**Inclusive Engineering for P12 Students: Best Practices**

**Collaboration vs. Competition**
Competitions can be exciting ways to get students to do their best. However, they may discourage students who don’t win. Some competition can be good, but make sure to have opportunities for classes and teams to collaborate and show that everyone’s success is valued and important.

**Context Matters**
Choosing authentic contexts that demonstrate how engineering solutions help society, people, animals, etc., can motivate engagement and help students identify their goals and values within engineering.

**Culturally Relevant**
When considering the context of an engineering activity, think about the target students’ interests, the characteristics of their community, and the things they are familiar with, and integrate them into your activity.

**Design, Plan, Then Build**
Some students prefer to think before they build while others want to jump in and start constructing. Encourage good engineering practices by having all students design and plan before allowing them access to materials.

**Teaming**
Team composition can play a huge role in student engagement. Research shows that putting underrepresented individuals in the minority within a team can be disempowering. Try to create teams where students are equally represented.

**Universal Design for Learning**
Not everyone learns in the same ways. Utilize principles of Universal Design for Learning:
1. Provide multiple means of representation,
2. Provide multiple means of expression,
3. Provide multiple means for engagement.
Read more at www.cast.org

**Role Models**
Role models and mentors who share attributes with students can make a big difference in helping students imagine themselves as an engineer. YouTube clips or profiles of diverse engineers from the internet may help when your staffs’ profiles don’t match the students.
HERBIE HANCOCK
Jazz Musician
Electrical Engineer

DEBBIE STERLING
Goldiblox Founder
Design Engineer

JOHN HERRINGTON
1st Native American astronaut
Aeronautical Engineer

ALBA COLÓN
Lead Engineer - Chevy NASCAR
Mechanical Engineer

URSULA BURNS
CEO Xerox
Mechanical Engineer

LONNIE JOHNSON
Super Soaker inventor
Mech./Nuc. Engineer

Inclusive Engineering for P12 Students: Resources

Role Models

 Links

National Society of Black Engineers: nsbe.org
Society of Women Engineers: societyofwomenengineers.swe.org
Society of Hispanic Professional Engineers: shpe.org
American Indian Science and Engineering Society: aises.org
National Organization of Gay and Lesbian Scientists and Technical Professionals: noglstp.org