

# Calculus Roundtable

## Impact Analysis

2017-18



*Calculating a better future for students*

## Student Impact Analysis

# Our Mission

To promote math and science skills for students; particularly for students of color.

Science and math cannot be limited to textbooks. For today's student to fully embrace the hard sciences many need a soft on ramp. Calculus Roundtable teaches to students' passions and explicitly connects social emotional skills to academic instruction. The glue we use is experiential learning.

Our coaches, mentors and teachers who have completed our professional development include critical thinking, empathy, techniques for establishing positive relationships, making responsible decisions and managing emotions.

Sara Kneuve, Glendale Unified's Student Services Coordinator, said, "DORS helps us center on the learning – both at the academic and social emotional levels, in tandem."

As students complete activities they receive **DORS badges** as an indicator of their accomplishment, skill, quality, or interest; building confidence and proficiency along the the way.

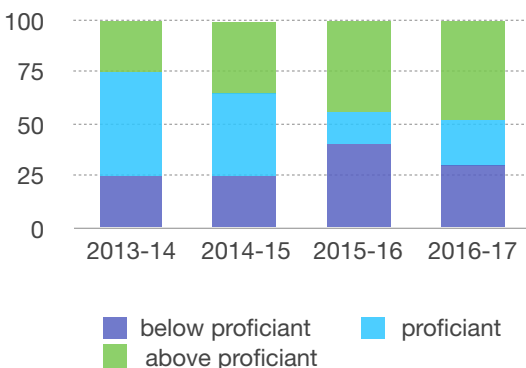


**Cory P**  
It's cool to make something that works from scratch.



**Katlania R**  
I learned that science is nowhere near as scary as I thought

State Scores in Math Proficiency



Over time students in our program have consistently increased in their, end of year Math Proficiency scores.

“With Calculus Roundtable, our students grew in their understanding and comprehension of math and science.”

- Ida Oberman  
School Director



# Students Served

	2013-14	2014-15	2015-16	2016-17
Asian		10	14	12
African-American	5	56	273	52
Hispanic	30	2,030	853	867
English learner	27	1,738	862	652
Special-education	200	212	190	
Poverty	185	2,258	1,159	856
White		50	67	25
<b>Total</b>	<b>447</b>	<b>6,354</b>	<b>3,418</b>	<b>2,464</b>
<b>Total (including White)</b>				<b>12,683</b>



**Carmen R**  
It's easy to learn statistics when you learn like this.

# Timeline

Calculus Roundtable invited to join President Obama's my brothers keeper task force



Congresswoman Barbara Lee awards Calculus Roundtable the Congressional Special Recognition award for: **"Promoting STEM in Communities of Color"**

Student from original pilot received 4 year college scholarship in STEM related field



Calculus Roundtable works with a cohort of 22 students and San Jose library staff to build TeenHQ, STEM Maker's Space for kids



Invited to Atlanta's STEM in the park sponsored by Rev Abernathy and John Lewis's congressional office



First CR Fellow, Marcus placed in an urban middle school. He's now a full time science teacher in Oakland.

Calculus Roundtable launches the Digital One Room Schoolhouse, on-line STEM program



2013.

2014

2015

2016

2017

Calculus Roundtable conducts countywide trainings on infusing technology in special education curriculum



Calculus Roundtable partners with Amazon to train math teachers and provide curriculum research about what works in urban districts like LA and Oakland, California



Calculus Roundtable named a "Promising Practice" by Ed-Trust West's award winning report, "Black Minds Matter"



Congressman Mark DeSaulnier tweets our praise of our DORS after a visit to our program in Richmond

In conjunction with My Brothers Keeper, Calculus Roundtable launches first after school STEM program in Richmond, CA's Crescent Park Public Housing Community.

