Providing Opportunities that Create Endless Possibilities.

A Message from the CSTEM CEO and President:
Since 2002 CSTEM Teacher and Student Support Services has served in the nonprofit sector to provide educational support in areas of communication, science, technology, engineering and mathematics (CSTEM). Our mission is to provide opportunities that close achievement gaps between underrepresented students and those in the national average in the grades Pre K-12. CSTEM actively engages everyone in education through focused professional development that increases teacher content knowledge and real-world projects that enhance student achievement.

CSTEM began its pioneering movement in education as an innovative staple in the greater Houston community. From inception we have been doing the work necessary to successfully connect teachers and students with STEM education. An adopted philosophy of CSTEM thrives in the work we do in that we believe that good curriculum is that which is lived.

Currently we lead the nation with minority and female involvement in CSTEM learning at the grassroots level. Our proven track record indicates a 90% minority (Hispanic and African American) and 40% female student participation in STEM learning. Our Annual Report features the leaders and programs that have made our rankings known for the 2008-2009 school year. It is because of the hard work put forth by teachers, students, volunteers, and community partnerships we were able to offer many educational support programs and continue providing opportunities that create endless possibilities.

As a result of our successes and lessons learned, CSTEM will launch the Sea Turtle Challenge nationally during the 2009-2010 academic year. The national launch of this program will allow CSTEM to take to scale a local model to teaching and learning in more classrooms throughout our nation. As we embark on this nationwide launch of the Sea Turtle Challenge we reflect on the generous amount of support we have received thus far and we are so grateful; but our work is not done.

Our education needs are great and through CSTEM we can achieve the solutions needed now to get the kind of change we want to see in education and the workforce. On behalf of the CSTEM Teacher and Student Support Services, we are tremendously thankful for the opportunity to serve and we look forward to your continued support in the future.

Yours in the Journey of Education,

Reagan Flowers, Ph.D.
CEO and Founder
About us

Mission
Our mission is to close achievement gaps in areas of CSTEM (Communication, Science, Technology, Engineering and Mathematics) in grades P-16. C-STEM accomplishes its mission by developing, implementing, facilitating and/or sustaining hands-on, project-based learning experiences that further develop student’s interest and ability to perform and compete at the highest levels.

Who we are
CSTEM Teacher and Student Support Services, Inc., a 501(c) (3) organization, is doing its part by investing in schools to develop our STEM workforce. As a stakeholder in the community, CSTEM provides experiential opportunities through hands-on, problem-solving and project-based learning. The students that participate in CSTEM supported projects and programs are culturally diverse; have varying learning capacities and interest levels; have dreams, goals and aspirations in how they want to experience life; and want to find success with learning.

CSTEM thrives in an environment which fosters an integrated approach to teaching all subjects to reach all students. The gift funds CSTEM receives are utilized to provide support services to teachers and students in areas of communication, science, technology, engineering and mathematics.

Our goal in providing support services is to increase the pipeline of students prepared to competitively pursue careers in related field from high school to college or the workforce. We accomplish our goals largely through focused teacher training and providing real-world projects for teachers to implement in their classrooms.

Our partnering with schools allow us to directly impact teaching and learning either through training, donation of STEM Curriculum materials and supplies, field experiences, participation in annual competitions locally and nationally, and the STEM supplemental services that support each phase of every project experience. The outcome has been an increase in awareness of, interest in, and student academic performance in related STEM content areas.

CSTEM is a much needed and viable organization within the educational and social communities that it proposes to serve. We have made amazing progress with its programs and initiatives since its inception. This report is aimed at stimulating and supporting the growth of CSTEM and working towards increasing sustainability of the organization.

Teacher Support Services
- Instructional Resource Kits, materials, and equipment
- Curriculum Development
- Project-based Learning Professional Development Workshops
- STEM enrichment /resource information (i.e. camps, training, scholarships, programs, etc.)
- Video documentation of student work
- Program/project development and implementation services through collaborative partnerships
- STEM Resource Garage (i.e. resources for schools to check out for instructional support)

Parent Programs
- Parent and Student STEM Field Experiences
- STEM Workshops
- STEM Outreach (i.e. summer camps, enrichment, resources, etc.)

National Annual Program

Sea Turtle Robotics Challenge
This initiative aims to connect various content areas through project based learning interdisciplinary in scope. The CSTEM Sea Turtle Robotics Challenge upholds a feeder pattern concept which allows elementary, middle, and high school students to collaboratively solve problems in STEM. The robotics competition provides an opportunity for students to develop team building skills, serve as mentors, and apply STEM to solve real-life problems. Through this project, students will understand how their work impacts the lives of others and exposes the needs of sea turtles worldwide. Some of the content areas covered in this project include: Communication, Science, Technology, Engineering, Mathematics, English, Art and History.

Students will not only be inspired to continue STEM learning, but they will be made aware of how they can fit into the global community and understand how they can improve different ecosystems. In the end we are one world and one community. It is our responsibility to protect mother earth.
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2009 Sea Turtle Challenge Winners

1st PLACE ROBOTICS
Lee Feeder Pattern

2nd PLACE ROBOTICS
Debakey Feeder Pattern

3rd PLACE ROBOTICS
Eastwood Feeder Pattern

The reason I like the competition is because robots are hard to make but once you get it together, it will work and you got to keep it going.
-Xavier
2009 Sea Turtle Challenge
Demographics Data

CSTEM offers PreK-12 Students engaging real world project-based learning modules/enrichment that challenge students to think creatively, problem solve, conduct research, collect and analyze data, and produce artifacts representative of the learning and their academic performance levels.

