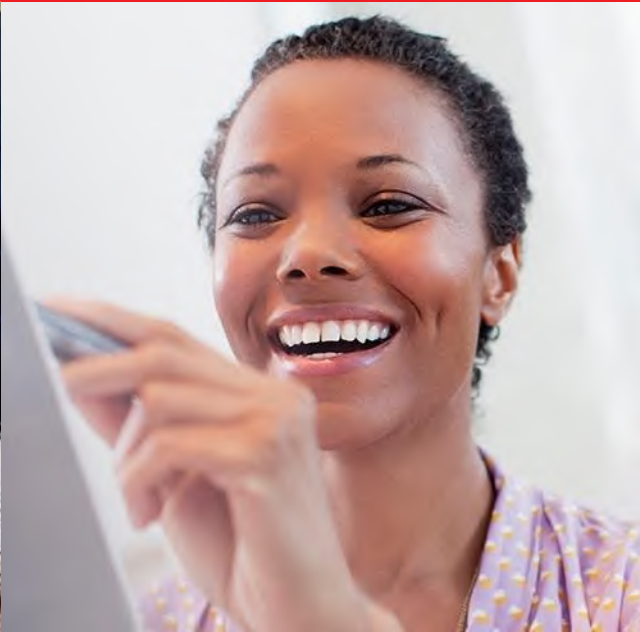


Johnson+Johnson

WISTEM<sup>2</sup>D

*Youth Programs Orientation (ages 5-18)*



# ABOUT US:



**Gloria Candelario Hossri & Cliona O'Geran**

*Co-chairs of the Youth Product team for  
WiSTEM²D & BTE Program Volunteers*

**Introduction to WiSTEM²D**





# J&J WiSTEM<sup>2</sup>D Youth Program



WiSTEM<sup>2</sup>D seeks to *inspire the next female generation* to imagine what's possible.



**By 2020,**  
we aspire  
to reach  
**1 MILLION**  
**GIRLS**

**180**  
Students

**SCIENCE FAIR**



**11-13**  
years



**Design  
Challenge  
Program**

**Exploring  
R&D**



What do you hope young people, especially females, will get out of this activity?

*"I hope to help break the stereotype about STEM careers being only for males and to help female see that STEM is a part of everyday life and this field is very diversified. I also aim to spark the interest of female in pursuing a career in STEM."*

Sandy Smith – Quality Control Analyst



# North Plainfield High School BTE (Class of 2016)




# INTRODUCTION:

This overview will:

- Inform you about the WiSTEM<sup>2</sup>D initiative
- Provide examples of how to leverage the activities with your BTE students to help to spark enchantment among young people.
- Inform you on the available resources and mechanism to track engagement.

*Johnson+Johnson*



**W**STEM<sup>2</sup>D  
BACKGROUND

# ABOUT STEM<sup>2</sup>D

## WHAT IS STEM<sup>2</sup>D

STEM<sup>2</sup>D is an acronym that refers to Science, Technology, Engineering, Mathematics, Manufacturing, and Design. The STEM<sup>2</sup>D subjects are:

- **Science:** Observing, studying, and experimenting to better understand the natural world and how it works.
- **Technology:** Putting science and other knowledge to practical use to solve problems, invent useful tools, envision new possibilities, and establish meaningful connections between people and the world that surrounds them.
- **Engineering:** Applying science and math principles to design and develop products, structures, machines, tools, or systems that improve everyday life.
- **Mathematics:** Using a quantitative framework (numbers, quantities, shapes, abstract principles, and problem solving) to describe the world.
- **Manufacturing:** Creating something from raw materials by hand or by machinery.
- **Design:** Creating, constructing, or inventing an object, plan, product, or system

## WHY WOMEN IN STEM<sup>2</sup>D?

Across the United States, there is a lack of gender diversity in STEM<sup>2</sup>D fields. Although women made up 57.2% of all professional workers in 2015, they comprised only 46.6% of science professionals, 24.7% of computer and math professionals, and 15.1% of engineering and architecture professionals.

