Expanding Horizons: Increasing Diversity Through Inclusive Teaching Guides

Stephanie Williams, August 2018
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.

S&E Occupations:
- 49% White men
- 18% White women
- 14% Asian men
- 7% Asian women
- 3% Black men
- 3% Black women
- 2% Hispanic men
- 4% Hispanic women
- 2% Other men
- 2% Other women

U.S. Population:
- 31% White men
- 31% White women
- 3% Asian men
- 3% Asian women
- 6% Black men
- 7% Black women
- 9% Hispanic men
- 8% Hispanic women
- 3% Other men
- 3% Other women

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
Engage: What is the Project? What is this slide? Getting acclimated.

Explore: Choosing people. Learning Historical Research. Learning more about myself.

Explain: Going to AAPT and presenting SPS Intern Talk.

Elaborate: Guide to the Project and Sustainability.

Evaluate: Evaluate link on site. Final thoughts.
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://gweb2.ph.bham.ac.uk/user/watkins/seeweb/BubbleChamber.htm
  - What Really Killed the Dinosaurs: https://www.youtube.com/watch?v=1JnRjGzxs

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 Luis' other works in radar systems and extinction theories.

Introduction

Prepared by the Center for the History of Physics at AIP
Guide to the project

Reorganizing the filing system for future interns
Evaluate
My Evaluation of the SPS Intern Program