Expanding Horizons: Increasing Diversity Through Inclusive Teaching Guides

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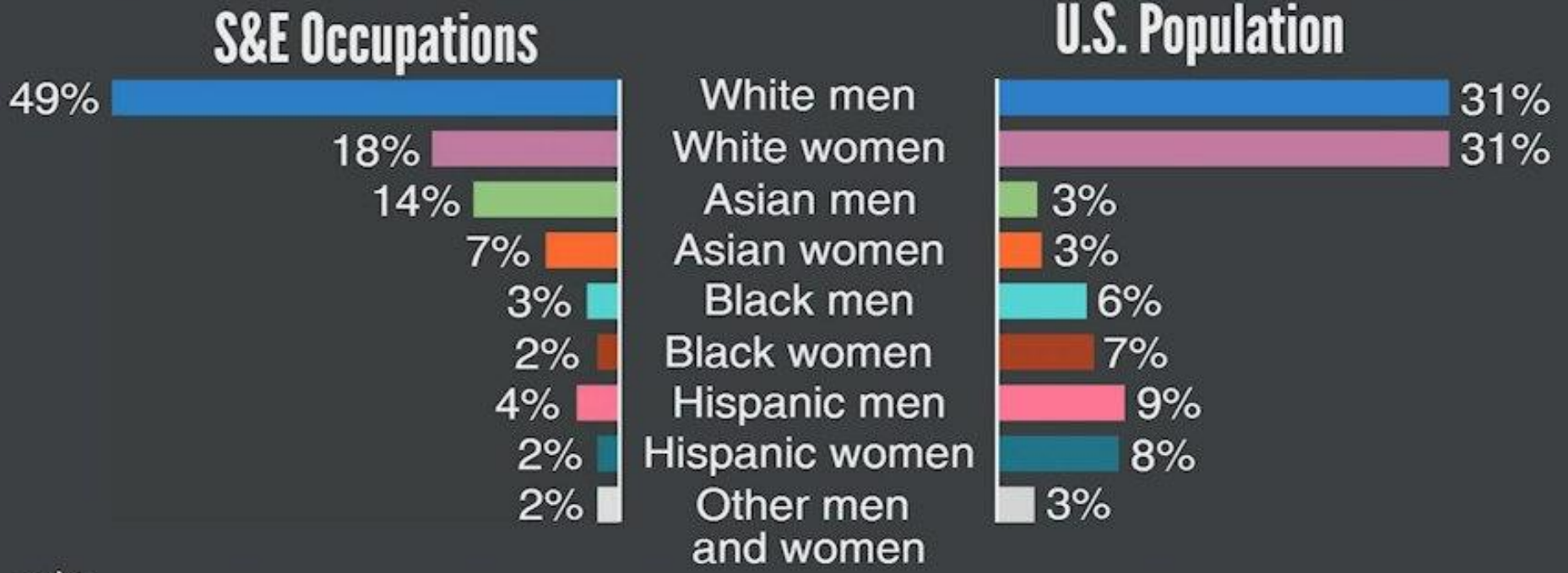
AIP Center for History of Physics

SPS

UNIVERSITY OF 18 56 MARYLAND

Workers in science and engineering occupations

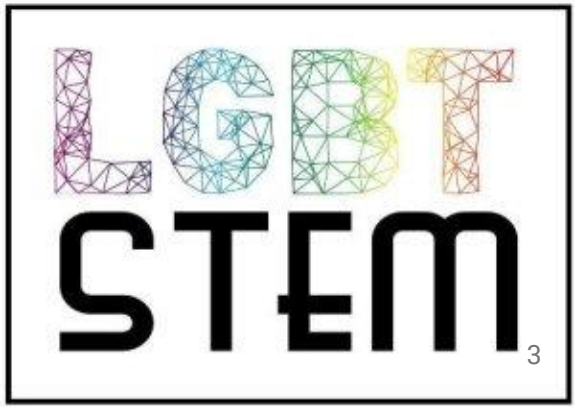
In 2015, women and some minority groups were represented less in science and engineering (S&E) occupations than they were in the U.S. general population.