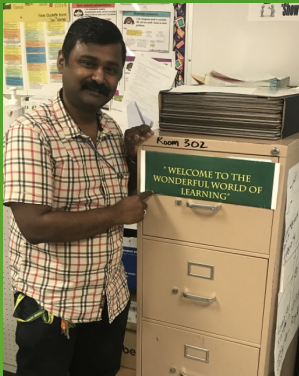


The West Contra Costa Public Education Fund becomes the Fiscal sponsor of Calculus Roundtable and the DORS project

# Recent milestones putting strategy in action

Moving more kids of color into higher level math and science

## Area 1 - Instructional Coaching for Educators



**Sunil Melattinkara** is a math teacher in East Los Angeles. Mr. M (as he's lovingly know by his students). After 3 years of instructional coaching and using Calculus Roundtable's tools, methodologies and partners, Mr. M has moved 26 students of color into calculus proficiency.

SAT test score rose in **72%** of our partner schools.

## Area 1 - Instructional Coaching for Educators

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*by giving educators the tools they need to instruct 21st Century content.*

**712** students have completed at least one activity

**428** teachers, coaches, and community educators trained on delivering DORS content to students

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## Area 2 - Supplemental programs for student success

*by engaging students in rigorous and fun standards aligned content that improves in class proficiency in math and science.*

**523** Students have logged in more than 20 times

**28** Students of color complete a Calculus AP class in their school

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## Area 3 - Creating a college going culture for students & their families

*by connecting students to colleges, mentors and professionals in STEM related fields*

Our college pipeline now connects to **62** colleges and universities with programs supporting students of color in STEM related fields



# Digital One Room Schoolhouse (DORS) THEORY OF CHANGE



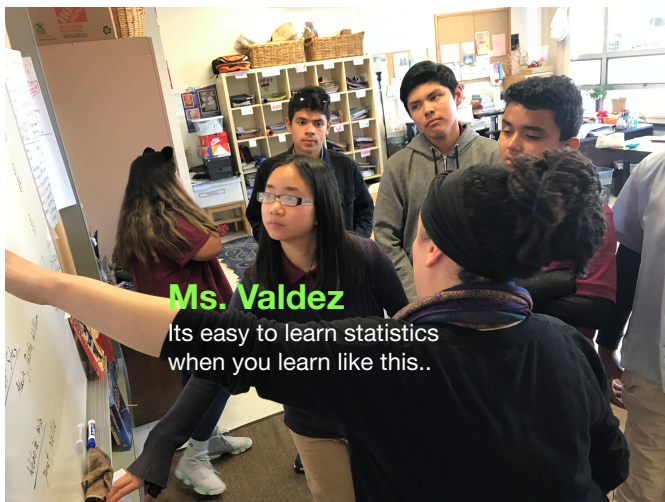
"This is how to kids make kids love science"



Dr. Ida Oberman

"Calculus Roundtable was a game changer in our school"

## What Teachers Say



# Student Impact

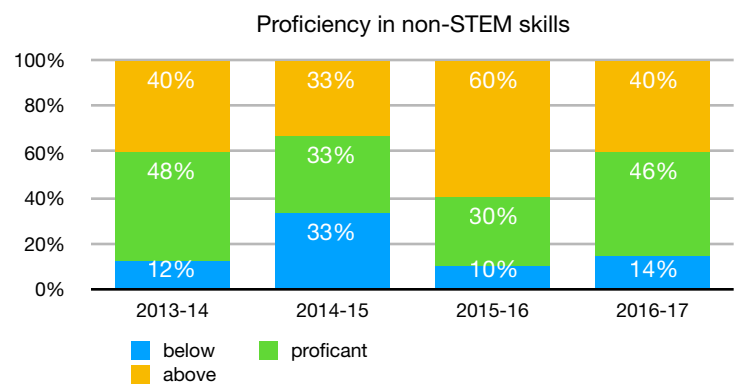
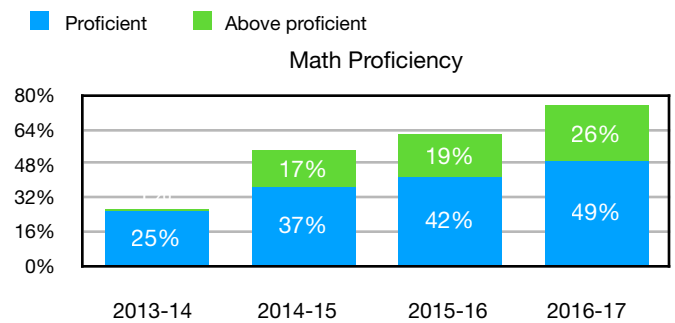


We define Experiential learning as a method of educating students through first-hand experience. Helping kids gain the skills, knowledge, and experience outside of the traditional academic classroom settings. This includes internships, field trips, field research, service-learning projects and kinetic authentic interaction with mathematicians in scientists.