The scarcity of women in STEM<sup>2</sup>D fields is a long-standing and persistent problem. For example, in advanced manufacturing, women made up only 10% of the workforce in 2001 and 2014. Other countries across the globe see similar statistics.

WiSTEM<sup>2</sup>D

# VISION

**Executive Sponsors:** Sandi Peterson & Kathy Wengel  
**Program Manager:** Kate Wetzel  
**Program Comms. Strategy Leader:** Cristal Downing

Launched in 2015, WiSTEM<sup>2</sup>D stands for **Women in Science, Technology, Engineering, Math, Manufacturing and Design**. With the objective of increasing representation of women in science and technical fields, a multifaceted approach has been implemented to support and inspire girls and women of all ages in their pursuit of STEM<sup>2</sup>D studies and careers.



## Vision: Building a Diverse STEM<sup>2</sup>D Community

- ✓ Enabling women's representation in STEM<sup>2</sup>D to reflect global demographics, thereby expanding the idea-base to improve healthcare and help people everywhere live happier, healthier lives.



## Mission

- ✓ J&J values and harnesses the power of diversity for our company and our customers. J&J supports and inspires girls and women in their pursuit of STEM<sup>2</sup>D studies and careers globally.



## YOUTH PROGRAMS (AGES 5-18)

**Sponsor:** Meri Stevens

**Leaders:** Somi Kim & Michael Bzdak

Spark enchantment with technology in young women and girls through creative problem-solving and play.



## UNIVERSITY

**Sponsor:** Georgia Papathomas

**Leaders:** Cat Oyler & Tonja Danowski

Inspire career paths by partnering with academic institutions to develop high-impact strategies for recruiting, retaining and engaging women leaders.



## PROFESSIONALS

**Sponsor:** Seema Kumar

**Leader:** Stephanie Muir & Robin Cohen

Tap into the power of diversity through reimagined recruitment and retention of the world's best technical female talent.





Youth Programs (ages 5-18)



# Spark Enchantment

with technology in young women and girls through  
creative problem-solving and play.

# 2018 KEY PRIORITIES:



## SCALING TO REACH **1 million girls**

Programming Goals (Outputs/Outcomes)

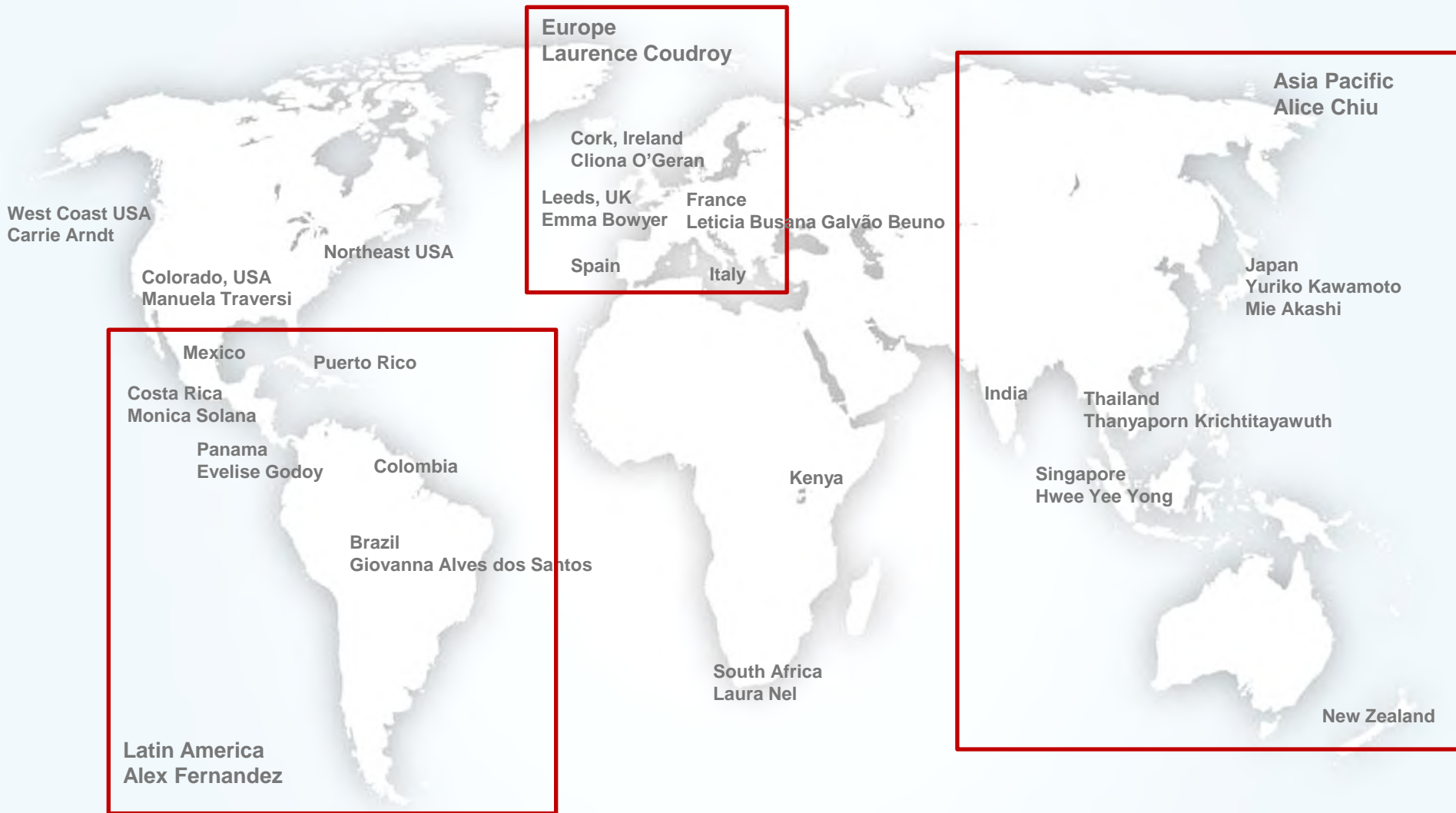
Goal 1: Reach 50,000 girls directly in partnership with 250 schools/clubs/after-school activities

