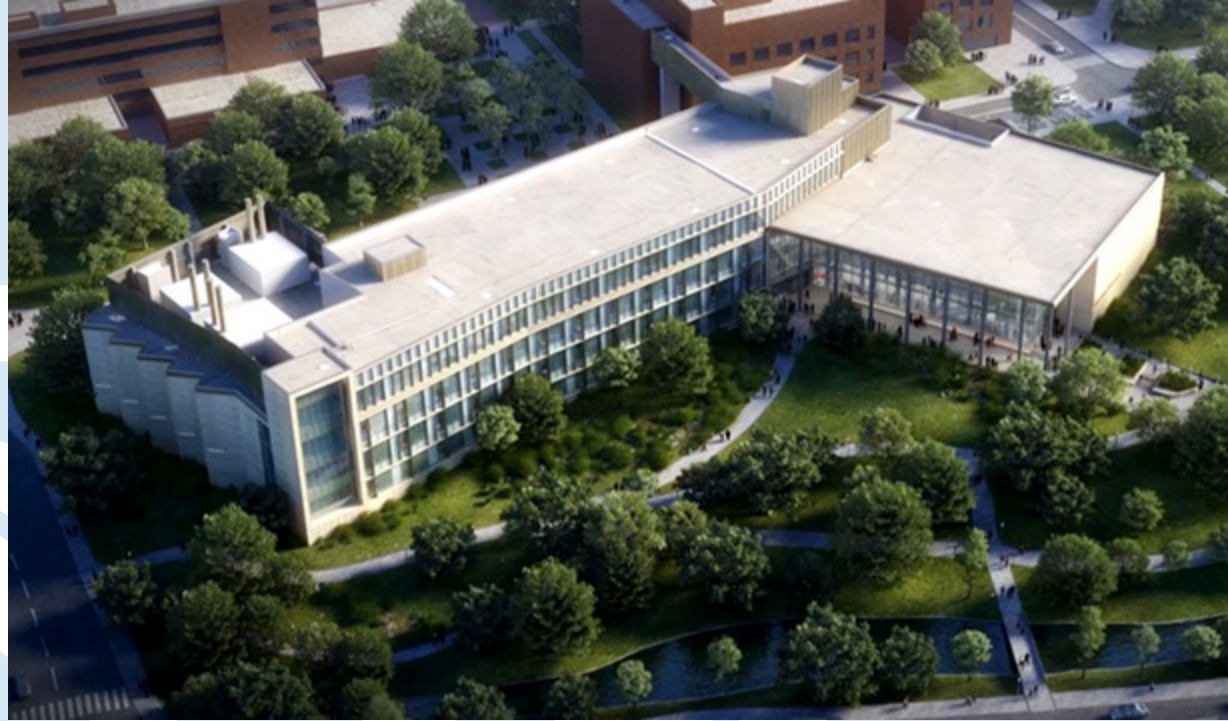# Teamwork Evaluation 2.0 in Engineering Problem Solving

Assessing Teamwork at UTA

Kendra L. Wallis, PhD.
Assistant Professor of Instruction

Introduction

Covid-19 UTA CommunitySupport

April 2020

Importance of Assessing Teamwork

- **Employers value teamwork skills**
- **Engineers work in teams**
- **Develop teamwork skills in college**
- **Assessing teamwork is challenging**

Defining a Team

Teams are composed of individuals who:

- have a shared collective identity

- have common goals

- are interdependent in terms of their assigned tasks or outcomes

- have distinctive roles within the team

- are part of a larger organizational context that influences their work and that they in turn can influence

Methods and Materials

The Students

- Engineering Problem Solving Course

- Freshman level, high-enrollment

- Team project

- 3-member teams

- Voluntary self and peer assessment

The Survey – 1.0

Based on AAC&U VALUE Rubric

- Spring 2019: ~500 students
- 5 Domains
- Ratings from 1 to 4 correspond to year in school, i.e., 1 = Freshman, 4 = Senior
- Averages 3.5 – 4 indicate senior-level work
- Question validity of assessment

