



SciGirls Strategies: How to Engage Girls in STEM

Produced By:



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Agenda

- SciGirls Overview
- Rationale - What the data shows
- Framing the *SciGirls Strategies*
- The *SciGirls Strategies*
- Additional Resources
- Questions



The Big Idea



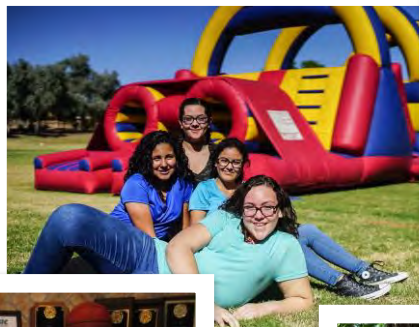
Media and education
that change how girls
see STEM and how the
world sees girls.

Our Approach

- On TV
 - national PBS Kids series
- Online
 - PBS Kids website with games and videos
- On the Ground
 - activities and professional development



On TV

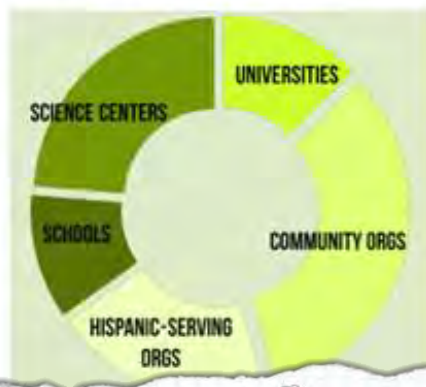


Online

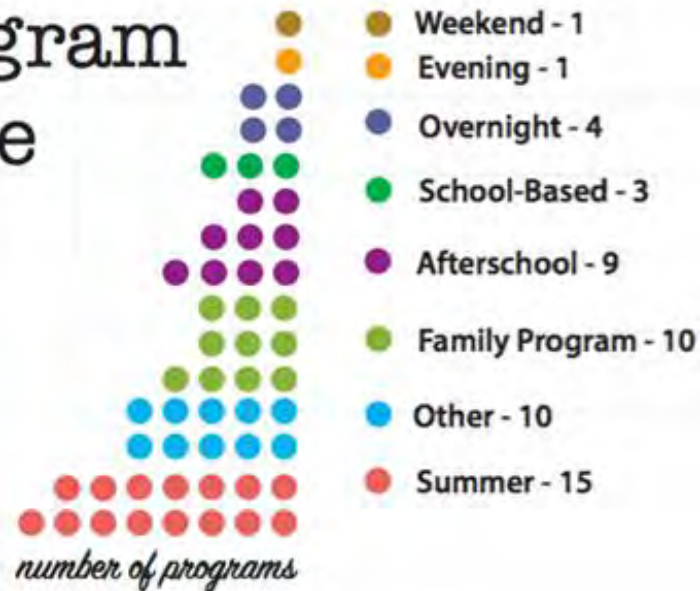


On The Ground

The national SciGirls CONNECT network of **girl-serving partner organizations** uses our bilingual resources to engage diverse girls in STEM, and connect girls and families with STEM professional role models.



Program Type



Rationale

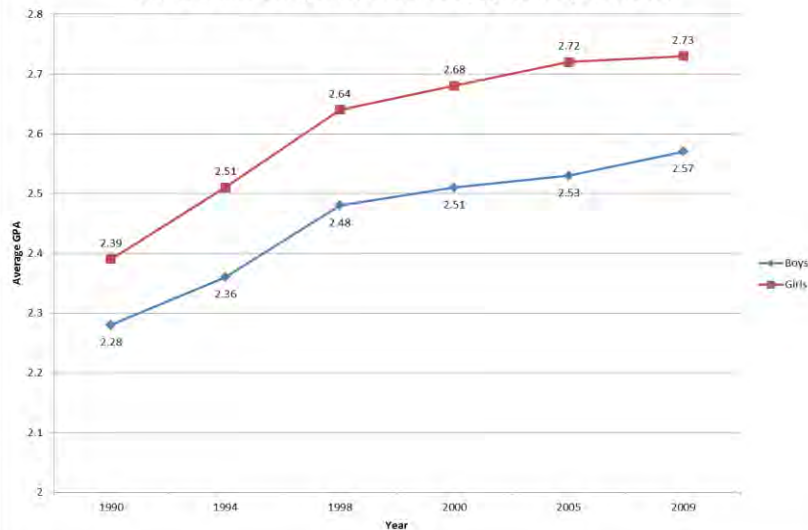
What the data shows

Let's look at the data for girls and women in STEM.