Goal 2: Reach 50,000 girls through partnership efforts catalyzed by J&J support

Goal 3: Reach 50,000 girls through leveraged partnerships (i.e. Girl Scouts)

Goal 4: Engage 2,000 J&J employees

# Champion Mapping



# WiSTEM<sup>2</sup>D Youth Programs Pillar

## GLOBAL DEPLOYMENT STRATEGY (the "what")



### PRODUCT

**Leads: Gloria Candelario, Cliona O'Geran**

Develop process for engaging external groups in STEM<sup>2</sup>D

- Work with Girl Scouts/Girl Guides on STEM<sup>2</sup>D partnership
- Work with FIRST Robotics to develop partnership
- Manage content development, including:
  - Create repository of content being used
  - Provide feedback on content from external partners
  - Work with partners on new content development
  - Develop supply chain procedures for content and materials, ie. kits to be reused



### PROCESS

**Leads: Cathy Steele, Rob Miller**

Regional Champion identification and support, including:

- Meet with champions about regional targets
- Identify Regional Sponsors & Champions where needed
- Help region create regional counsels for WiSTEM<sup>2</sup>D
- Support logistics for upcoming events and programs
- Complete work on Volunteer Journey process
- Develop long-term scale-up plan
- Align goals with other ERGs
- Create link with University Pillar



### PEOPLE

**Leads: Radhika Venugopal, Alex Fernandez**

- Develop toolkit & deploy training for volunteers
- Share J&J volunteer experiences through My Story
- Manage external partner relationships
- Manage the volunteer journey, including:
  - Create linkages across pillars
  - Recruit new volunteers
  - Engage field-based employees
  - Connect with volunteer database
  - Leverage Talent for Good