The concept of experiential learning is not new. In the early 1900s, the One Room Schoolhouse was a place where students of different ages and academic capacities, learned together by experiencing. It's based on four main elements which operate in a continuous cycle during the learning experience:

- Concrete experiences assisted by technology
- Reflective observations with teachers, coaches and mentors
- Abstract conceptualization as a teaching strategy
- Active experimentation

DORS students regularly participate in activities above their grade level. 75% of students score at or above proficiency on grade level assessments.



## 21st Century Skills

The use of technology in our activities allows us to maximize the impact of 21st Century skills building. When measured by merit badge accrual, students consistently applied these skills in classroom behavior.

	Time on task	Report card grades	Leadership	Digital literacy
<b>Asian</b>	82%	30%	42%	36%
<b>African-American</b>	46%	42%	62%	42%
<b>Hispanic</b>	42%	35%	50%	26%
<b>ELL</b>	60%	12%	24%	15%
<b>Girls</b>	75%	62%	42%	60%
<b>Boys</b>	63%	49%	60%	46%
<b>Poverty</b>	47%	20%	41%	35%
<b>Special Education</b>	36%	--	10%	14%



We look at Impact organization wide with services and programs with different levels of student engagement and impact

Impact Type	Services	No. Of Students Impacted
<b>Direct Impact</b>		
<i>Working with students directly</i>	After school programs In-Class supports Scholarship information	833
<b>Indirect Impact</b>		
<i>Working with educators to inform teaching</i>	Teacher Professional Development	5,200
<b>Policy Impact</b>		
<i>Conducting research &amp; Implementing policy effecting educational systems</i>	Program Implementation Research & Evaluation	500,000

Many factors contribute to a student's academic performance, including individual characteristics and family and neighborhood experiences. However, our research suggests that, among school-related factors, our instructional coaches make a significant difference in student outcomes. When it comes to student performance on reading and math tests, students participating in DORS consistently show an increase in test scores, attendance, and leadership.

#### Individual Impact

- 4 students from the pilot cohort received full or partial's scholarships in stem
- 26 high school students in LA passed AP math placement
- 2 students received scholarships to attend Google's CS camp
- 2 students received the Ora Lee Brown full tuition Scholarship
- Cohort 23 won honorable mention award at the National Geographic geography award
- CR received congressional special recognition award for our work promoting STEM in communities of color

In June of 2018, Students attending our DORS Summer School program in Richmond, CA scored on average a **27 point increase** in math and ELA scores

#### Reviewing progress from our pilot program

**100%** of 9th grade students from Cohort 1 went on to college.

**70%** of seniors declared in STEM related degrees

**50%** of students from Cohort 1 were awarded a grant or scholarship

**1** student received a full 4 year scholarship

“Calculus Roundtable helped prepare both of us for college.”  
- Cohort 1 Parent

# Client Program Engagements

Our work with clients varies in size and scope. We separate our client work into four specific categories.

Client	Data Assessment & Accountability Systems	Supplemental in-class support & afterschool programs	Instructional Support	Data tools & digital learning spaces
Los Angeles USD				
Oakland USD				
West Contra Costa USD				
Santa Clara County Office of Education				
San Mateo County Office of Education				
Alameda County Office of Education				
Contra Costa Community College District				
California School Information System Agency (CSIS)				
Various Charter Schools				
United Way of the Bay Area				
Schoolcity School Systems				
Amazon Education				
San Jose Public Library				
City of Richmond				



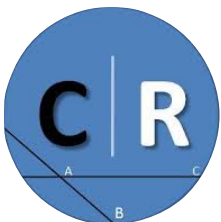
## Planning



## Training



## Educating



A fiscal project of the West Contra Costa Public Education Fund