The Sea Turtle Challenge initiative aim is to connect various content areas through project based learning interdisciplinary in scope. The CSTEM Sea Turtle Robotics Challenge upholds a feeder pattern concept which allows elementary, middle, and high school students to collaboratively solve problems in STEM. The data provided below shows the variation of students who participated as well as the gender and demographic makeup.

In assessing the 2008-2009 academic year community impact through the Sea Turtle Challenge, the data analyzed from the survey sample of teacher and student participants provide the following:

CSTEM is making an impact in the lives of underserved students; however compelling statistics illustrates a growing disparity between Black Hispanic students participating in the opportunities provided by CSTEM.

In 2008 52 schools and 16 feeder patterns participated in the competition.

In 2009 62 schools and 19 feeder patterns participated in the competition.

There was 90% participation of underserved (Black and Hispanic) students in Sea Turtle Challenge.
I think the competition is pretty good. We have a good chance of winning.
-Marsha, Student, East Wood Academy

“To me CSTEM is based on how we can improve our ecosystem and make it more friendly to our society”
-Breanna, Scarborough High School Student

I learned that turtles are endangered and we are trying to save them”
-Jason, Ryan Middle School Student
Community Leaders that Support CSTEM

Council Member Jarvis Johnson

Congress Woman Sheila Jackson Lee

Melinda Spalding-Fox 26 News Anchor

J-Xavier-Youth Recording Artist

Debra Duncan

Other Supporters
State Representative Dora Olivia
Council Member Wanda Adams

Neil Bush

Lawrence Payne
**Other Programs CSTEM Offer....**

- **Girls Exploration Team (GET)**

  The Girls Exploration Team (GET) initiative allows schools to provide an opportunity for girls to develop and explore their interest in communication, science, technology, engineering, and mathematics. This initiative was implemented in 2008 to develop a culture on school campuses fostering STEM hands-on learning through discovery, team building, and problem solving in an environment that encourages girls to showcase their math and science interest and ability.
Other Programs CSTEM Offer

- **Summer STEM Enrichment Camps**
The goal of this project is to provide targeted enrichment that will engage students in hands-on, project-based learning activities that promote problem-solving, thinking outside the box, increased self-esteem, and teamwork.

  CSTEM Exploration Camp
  (Student Survey)
  Gender

  CSTEM Exploration Camp
  (Student Survey)
  Ethnicity

  Robotics (during and after-school)
Inspires and motivates students by challenging them to build a remotely controlled robot to accomplish a defined task within a competitive setting. Our consultants and partnering school teachers are used as coaches to guide student teams through the engineering design and construction process.

  Student Ambassador
CSTEM’s Impact

To be in the CSTEM competition previous robotics experience is not required. The data shows that more than 90% of the competitors did not have previous experience but they still participated in the challenge.

**2009 Sea Turtle Challenge**

**Previous Robotics Competition**

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**2009 Sea Turtle Challenge**

**Reasons for Getting Involved**

- I like putting things together: 19%
- I want to learn more about science and technology: 21%
- I am interested in a job or career that uses science and engineering: 10%
- I like working on team projects: 19%
- I want to become an engineer: 8%
- I like working with art projects: 14%
- I want to learn how to apply math and science to real-life: 9%

**2009 STC Kick-off Student Survey**

**Previous GPS Experience**

- Agree: 24%
- Somewhat Agree: 16%
- No Opinion: 20%
- Somewhat Disagree: 9%
- Disagree: 31%

**2009 Sea Turtle Challenge**

**Interested in Participating Next Year**

- Yes: 90%
- No: 10%

**2009 Sea Turtle Challenge**

**Engineering Field(s) Interest**

- Mechanical: 60
- Electrical: 50
- Chemical: 30
- Civil: 20
- Aeronautical: 10
- Industrial: 5

Students get the opportunity to use technology and infuse it into their learning.

Students had so much fun participating in the competition. 90% of the students surveyed would like to participate in 2010 competition.

After participating and being introduced to STEM activities students had a high interest in pursuing Engineering Fields.
# Board of Directors

## 2008-2009

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<td>J.P. Morgan Chase Bank</td>
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In the spirit of partnering

Lemonade Day

The Houston Rockets

California Pizza

Shell and Schlumberger

Sea Turtle Restoration Project

Houston Works
Volunteers
CSTEM has a data base of ....volunteers..........
Community Outreach
2009 Sea Turtle Challenge Kick-off TEACHER Survey

2009 Kick-off Teacher Survey
School District Participation

- Houston Independent School District: 70%
- Fort Bend Independent School District: 5%
- Alief Independent School District: 10%
- North Forest Independent School District: 9%
- Aldine Independent School District: 5%

2009 Kick-Off Teacher School Level Taught

- High School: 34%
- Middle School: 35%
- Elementary School: 20%
- Kindergarten: 7%
- Pre-kindergarten: 4%
Ryan Middle School Community
Science Day
Favorite Activity

- Science Fair: 10%
- Engineering: 32%
- Biochemistry: 32%
- Environmental: 26%

Ryan Middle School Community
Science Day
Learned Something New by Participating

- Disagree: 3%
- Somewhat Disagree: 5%
- No Opinion: 12%
- Somewhat Agree: 54%
- Agree: 26%
2009 Sea Turtle Challenge Kick-off Student Survey Age

2009 STC Kick-off Student Survey Learned Alternative Energy, Conservation, and Efficiency