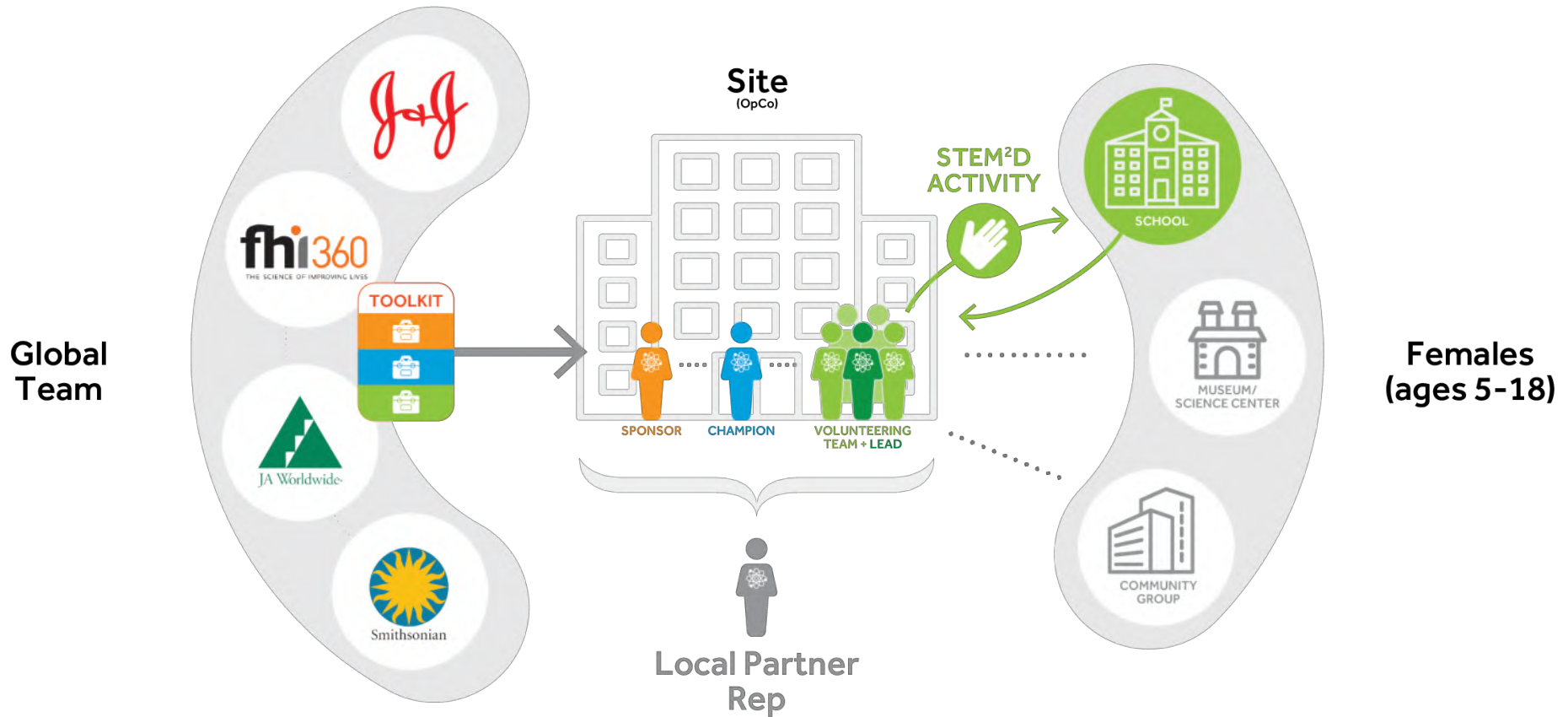
### SYSTEM

**Leads: Elizabeth Truman, Ghata Vyas**

- Data Collection, including:
  - Track events from planning to counting
  - Manage volunteer database
  - Perform internal scan of existing STEM programs
  - Work with external partners on counting & evaluation
- Manage internal WiSTEM<sup>2</sup>D team SharePoint site
- Work with JA on external site at stem2d.org
- Provide visibility and guidance to WiSTEM<sup>2</sup>D Yammer groups
- Analyze and recommend new technology systems & tools

Communication Plan—Gavin Duncan, Sarah Rodriguez, Emily Soonthornchai

# YOUTH PROGRAMS OPERATING MODEL



# WHAT COUNTS AS A WiSTEM<sup>2</sup>D EVENT?

J&J wants to make a meaningful impact on girls. All interactions with students should intentionally employ the WiSTEM<sup>2</sup>D philosophy and mindset described in the *Spark WiSTEM<sup>2</sup>D* guide.

