

---

---

# Diversity: What Works?

## K-12 Initiatives

---

---

***Cynthia Lanius***

Technology Integration Specialist  
Sinton ISD

Former Executive Director  
Center for Excellence and Equity in Education  
Rice University

Former High School Mathematics Teacher  
Milby High School

---

---

---

---

# Situation in K-12

- Fewer and fewer CS courses taught
  - Lack of qualified teachers
  - Diminished interest among students
  - Webmastery replacing CS
  - Computing is seen as business apps
- In the future, CS will become like engineering
  - Rarely taught on HS campuses
  - PR becomes an issue – Learn about CS?
  - Engineering way up for factory workers
  - First college course must be a welcome mat, not a filter



# Two K-12 Initiatives

Center for  
Excellence and Equity  
in Education



RICE  
UNIVERSITY



# TeacherTECH

Center for  
Excellence and Equity  
in Education



RICE  
UNIVERSITY



# CS-CAMP

Center for  
Excellence and Equity  
in Education



**RICE**  
UNIVERSITY

# TeacherTECH FACTS

---

- Originally called GirITECH
- Started in 1995 by CRPC
- Since then, hundreds of K-12 math & science teachers (20-40)/yr
- Scaled to Boston, Houston, Chicago, San Diego, Pittsburgh by EOT-PACI

Center for  
Excellence and Equity  
in Education



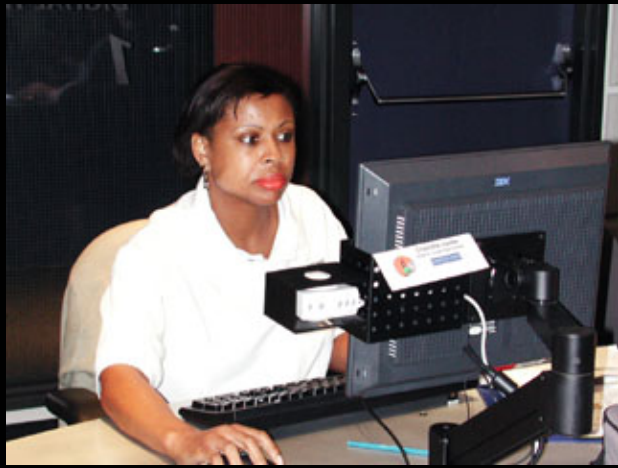
RICE  
UNIVERSITY

# TeacherTECH Goals

---

- Equip teachers with knowledge and strategies that will encourage all students' full participation in computing technologies.
- To enable teachers to effectively use and produce web resources that support student learning.





# The Carrot







While we have many people in there...



**Not easy, not most popular**

---

---

# Suggestion

---

---

- If you have teacher training, layer an equity piece on top
  - Make them aware of underrepresentation issues
  - Ask them to encourage girls' and minority's participation

Tell the “Jimmy” story

---

---

---

---

*Computer Science Computing and Mentoring Partnership*

# CS-CAMP



Center for  
Excellence and Equity  
in Education



# CS-CAMP Goals

---

- Prepare high school girls so they will succeed with confidence and enthusiasm in computer science.
- Increase participation and retention in pre-college science courses;
- Improve the climate and instructional experiences for girls in high school computer classes.

MY Pet Peeve

# CS-CAMP Description

---

Working with computer science teachers, students, and counselors from nine Houston ISD high schools to improve the quality of instruction and the numbers of females enrolled in computer science classes.

*facilitators*

*Enlist  
the  
girls*

*Team of six*



# Teachers as Facilitators



# Teachers as Facilitators



# Teachers as Facilitators





**Master Teachers**



# Master Teachers



# CS-CAMP Facts

---

- Camp lasts --two weeks, 6 hours/day
- First year, programming in Scheme
- 2<sup>nd</sup> year, a menu of “what is computer science?”
- By design, not one-to-one correspondence between girls and computers

Master Teachers

Programming  
Projects

Communication

Team Work

FUN!

“What is computing?” modules