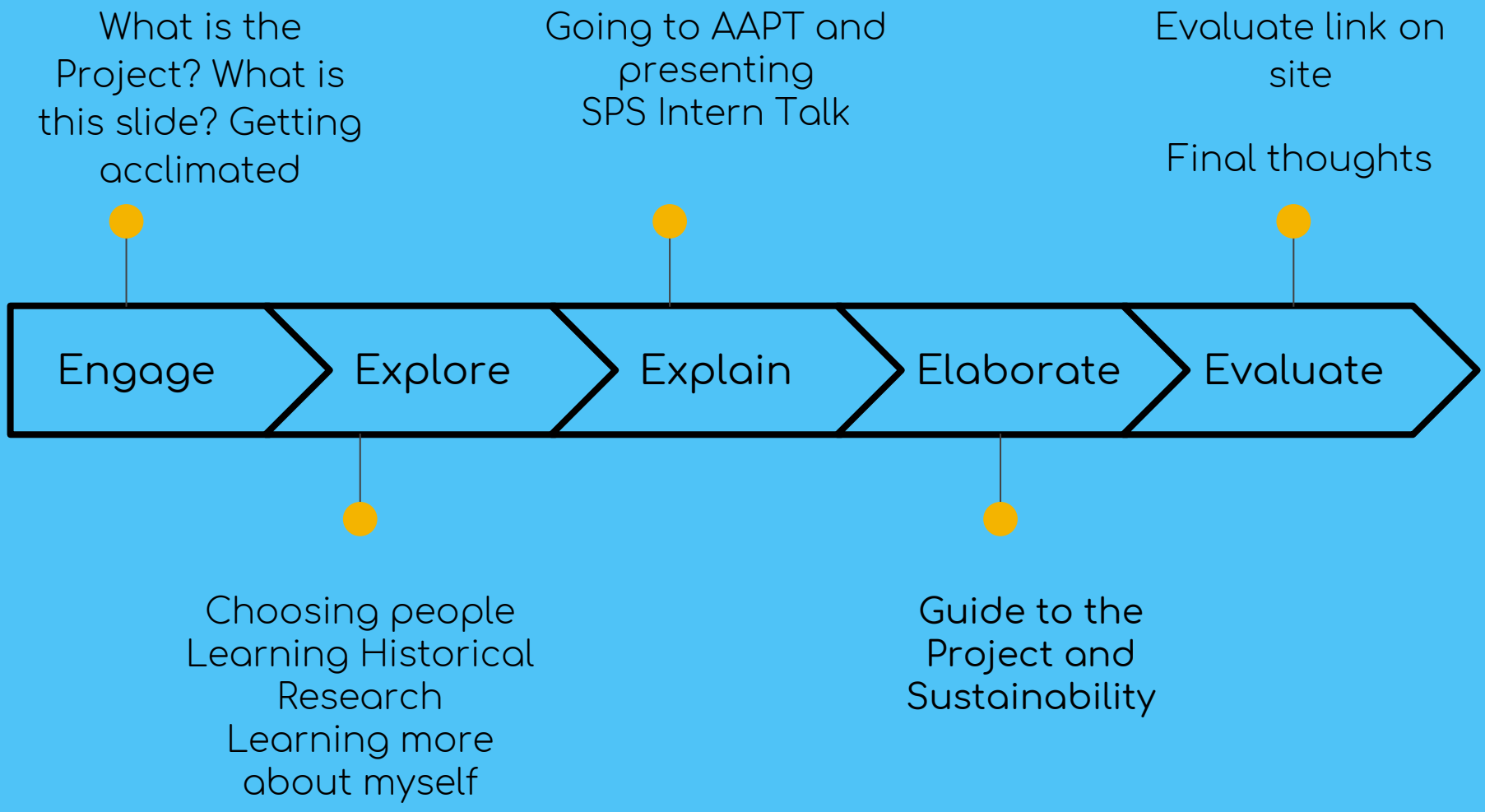


Source: National Center for Science and Engineering Statistics, National Science Foundation
Women, Minorities, and Persons with Disabilities in Science and Engineering: 2017
https://nsf.gov/statistics/wmpd/