## Required at each event:

- J&J Employees Engage Students in STEM<sup>2</sup>D
- All Employee Volunteers read *Spark WiSTEM<sup>2</sup>D*
- Girls Reached through Effort (Boys can be too)

## Optional elements:

- Use of partner curriculum/resources/activities
- Volunteer training provided

## Examples: J&J employees...

- ✓ Volunteer through Bridge to Employment (fhi360 partner)
- ✓ Deliver STEM<sup>2</sup>D content at a JA program
- ✓ Participate in FIRST Robotics program
- ✓ Speak on STEM<sup>2</sup>D panel
- ✓ Take Smithsonian curriculum training & implement in their local K-8 school

# WAYS IN WHICH YOU CAN REACH BTE STUDENTS THROUGH WiSTEM2D

## PLAN YOUR OWN EVENTS

1

Host an activity within a classroom (BTE session)

## PARTICIPATE IN AN EXISTING EVENT OR VENUE

2

Bring BTE students to an existing STEM event in the community



# HOST AN ACTIVITY IN A CLASSROOM

Work with your already established local BTE schools to connect J&J volunteers with students for hands-on classroom activities.

Programs can include one of the WiSTEM<sup>2</sup>D activities or activities from our established partners, like FHI.

Examples:

- Run the “Make It, Try It, Manufacture It” program activity with a classroom, details on the [www.stem2d.org](http://www.stem2d.org) website
- Use the Smithsonian’s Science and Technology Concepts (STC™) program with a classroom
- Host an assembly for a school with a panel of J&J STEM<sup>2</sup>D professionals





# PARTICIPATE IN AN EXISTING EVENT

Take your BTE students to a STEM event or to an event sponsored by J&J to expose them to talks about STEM<sup>2</sup>D-related careers or the WiSTEM<sup>2</sup>D initiative.



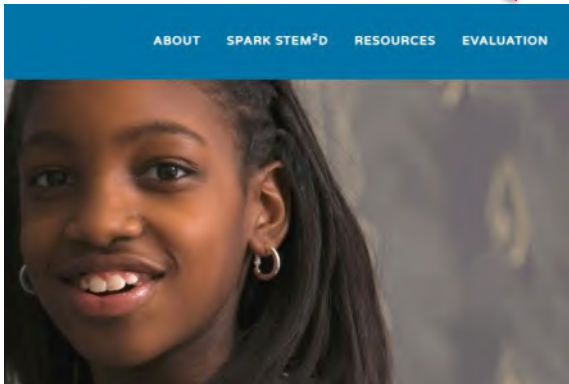
Examples:

- Expose students to an informational booth at a STEM fair where J&J volunteers (can be your BTE volunteers) talk to students about opportunities in STEM<sup>2</sup>D
- Expose students to speeches at an event to learn about the importance of STEM<sup>2</sup>D career journeys (ask your BTE volunteers to participate in these types of speeches)

# HOW WE MEASURE OUR IMPACT

We use two tools to measure the impact of WiSTEM<sup>2</sup>D Youth Programs.

Both tools are available online at [www.stem2d.org](http://www.stem2d.org) and should be completed after each event.



## Program Data Collection – Completed by Team Lead

- Counts girl/student involvement
- Counts volunteer involvement
- Collects data about event location, date/time, and activity type

## Employee Feedback Survey – Completed by each member of the Volunteer Team

- Collects data about event and activities
- Measures employee impact & resource effectiveness

YOUTH PROGRAMS (AGES 5-18)

