

U.S. Army Corps of Engineers Galveston District

# #STEMInspiration

Inspiring tomorrow's leaders in  
Science, Technology, Engineering & Math (STEM)



[www.swg.usace.army.mil](http://www.swg.usace.army.mil)  
Building Strong!

**Maj. Gen. Keith L. Ware & USACE Herbert A. Kassner**  
**Public Affairs Competitions 2013**  
**Category E: Digital Communication Campaign**

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# Summary:

Nineteen percent of the U.S. Army Corps of Engineers' (USACE) 36,600 workforce qualify for immediate retirement and 22 percent for early retirement, leaving the agency to struggle with a shrinking pool of college graduates with degrees in science, technology, engineering and mathematics (STEM) fields who are critical to the success of military missions and national security. To address this growing problem, the USACE Galveston District launched **#STEMInspiration** as part of **Corps in the Classroom: Building Tomorrow's Leaders in Science, Technology, Engineering and Math (STEM)**, an aggressive community outreach and social media campaign to spark students' interest in STEM subjects, help counter stereotypes and increase participation of underrepresented groups in STEM careers.



## #STEMInspiration



**Research:** The research portion of the Corps in the Classroom and #STEMInspiration campaigns was based largely on secondary research gathered from the President's Council of Advisors on Science and Technology's, "Engage to excel: producing one million additional college graduates with degrees in STEM" report, the National Academy of Sciences' report, "Assuring the U.S. Department of Defense a Strong STEM Workforce" and Bayer's "STEM Education, Science Literacy and the Innovation Workforce in America: 2012 Analysis and Insights from the Bayer Facts of Science Education Surveys" report.

Staff conducted formal, secondary research (fact finding) to include directly obtained answers to questions on STEM-related statistics needed as part of key messaging, including the percentages of "baby boomer" retirements that could potentially impact the organization as well as informal, secondary research (web research) that provided statistics and data for inclusion in the program. A brief summary of research findings revealed:

- The U.S. expects 2.8 million STEM job openings by 2020 based on growth and retirements; however, the U.S. is not producing enough students to keep up with the demand. Adding to the problem is the lack of accessibility to STEM careers by women, African Americans and Hispanics (DoD).
- STEM jobs will continue to grow faster than other occupations (17 percent between 2008-2018 compared to just 9.85 percent for non-STEM jobs) yet minorities and women are still underrepresented in STEM fields (Department of Labor).
- Women account for 10 out of every 100 STEM degrees and African Americans and Hispanics account for only 5 out of 100 STEM degrees (DoD).
- Nineteen percent of the USACE' 36,600 workforce qualifies for immediate retirement and 22 percent qualify for early retirement (USACE).

**Planning:** The campaign plan focused on partnering with key influencers through free public relations venues and relationship-based marketing to strengthen STEM-related programs that inspire current and future generations of young people to pursue careers in STEM fields. With gaps in STEM education often beginning before students attend college and continuing to increase as students graduate and pursue higher education, the team employed a three-prong strategy to target key demographics to assist in promoting the pursuit of STEM careers among students by: 1) Recruiting, developing and retaining STEM professionals 2) Collaboration 3) Leveraging support from STEM professionals and created the following three main campaign objectives:

- Increase awareness of STEM careers in women, African American and Hispanic students and key influencers by 40 percent
- Collaborate with 10 partners, community leaders and national organizations
- Increase conversation and engagement of the **Corps in the Classroom** and **#STEMInspiration** campaigns by 35 percent among target audiences by December 2013

**Implementation:** In order to reach students, staff aimed to make STEM careers the most desirable choice by raising awareness of the variety of jobs held by key influencers that are available to students and employed the following tactics: Embracing the notion from our research that mentions it takes a village to improve science education in America and that all stakeholders have a responsibility and a role to play, the USACE Galveston District PAO combined its strategy of leveraging support from STEM professionals with social media to exceed campaign expectations in a record-setting fashion. Using the hashtag **#STEMInspiration**, staff launched a social media component (via Facebook, Twitter, Flickr and LinkedIn) August 2013 which reached out to key influencers who all have backgrounds in STEM and requested photos from the individuals and an answer to the question, "**Who inspired you to pursue a career in STEM?**"



**STEM INSPIRATION**  
**Dr. Mantta Patel Nagaraja**  
 Director of Biological Engineering and Director of NASA Johnson Space Center Houston

**Pursuing your dream begins here.**  
 Who Inspired you?  
 Who inspired you?  
 Education  
 Director of Biological Engineering, Texas A&M University, Houston • Director of Biological Engineering, Johnson Space Center, Houston • Director of Biological Engineering, Johnson Space Center, Houston



**STEM INSPIRATION**  
**Sharon Tirpak**  
 Marine Biologist/Project Manager  
 @Houston, Texas

**Pursuing your dream begins here.**  
 Who Inspired you?  
 Who inspired you?  
 Education  
 Director of Marine Biology, University of New England (1982), University of the New England Staff College (1982)



**STEM INSPIRATION**  
**Dr. Charles A. Smith**  
 Professor of Chemistry  
 Our Lady of the Lake University  
 San Antonio

**Pursuing your dream begins here.**  
 Who Inspired you?  
 Who inspired you?  
 Education  
 Professor of Chemistry, Our Lady of the Lake University, San Antonio



