

Creating Pathways to STEM

Ujima (Collective Work and Responsibility)

GIRL (Girls in Robotics Leadership)

Project

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UC DAVIS
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Ujima GIRL/GIRL+ Collaborators



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Advisory Board



What is the Ujima GIRL Project?

Collaborative
visionary effort to
actively address
significant
underrepresentation
of Black women in
STEM.

Builds on,
modifies, and
extends
C-STEM's existing
GIRL/GIRL+
Camps.

One of the largest
rigorous longitudinal
social science
studies on pre-
college efforts to
broaden STEM
participation.

Goal

To expand to 24 districts across California in the next 2 years, nurturing nearly **2,000** African American/Black girls and college women as STEM leaders!

Ujima GIRL Project Overview



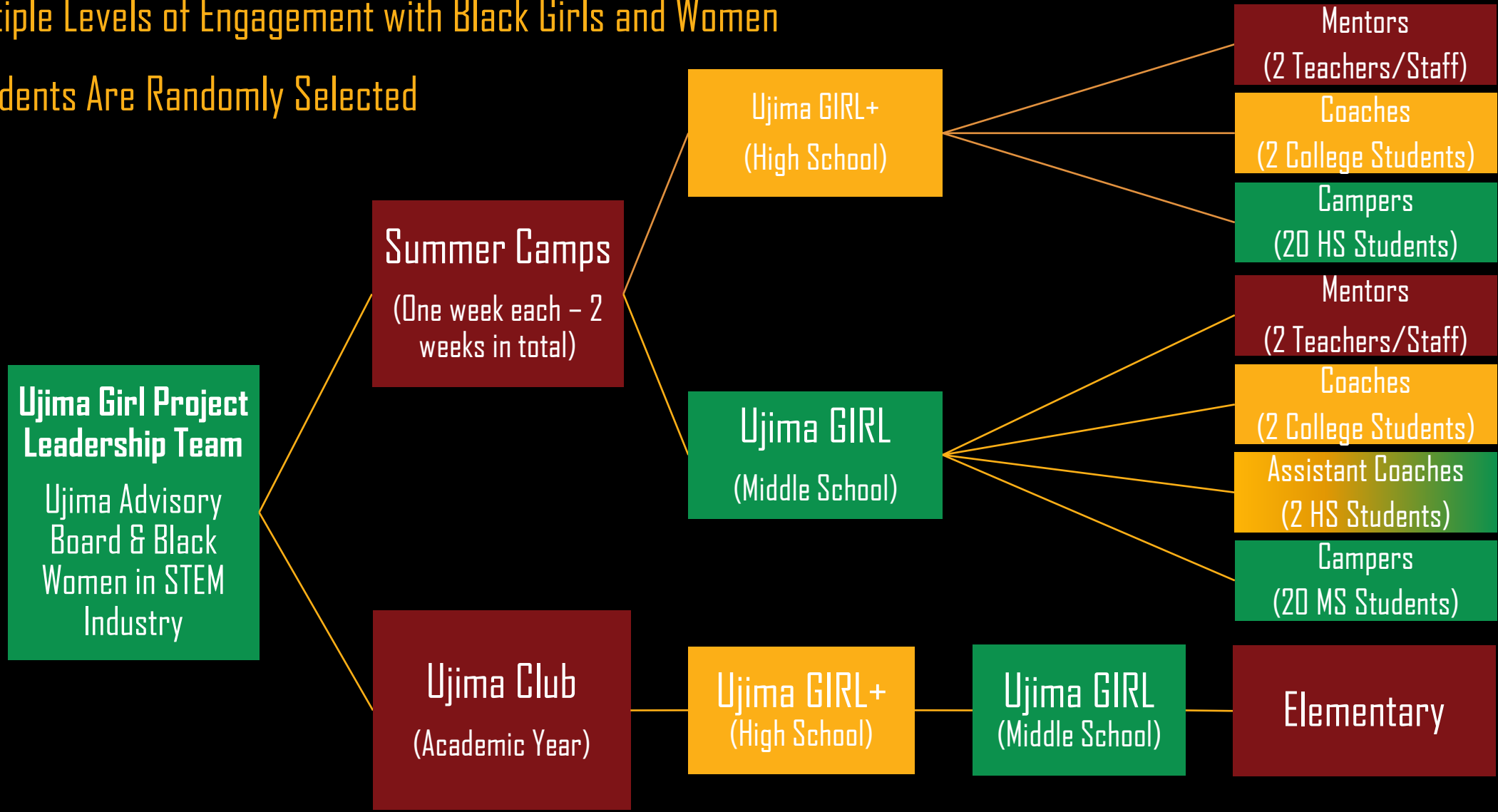
- Sensor-based robotics & physical computing principles & techniques
- Culturally-relevant mentoring
- Increasing self-confidence, engagement, and identity development
- Developing leadership skills
- Building a STEM pipeline
- UC Educational Preparation Program



Ujima GIRL Project Overview:

