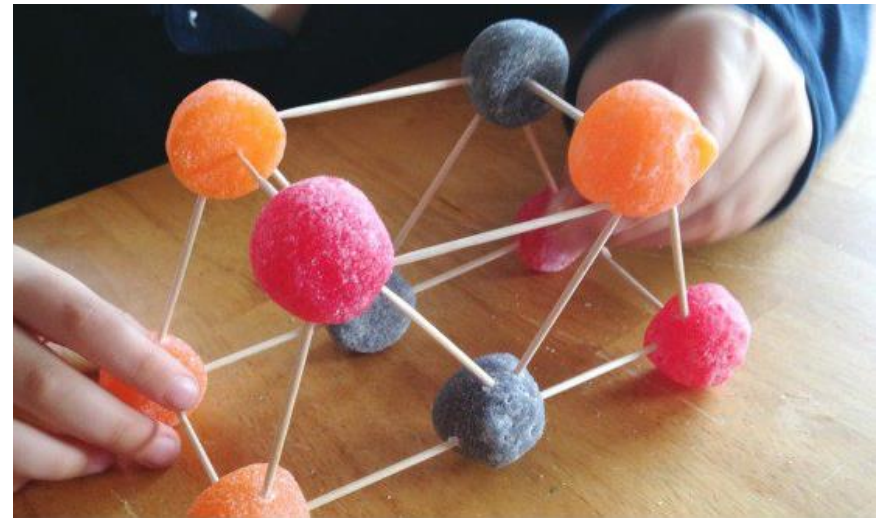
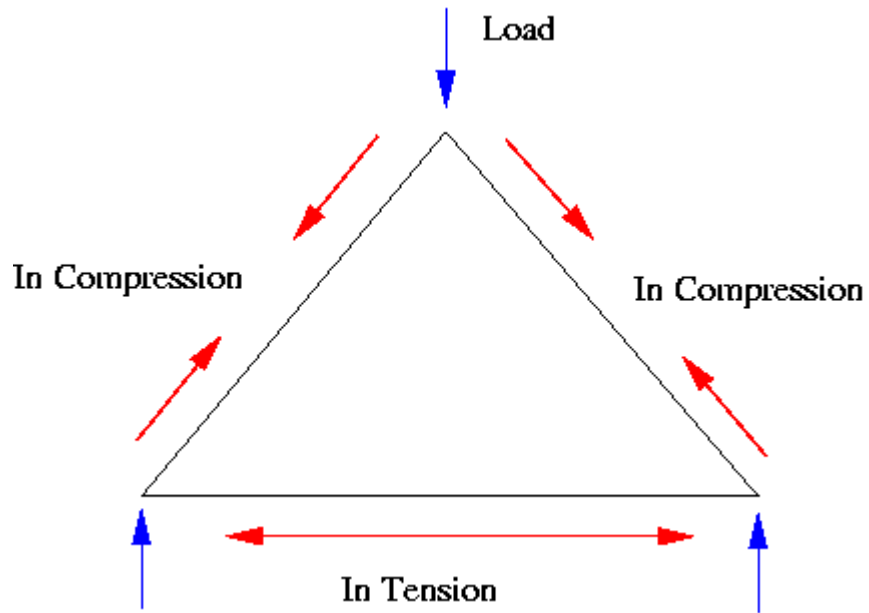


Draw Bridge



# Activity Time

## Strong Shapes



# Activity Time

Goal: Create a bridge that can span the gap and can hold the most weight

Supplies:

- 30 Sticks
- 50 Gumdrops
- Pennies to test the weight