The Survey – 2.0

TeamUP Rubric

- Fall 2019: ~900 responses;195 3-member teams

- 5 Domains: 7 questions each

- Color scale instead of points

  - Green = exceeds minimum expectations

  - Yellow = meets minimum expectations

  - Amber = does not meet minimum expectations

  - Red = unacceptable behavior

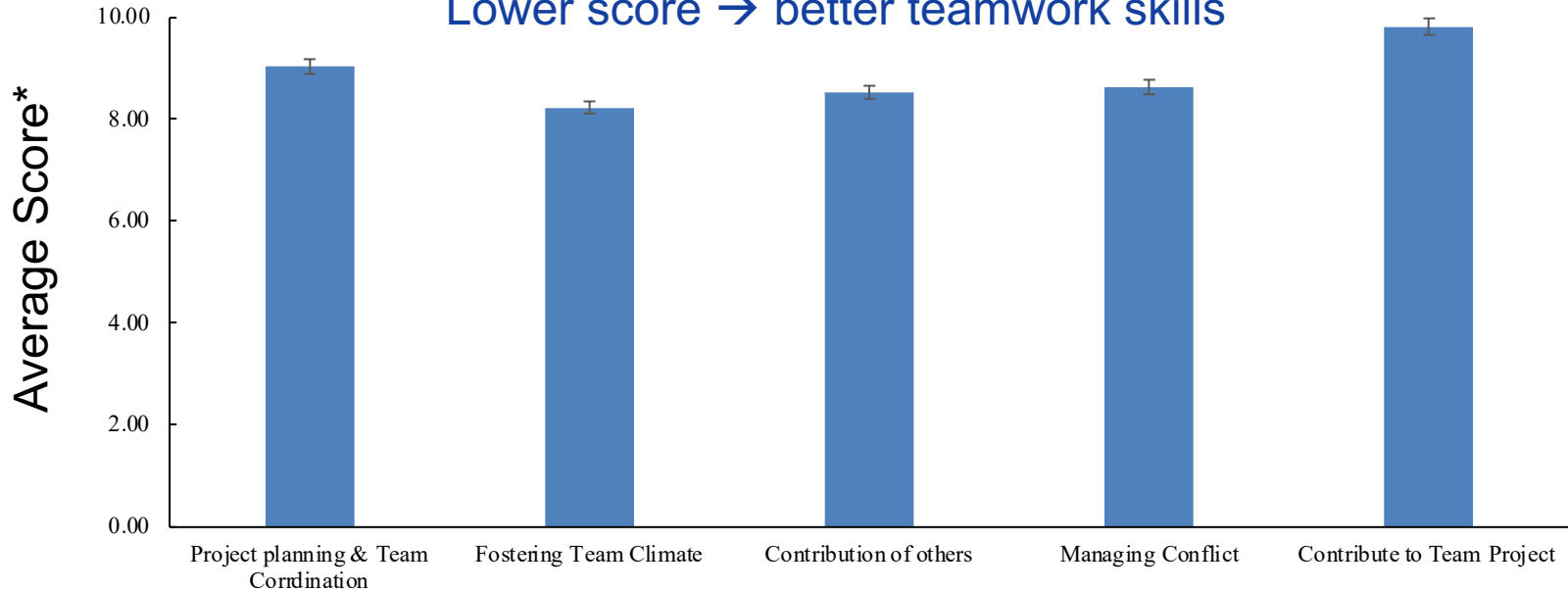- Reduce tendency to rate all 1's

Results

All Teamwork Skills

Green (meets expectations) = 1; Red (unacceptable behavior) =4
7 Questions per domain (min = 7; max = 28)

Project Planning & Team Coordination	9.04
Fostering Team Climate	8.24
Facilitating Contribution of Others	8.54
Managing Conflict	8.64
Contributing to Team Project	9.82

Teamwork Skills by Team Gender Composition

Green (meets expectations) = 1; Red (unacceptable behavior) =4
Average over 5 domains (min = 36; max = 144)

All male	43.93
Two males, one female	53.48
Two Females, one male	43.05
All female	43.22

Teamwork Skills by Gender Composition

Average Scores for Teams of 3
Lower score → better teamwork skills
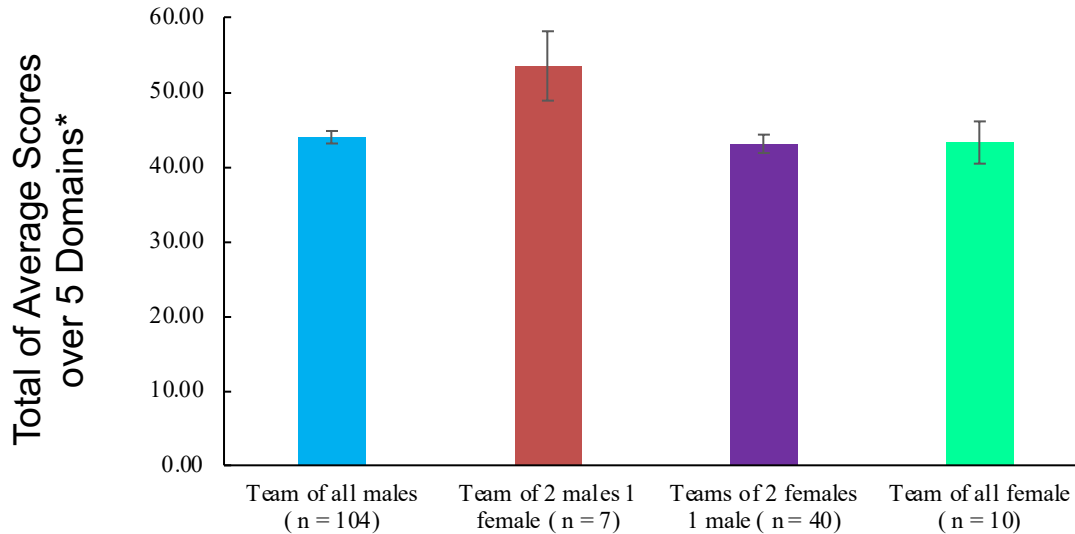
*Green (meets expectations) = 1; Red (needs to change unacceptable behavior) =4
7 Questions per domain * 5 domains (min = 36; max = 144)

Discussion

Good Teamwork Skills

- Assessment of teamwork skills is difficult
- TeamUP has psychometric validation
- Color scale may increase integrity
- Students believe they are good team mates
- Gender composition seems relatively unimportant except for 2 males, 1 female

Conclusions

Assessment of Teamwork Skills

- Assessment of teamwork skills continues

- Validity of the method still being investigated

- Development of teamwork skills should be intentional

- Gender composition should avoid 1 female with more than 1 male

Future Work

Future Work

Improve TeamUP

- Reduce number of questions

- Maintain color scale

- Look for other variables that might contribute