Multiple Levels of Engagement with Black Girls and Women

*Students Are Randomly Selected

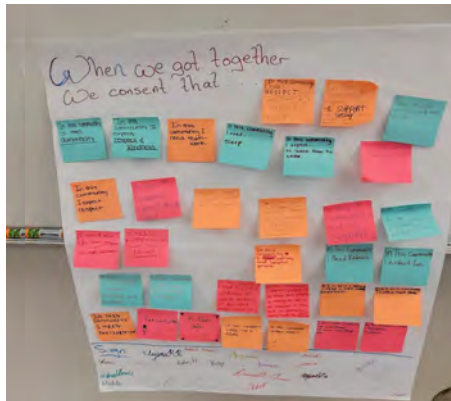


Ujima GIRL Clubs outreach to schools to build a self-sustaining mentoring pipeline

One Week Summer Camps (MS & HS)



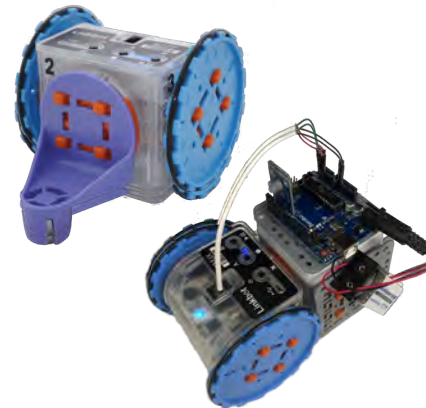
Career Readiness & Life Skills



Activities/Lessons

- Community Building
- Guest Speaker
- Local College Visit

Academics & Career Readiness



Coding/Robotics & Math

- (Software) Roboblocky.com
- (Hardware)
 - MS: Linkbot
 - HS: Linkbot + Arduino

Life Skills



Group Project

- Think of a problem in your community (or in the world) that technology may be able to solve
- Teamwork & Presentation
 - Short Video
 - Prototype

Ujima GIRL/GIRL+ Camps Summer 22' & 23'



2022 Sites (3): Stockton, Elk Grove, & Antioch
2023 Sites (5): Stockton, Sacramento, Antioch,
Antelope Valley, & Victor Valley

Ujima Day at UC Davis

- ❖ Ujima girls from all sites reunite
- ❖ Campus tour
- ❖ STEM lab visits
- ❖ Dining Hall
- ❖ Guest Speakers Chancellor May & LeShelle May

Project Model



Eligibility to participate in Ujima

- District-wide random selection of student participants
- All Black female students are eligible – no GPA requirement
- Students can participate in summer camp only once

Camp Details

- MS Camp: Rising 6th – 8th graders (1 week)
- HS Camp: Rising 9th – 12th graders (1 week)
- Camp hours: 8am-5pm (Staff) / 9am – 4:30pm (Students)

Post-Camp

- Ujima Girl participants attend Ujima Day at a University of California (UC) campus in their region
- Ujima Girl participants are encouraged to continue STEM activities and start a Ujima GIRL club during the academic year

Important

- Week Camp model must stay intact for research purposes
- Districts are encouraged to participate again in Summer 2025 for the next cohort
- This project is planting seeds. It is yours to build on!

C-STEM & School District/Org Collaboration



UCD C-STEM Responsibilities

Provide the following for students:

- ❖ 21 robots for Ujima GIRL and GIRL+ camp
- ❖ 21 Arduino Basic Kits for Ujima GIRL+ camp
- ❖ Recruit and hire college student coaches
- ❖ Coach training and materials
- ❖ Camp curriculum (including agenda, handouts and presentation files)
- ❖ Math and CS/STEAM curriculum during the summer and the academic year for Ujima Girls
- ❖ Pre and post assessments for camp participants
- ❖ Camp T-shirts
- ❖ Ujima GIRL/GIRL+ Community
- ❖ UC Educational Prep Program

School District/Org Responsibilities

- ❖ Complete Ujima GIRL/GIRL+ Camp MOU
- ❖ Share data for NSF research study
- ❖ Designate staff as Ujima GIRL Affiliate Director
- ❖ Host two one-week summer camps (one for MS & one for HS)
 - ❖ Provide facilities, computers, food, and supplies
 - ❖ Recruit and hire 1 -2 Teacher/Staff Mentors
 - ❖ Recruit students
 - ❖ Recruit 1 -2 Black female Scientists or Engineers as guest speakers
- ❖ Provide transportation and chaperones for Ujima Day at UC campus
- ❖ Nominate Ujima girls for UC Davis C-STEM Girls in Leadership Awards
- ❖ Facilitate Ujima club(s) and support Ujima girls throughout the summer & academic year

Estimated Cost Involved for School Districts/Orgs



Description	Note	Estimated Cost
Stipend for 2 USD Teachers/Staff for 2 Weeks	\$52/hr * 8 Hours * 10 days * 2 Teachers	\$8,320
Stipend for 2 USD Teachers/Staff to participate in 8 hours of training before the camp starts + mileage	\$52/hr*8 hours * 2 Teachers	\$832 + mileage to training site
Lunch & Snack for 20 students, 2 teachers, 2 colleges coaches from M-F for 2 weeks	\$20/day/person (\$15 lunch+ \$5 snacks) * 24ppl *10 days	\$4,800
Camp supplies, Photocopies, signage, misc.		\$550
Transportation to take 40 students 2 teachers/staff, 2 colleges coaches for college visit	\$1500 estimate (Transportation & lunch for 44 ppl)	\$1500
Stipend for 2 USD Teachers/Staff to supervise college visit	\$52/hr * 8 Hours * 2 Teachers	\$832
	ESTIMATED Total	\$16,834 + mileage

Ujima Girls in Robotics Leadership (GIRL) Project Contact Information

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