PHYSICS

& Today's Students

Physics is uniquely positioned to increase diversity in the STEM pipeline based on a national survey of 16,129 high school students in STEM classrooms. The survey was conducted by the **Student Research Foundation** in Fall 2017.

Of 11 STEM subjects, **only physics was equally likely to be a favorite** subject of students from groups historically underrepresented (URGs) and overrepresented (ORGs) in STEM.

This infographic looks closely at these "**Physics Fans**."

Small steps can help realize **the promise of diversity.**

Physics Fans Are Diverse

Cutting across gender, race & ethnicity

6%

of students chose **physics as a favorite subject regardless of gender, race, or ethnicity**

Call to Action: Sustain Your Success

Teachers are creating educational environments that make physics appealing to all students - URGs and ORGs alike.

Encourage Physics Fans to see that their favorite subject can be their life's work – and **change the face of physics**.

Challenge to Sustained Success: Aspirations

Fewer URGs **aspire to STEM careers**

Gender

- ♂ Male 63%
- ♀ Female 26%

Race/Ethnicity

- 62% Asian
- 50% White
- 44% Hispanic
- 35% African American

Call to Action: Empower & Inspire

Aspiration gaps narrow when students see examples of themselves reflected in the curriculum.

Consider your classroom examples of who physicists are and what physicists do!

AAPT's and APS's ***STEP UP 4 WOMEN*** campaign resources can expand your portfolio.

Challenge to Sustained Success: STEM Confidence

Fewer URGs have **high STEM confidence**

Gender

- ♂ 43% Males
- ♀ 26% Females

Race/Ethnicity

- 41% White
- 39% Asian
- 33% African American
- 31% Hispanic

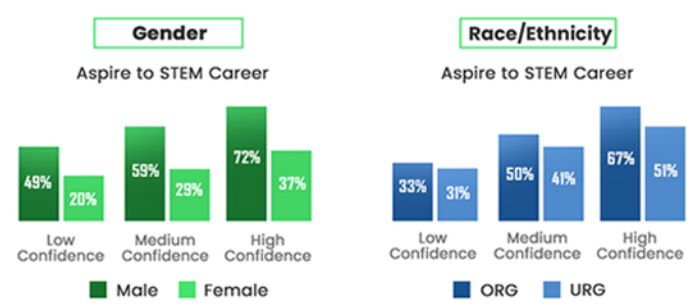
Call to Action: Build Confidence

Students with higher STEM confidence are more likely to aspire to STEM careers. **Change the face of physics by** closing STEM confidence gaps through:

- **Cultivating** growth mindsets among students.
- **Reminding** students of **past successes.**
- **Encouraging** persistence & progressions - e.g. advanced courses, competitions, and leadership.

Build Confidence Plus

At each level of STEM confidence, URGs - based on gender or race/ethnicity - less often aspire to STEM careers



Call to Action: Solutions

Gender differences disappear when we compare aspirations for STEM and health science careers *combined.*

Use interdisciplinary lessons to highlight the role of physics in health science. **AAPT** has resources to help you do so in the collections posted at **Compadre.org**!

For racial/ethnic URGs, the greatest STEM aspiration gap is among those with high STEM confidence. Because this gap is concentrated largely among African Americans (not shown), examples of physicists with whom they can identify may **boost aspirations**.

Small adaptations in your lessons today will **drastically change the face of physics tomorrow!**

AAPT American Association of Physics Teachers

STUDENT RESEARCH foundation

Groups historically underrepresented in STEM pathways are African Americans, Hispanics, and Native Americans. For methodological reasons, analyses of specific URG groups focus only on African Americans and Hispanics. However, aggregate comparisons of ORGs and URGs combine African Americans, Hispanics, and Native Americans in the URG group.