



STEM Volunteer Training: Crafting your STEM Message

November 12, 2015

techbridge
Inspire a girl to change the world



#WomenInSTEM
#STEMCafes

Rabiah Mayas, Ph.D.
Director of Science and Integrated
Strategies
Museum of Science and Industry Chicago

Melinda Higgins
Science and Technology Policy Fellow
Department of Energy

Megan Davis
Program Manager
Techbridge

Training Agenda

Welcome and Introduction (DOE)
Sharing Successful STEM Interaction Stories (MSI)
Importance of STEM Role Models and Stories (MSI)
Mad Libs: Crafting Your STEM Story (Techbridge)
Practicing Your STEM Story (Techbridge)
Questions & Answers (DOE)
Next Trainings

Find this training and future on our website at:

<http://www.energy.gov/diversity/services/stem-education>

You are on mute!

Use your webinar bar to send a chat or send in a question.
Please tell us via chat if you cannot see or hear.



Welcome and Introduction

- **Vision:** To engage diverse students in conversations around STEM and introduce them to STEM professionals.
- **Strategy:** To help achieve the goal of involving Federal STEM Volunteers in 1,000,000 hours of volunteer STEM service.
- **Need:** To facilitate STEM Volunteer training and resources for professionals that want to contribute to a mentoring effort
- **Result:** Establish Quarterly STEM Volunteer Virtual Training Series



Sharing Successful STEM Interaction Stories

Type in the Chat box a quick share of a successful STEM interaction story that you experienced.



Out-of-school time STEM Learning - Key Opportunities

- ❑ Students spend <15% of time per year in school
- ❑ OST experiences can be more successful for learning in female and minority youth*
- ❑ Participation in an OST experience correlates strongly with success in STEM**
- ❑ Importance of STEM Ecosystems***



References

*Tan and Calabrese Barton, 2012

** Tai et al, 2006

*** Traphagen and Traill, 2014



Importance of STEM Role Models and Stories

- ✓ Increased recruitment, retention and sense of belonging in STEM*
- ✓ Supporting the six strands of informal science learning,** in particular:
 - **Strand 1:** Experience **excitement, interest and motivation** to learn about phenomena in the natural and physical world.
 - **Strand 6:** Think about themselves as science learners and **develop an identity** as someone who knows about, uses, and sometimes contributes to science.
- ✓ Emotional connections and personal relevance impact STEM learning and sense-making**

* Drury et al., 2011

** National Research Council, 2009

*** Immordino-Yang, 2015



Crafting Your STEM Story -- MadLibs Style

Instructions:

Build your STEM Story personal introduction following these steps.

Please type them all in the chat box as one response.

Type in the chatbox, separated by commas:

Three (3) positive adjectives that describe your job

One(1) positive adverb that describes your job

One(1) verb related to your job

Two (2) STEM-job related nouns (such as: solar panel, microscope)



Your STEM Story: MadLibs Style

Now try completing the following sentences with your MadLibs words.
Does your STEM Story make sense?!

I'm a ____ (insert adjective #1) ____ (your profession) and that means I ____ (adverb) ____ (verb) ____ (STEM noun #1).

You might have seen me using ____ (STEM noun #2) because I am always ____ (adjective #2) and usually ____ (adjective #3).



Practice Your STEM Story

Instructions:

Spend 5 minutes revising your STEM Story personal introduction, including:

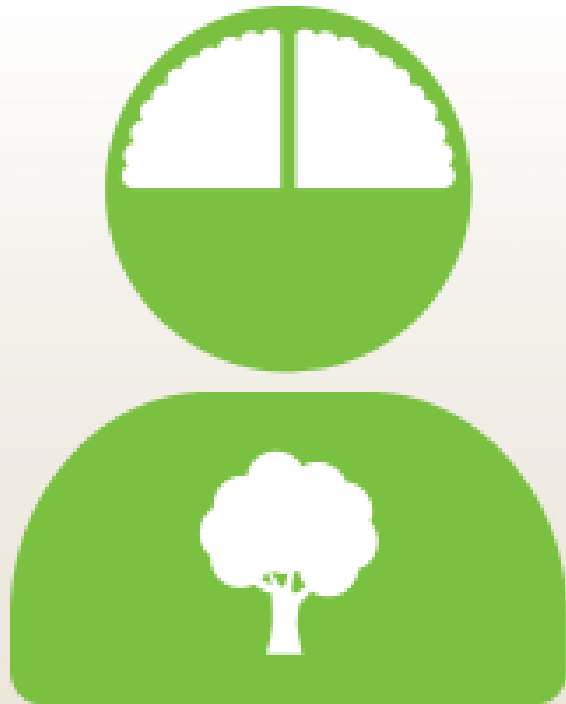
- Explain what you do. To what could you compare your job that relates to everyday life? Avoid abbreviations and acronyms.
- Explain how your profession affects the audience's lives and communities.
- Background on your academic and career journey. What did you want to be when you were your audience's age?
- 3 Fun Facts about yourself/your hobbies/family & friends.
- Why you like working at ___ / your field of work.

Role Model Introductions: The Good, Bad and the Ugly

“As a chemical engineer, I work to develop adiabatic processes for boilers in our NGPO business unit. I work in Sunnyvale and have been at my company for 5 years. It’s a lot of work but I’ve had some great opportunities there.”