# PROGRAM ACTIVITIES (OPTIONAL)

J&J employees can implement these tools with students



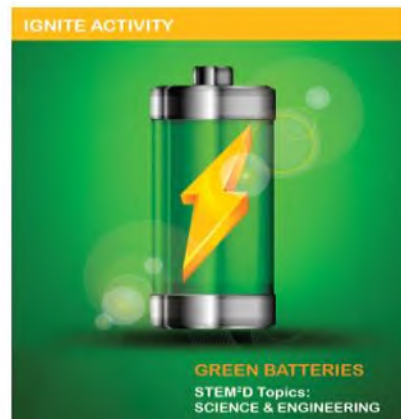
## STEM<sup>2</sup>D Program Activities



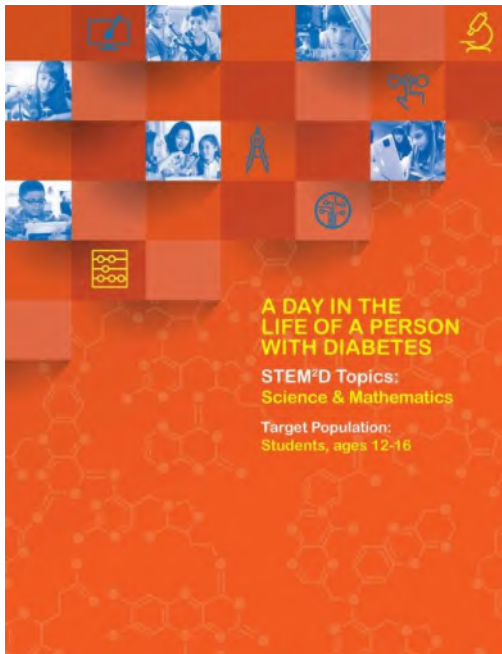
## Partner Programs & Resources

- FHI360 and Bridge to Employment Programs
- JA Worldwide Programs
- Smithsonian Science Education Center Programs & Learning Lab Content

For more details,  
visit [stem2d.org](http://stem2d.org)



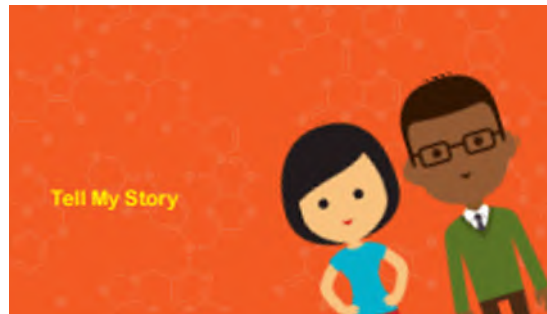
# SAMPLE WiSTEM<sub>2</sub>D ACTIVITY (HIGH SCHOOL)



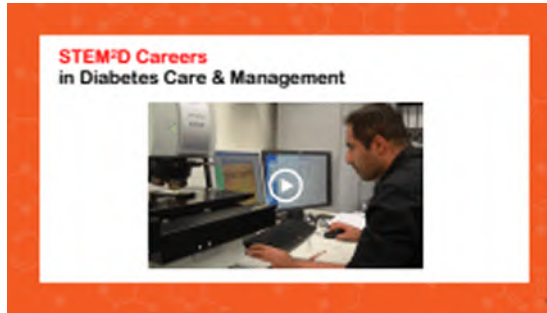
**A DAY IN THE LIFE OF A PERSON WITH DIABETES**

**STEM<sup>2</sup>D Topics:**  
Science & Mathematics


**Target Population:**  
Students, ages 12-16



**Tell My Story**



**STEM<sup>2</sup>D Careers  
in Diabetes Care & Management**



**Today's Plan**

- Learning about diabetes
  - Who Wants To Be a Millionaire?
  - Learning more about diabetes
- Diabetes lab
  - A day in the life of a diabetic
- STEM<sup>2</sup>D and diabetes
- Reflection exercise



**Types of Diabetes**

- Diabetes is a chronic condition:
  - It does not go away
  - It requires ongoing medical care that will likely change over time as the diabetes progresses.
  - Diabetes can be managed and treated with diet and/or insulin medication.
- There are three types of diabetes:
  - Type 1 Diabetes
  - Type 2 Diabetes
  - Gestational Diabetes

# NEXT STEPS

1. Go to [www.stem2d.org](http://www.stem2d.org) to read *Spark WiSTEM<sup>2</sup>D* and access activity resources
2. Meet with your BTE volunteer core team to align on which activities/ content fit in best with your plans for the year
3. Plan, implement and track your impact