Getting Acclimated

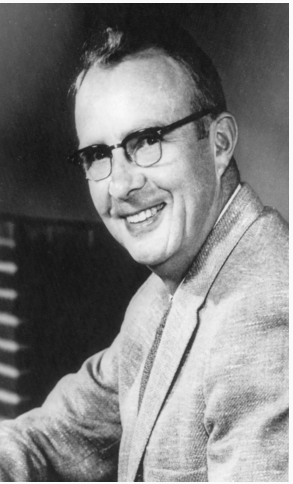
- My goal : Increase the total amount of teaching guides on Latinx, and Native American people.
- Learning the mechanics of a teaching guide
- Deciding who to choose
- Addition of LGBT + focus for LGBT STEM Day

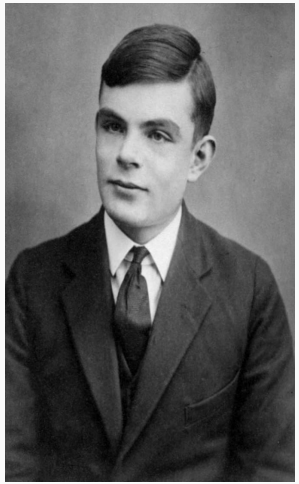


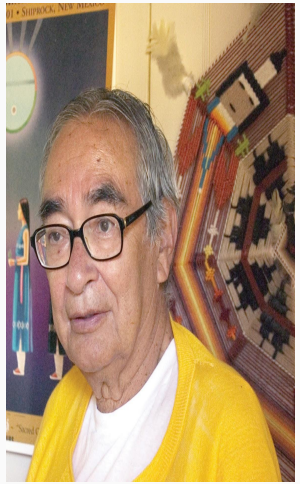

What is the Project? What is this slide? Getting acclimated
Going to AAPT and presenting SPS Intern Talk
Evaluate link on site
Final thoughts
Engage
Explore
Explain
Elaborate
Evaluate
Choosing people
Learning Historical Research
Learning more about myself
Guide to the Project and Sustainability

New Lesson Guides

- Luis Alvarez
- Victor Blanco
- Alan Turing
- Sally Ride
- Fred Begay/Fred Young/Clever Fox
- Wanda Diaz-Merced






Other Things I learned (explore)

I learned more about writing, and how to improve my own

I learned what working in an office space is really like

I learned what Historical Research is like, and the beautiful underground system of archives

How important this work is to inclusion and diversity

Lesson Plan
Luis Alvarez: Dinosaurs, Pyramids, and Bubble Chambers

Photograph by Jerome Danburg, courtesy AIP Emilio Segrè Visual Archives, Danburg Collection

Grade Level(s): 9-12	Subject(s): History, Particle Physics
In-Class Time: 60-90 min	Prep Time: 10-15 min

Materials

- **Print outs of Seeing Particles Activity or Access to computers**
- **Discussion sheets (In Resources Section below)**
- **Videos/Links:**
  - **Pyramid Video:** http://www.dailymail.co.uk/sciencetech/article-5040093/Hidden-structure-inside-Great-Pyramid-Giza.html
  - **Seeing Particles Activity:** http://epweb2.ph.bham.ac.uk/user/watkins/seeweb/BubbleChamber.htm
  - **What Really Killed the Dinosaurs:** https://www.youtube.com/watch?v=1iNcRJGzzxs

Objective

In this lesson plan, students will learn about the life of experimental physicist Luis W. Alvarez, as well as his contributions to particle physics. The activities in this guide are meant to highlight Alvarez' contributions to physics, while the readings are meant to highlight Luiz' other works in radar systems and extinction theories.

Introduction

(Explain)ing my work

Guide to the project

Reorganizing the filing system for future interns

Elaborate

Evaluate

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Materials for Teachers and Students: Teaching Guides on Women and Minorities

Over 50 teaching guides that highlight the often forgotten historical contributions of women and minorities to the physical sciences are available on this site. These teaching guides meet national educational standards, can fit into social and natural science courses, and are available for free. These resources are easily integrated in classrooms from first grade through the college level, and they will provide students with a diverse set of roles models while also calling attention to ongoing diversity issues in STEM. A teaching guide typically includes a lesson plan, discussion questions, and an answer key, as well as other readings and resources.

In addition to the Teaching Guides, the Center for History has also created two educational games about the history of physics, Phystory and Heads Up.

Selected Readings
Acknowledgements
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My Evaluation of the SPS Intern Program