**STEM INSPIRATION**  
**Lt. Col. Marty Maldonado**  
 Deputy District Engineer  
 U.S. Army Corps of Engineers Galveston District

**Pursuing your dream begins here.**  
 Who Inspired you?  
 Who inspired you?  
 Education  
 Deputy District Engineer, U.S. Army Corps of Engineers Galveston District



**STEM INSPIRATION**  
**Stephen Percival**  
 Mechanical System Design Engineer Lead  
 Boeing

**Pursuing your dream begins here.**  
 Who Inspired you?  
 Who inspired you?  
 Education  
 Mechanical System Design Engineer Lead, Boeing

# Digital Impact:

**Continued:** Staff garnered support from more than 70 individuals including **Emmy-Nominated Actress Mayim Bialik, Ph.D., (The Big Bang Theory & Blossom)**, and professionals from leading STEM organizations, higher education institutions, NASA, corporations and congressional officials to make up our village.

Staff included the individual's name and organization on a poster, placed them on our social media sites, tagged every respective key influencers' personal social media page and showcased the posters at our annual **Great Minds in STEM** event at The Rice School, a Spanish and technology magnet school in the **Houston Independent School District**.

With a budget of less than \$400, the multi-platform campaign successfully brought Corps staff into the classroom to reach the students directly, tapped into social networking to target key demographics and engaged key influencers to communicate with the target audience. Partners were deeply invested, providing free placement of campaign products/coverage in their magazines, online, event programs, newsletters and on air, reaching an audience of millions which would have otherwise cost thousands of dollars. Garnering a genuine buy-in to our campaign increased the likelihood that minority and female students would embrace the **#STEMInspiration** campaign, share it with their friends and colleagues and increase awareness of the STEM challenge facing the nation.

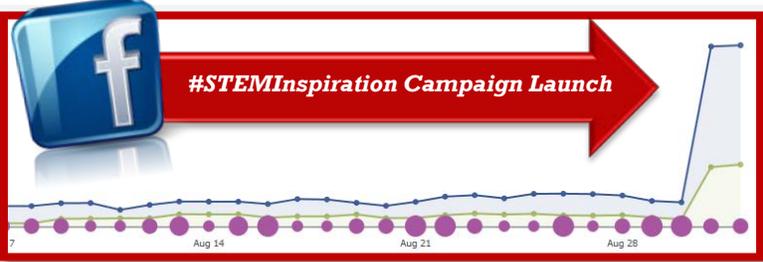
**Evaluation (Products):** The **#STEMInspiration** and **Corps in the Classroom** campaigns capitalized on the power of partnering to achieve many "firsts," and exceed all campaign goals and objectives including formal partnership agreements with Historically Black Colleges and Universities (January and August 2013), and minority-serving institutions, career fair attendance (February 2013), internships (Summer 2013), media impressions, materials distributed and social media engagements. The campaign encouraged community participation, brought awareness to its intended audience of this growing problem and now serves as a model for sister district offices to emulate nationwide.



**Insights**  
 Reach: People Who Saw Your Posts  
**93,093**  
 ▲ 4,176.2% from previous week

## By the Numbers

- 3,000,000+ target audience the district engaged via social media
- 70+ STEM Inspiration Campaign people making up our "village" highlighted (August - December 2013)
- 316 percent increase in engagement (Facebook and Twitter combined, December 2013)
- 53 percent increase in Facebook likes and a 104 percent increase in Twitter followers in 2013 over 2012
- 4,176.2 percent increase in Facebook "reach" following launch
- 979.39 percent increase in "people talking about this" following launch
- 4.09 percent increase in "likes" in one day following launch
- 1 Great Minds in STEM event (100+ participants) (September 2013)
- 1 radio public service announcement created (October 2013)
- 1 webpage developed (August 2013)



**Klotz Associates @KlotzAssociates** 20 Nov  
 Billy Cooke, PE was featured in the U.S. Army Corps of Engineers #STEMInspiration campaign. Check it out!  
 fb.me/1ukK1qje  
 Top Tweet

**CRS @crscience** 27 Aug  
 #STEMInspiration: Who Inspired You? bit.ly/1c9QjVH #STEM #mentor #rolemodel #science #STEMpipeline @USACEgalveston  
 Expand Reply Retweeted Favorited More

**OLLUniversity @OLLUnivSATX**  
 OLLU biology professor Dr. Cary Guffey is featured in the Army Corps of Engineers STEM Inspiration campaign... fb.me/Si8GmXq9  
 Collapse Reply Retweet Favorite More

**Texas Instruments @AroundTI** 11 Sep  
 Who inspired you? Read about TI's Duy-Loan Le who's inspiring students to pursue #STEM careers. ow.ly/oLOpr  
 Expand Reply Retweeted Favorited More

**U.S. Army @USArmy**  
 Who inspired @BigBang\_CBS actress @midsunym to pursue a degree in STEM? Visit 1.usa.gov/150ID94 to find out!  
 #STEMInspiration  
 Collapse Reply Retweeted Favorited More

**USACE Europe @usaceurope** 23 Oct  
 RT @USACEgalveston: #STEMInspiration Who inspired @galvestons Esther Sjostrom to pursue a career in #STEM? 1.usa.gov/150ID94...  
 Retweeted by Galveston ISD