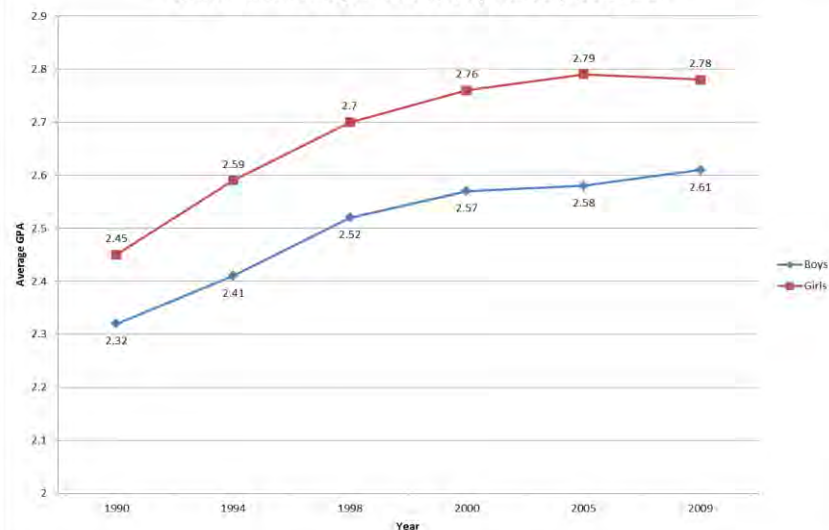
Rationale

GPA's in Math and Science

Grade Point Average in Mathematics, by Gender, 1990-2009

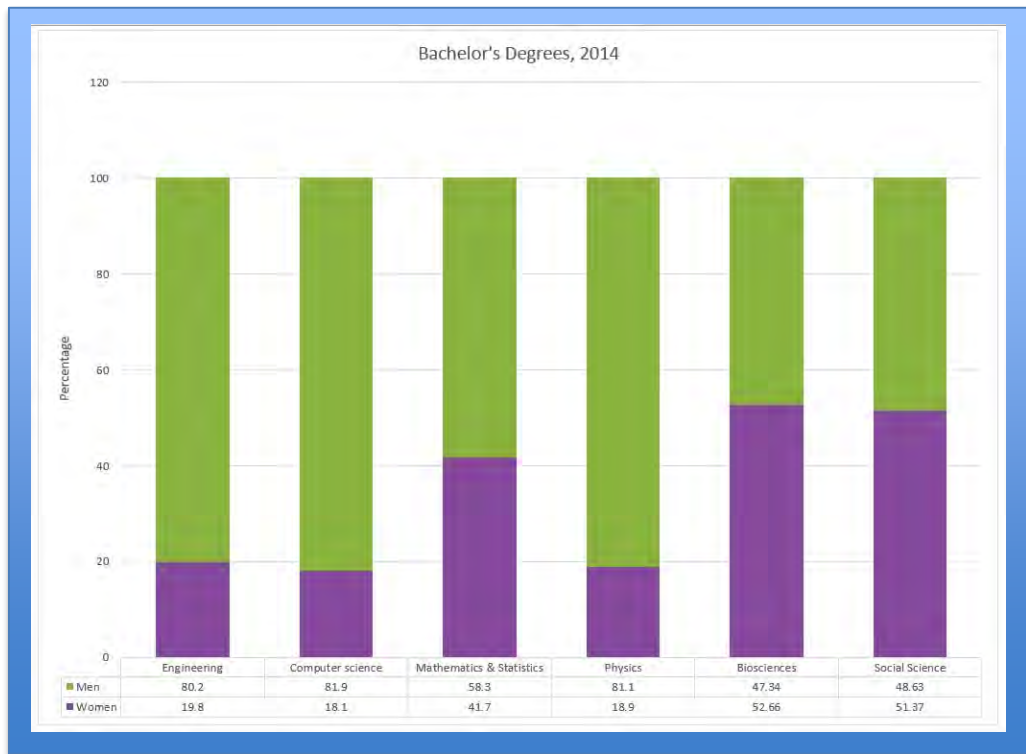


Grade Point Average in Science, by Gender, 1990-2009



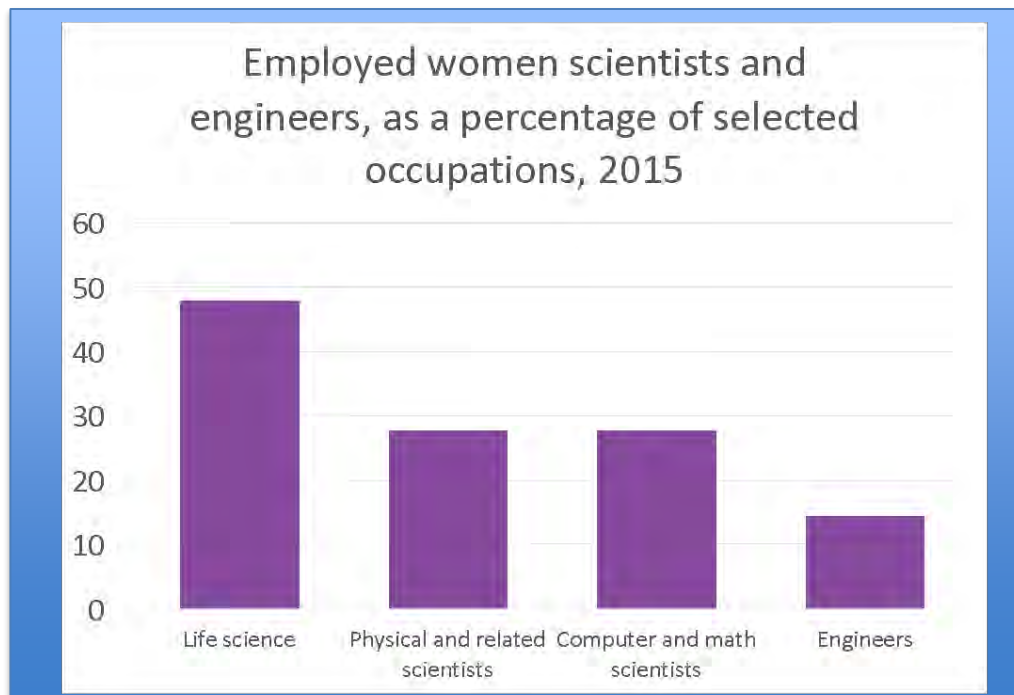
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, High School Transcript Study (HSTS), various years, 1990-2009.

Rationale



SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2014.

Rationale



SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2017.

Rationale

What does it all mean?

- Boys and girls do not display a significant difference in their **abilities** in STEM. The cause of the gender gap is social and environmental.
- Differences consistently appear in girls' **interest** and **confidence** in STEM subjects, starting at a very young age.
- These differences can be linked to a **negative self-perception**, enhanced by stereotypes.



The SciGirls Strategies

Fostering girls' STEM identity

The strategies are designed to instill confidence and persistence, and motivate girls to develop a **STEM identity**

STEM identity: refers to a person's sense of who they are, want to be, and what they believe they are capable of in relation to STEM.

I see myself as a science person!



Updating the Strategies

The process

- **Research:** Conducted extensive review of the literature focused on engaging girls in STEM, previous SciGirls Strategies, STEM identity, and culturally responsive teaching practices
- **Practice:** Informed by SciGirls educators' experiences and feedback via previous SciGirls project evaluations and pilot testing of updated Strategies



Framing the SciGirls Strategies

- *STEM for ALL* Learning Environment
- Culturally Responsive Teaching Strategies



STEM for All Learning Environment

- Inclusive learning environment that looks and feels inviting and allows girls to feel they belong
- Comfortable, personally meaningful, collegial, supportive and culturally responsive



Culturally Responsive Teaching

Lifelong process of using *cultural knowledge, prior experiences, and performance styles* of diverse students to make learning more appropriate and effective for students. (Gay, 2013)



Framing the SciGirls Strategies

STEM for all learning environment
and culturally responsive teaching
practices frame all of the *SciGirls*
Strategies.