“I’m a chemical engineer, which means that I work with really small molecules, which are the things that make up everything that exists on Earth. Some products I’ve worked on include the gas that goes in your car and the cleaning solutions the custodian at your school uses to keep it safe and healthy for you. Outside of work, I like to hike with my Labradoodle Corky, play Scrabble, and spend time with my nieces and nephews.”

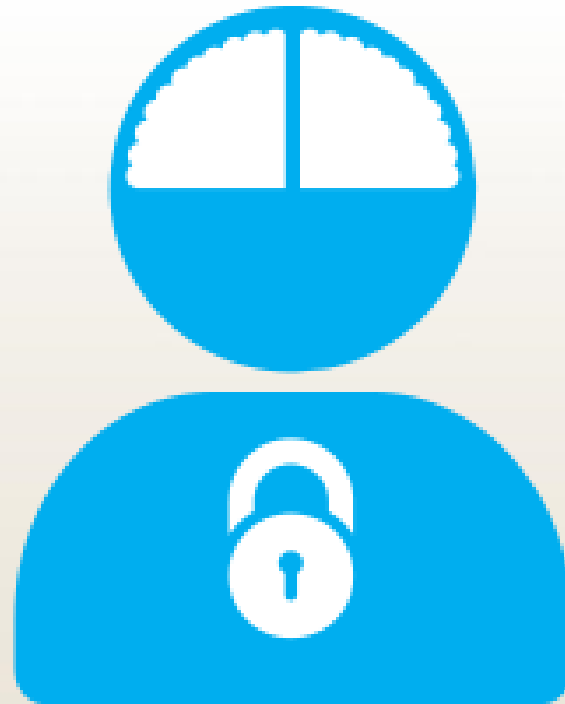
Growth Mindset



Growth Mindset

Believe that they can learn anything if they put in the work, practice, and effort to learn it.

VS



Fixed Mindset

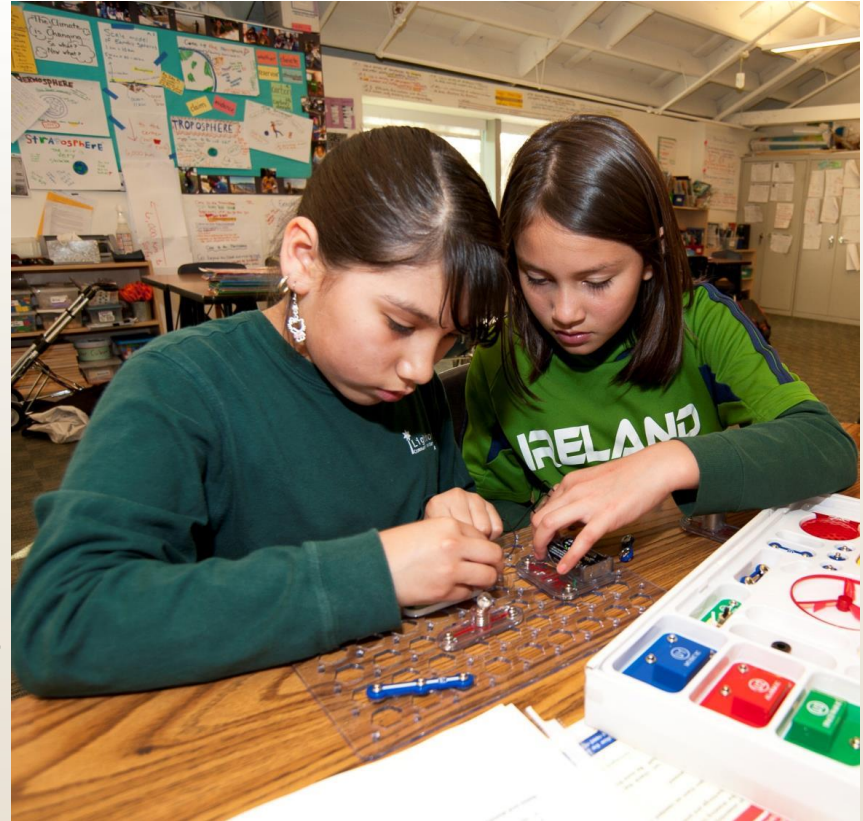
Think that they cannot increase their skill and knowledge in a particular area.

Facilitating a Hands-On Activity

Save the Date: January 28, 2016

When selecting your activity, consider:

- Scientific concepts relevant to activity
- Connection between activity and your job, the Engineering Design Process, and/or the youth's community
- Encourage perseverance + creativity



Questions and Contact Us

Email us: STEMED@energy.gov

Tweet and Facebook with us:

#WomenInSTEM

#STEMCafes

@techbridgegirls

More resources and videos
about Crafting Your STEM Story

at [www.techbridgegirls.org/
rolemodelsmatter](http://www.techbridgegirls.org/rolemodelsmatter)



Next Trainings



January 28, 2016 at 3 pm ET

Engaging in STEM with Hands-on Activities

Register: <https://attendee.gotowebinar.com/register/8205690832916521218>

April 14, 2016 at 3 pm ET

Types of Volunteering and Where to Find Opportunities

Register: <https://attendee.gotowebinar.com/register/4142611638726715906>

Find this training and presentation on our website at:

<http://www.energy.gov/diversity/services/stem-education>