SciGirls Strategies

1. Connect STEM experiences to girls' lives.



SciGirls Strategies

2. Support girls as they investigate questions and solve problems using STEM practices.



SciGirls Strategies

3. Empower girls to embrace struggle, overcome challenges, and increase self-confidence in STEM.



SciGirls Strategies

4. Encourage girls to identify and challenge STEM stereotypes.



SciGirls Strategies

5. Emphasize that STEM is collaborative, social, and community-oriented.



SciGirls Strategies

6. Provide opportunities for girls to interact with and learn from diverse STEM role models.



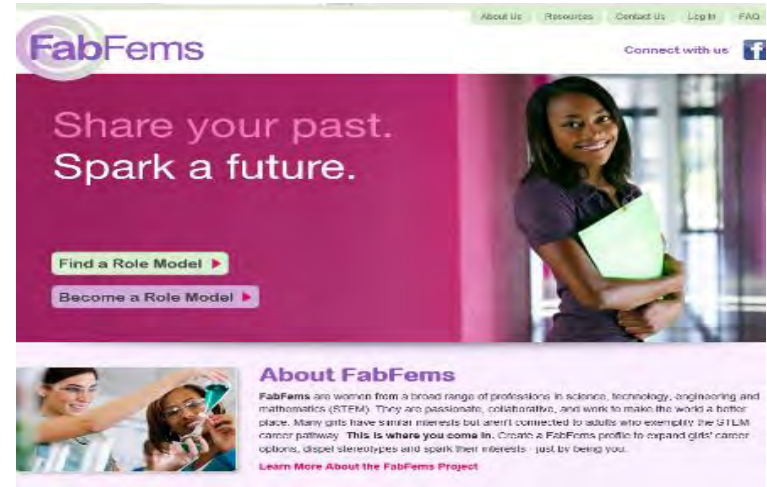
FabFems Website

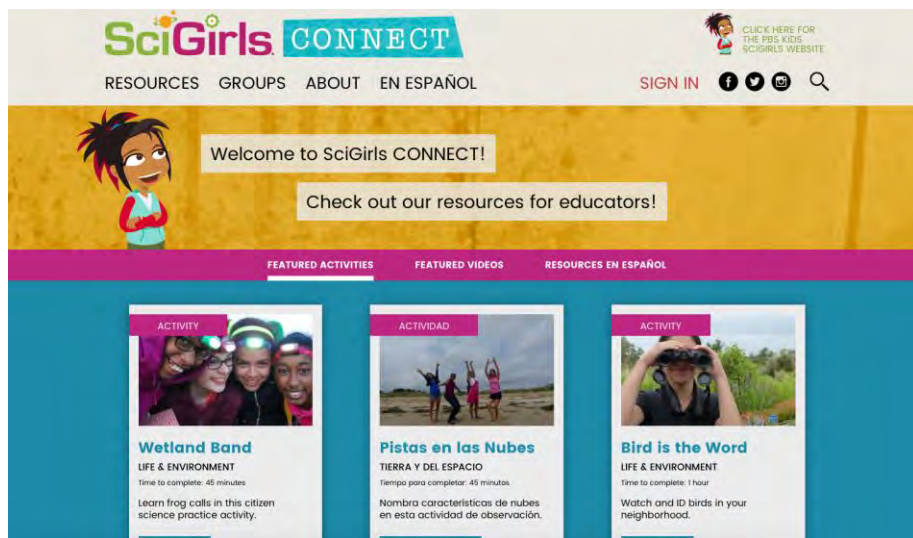
FabFems is an international, online, searchable directory of women STEM professionals interested in outreach to girls

Audience:

- Role Models
- Girl-Serving Programs
- Parents and Girls

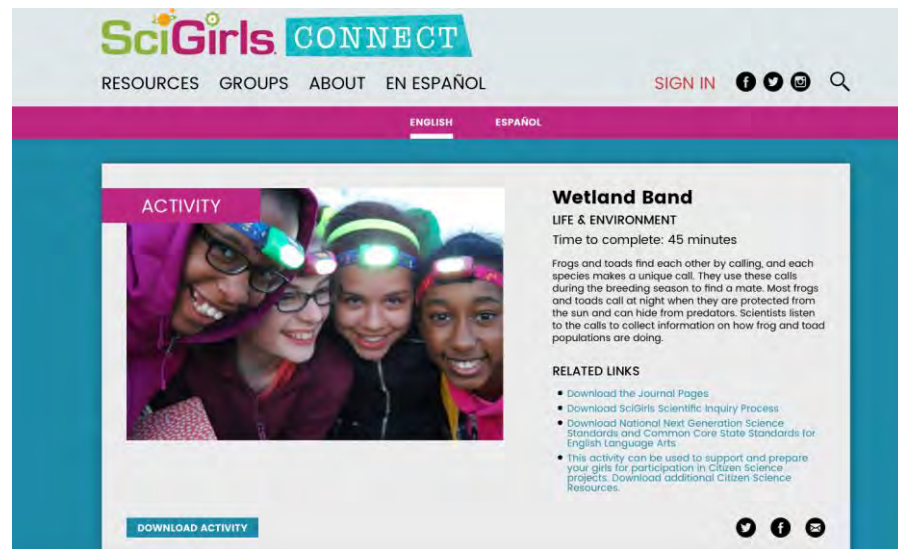
www.fabfems.org





Download videos, activities, and other resources to enhance your program!

Educator resources on
scigirlsconnect.org



Activity Guides



Bilingual resources for educators and families

- Engaging Latino families guide
- Family guide for engaging girls in STEM



Looking for more?

Questions?

SciGirls Activities, Videos, and more: scigirlsconnect.org



scigirlstv



@SciGirls



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