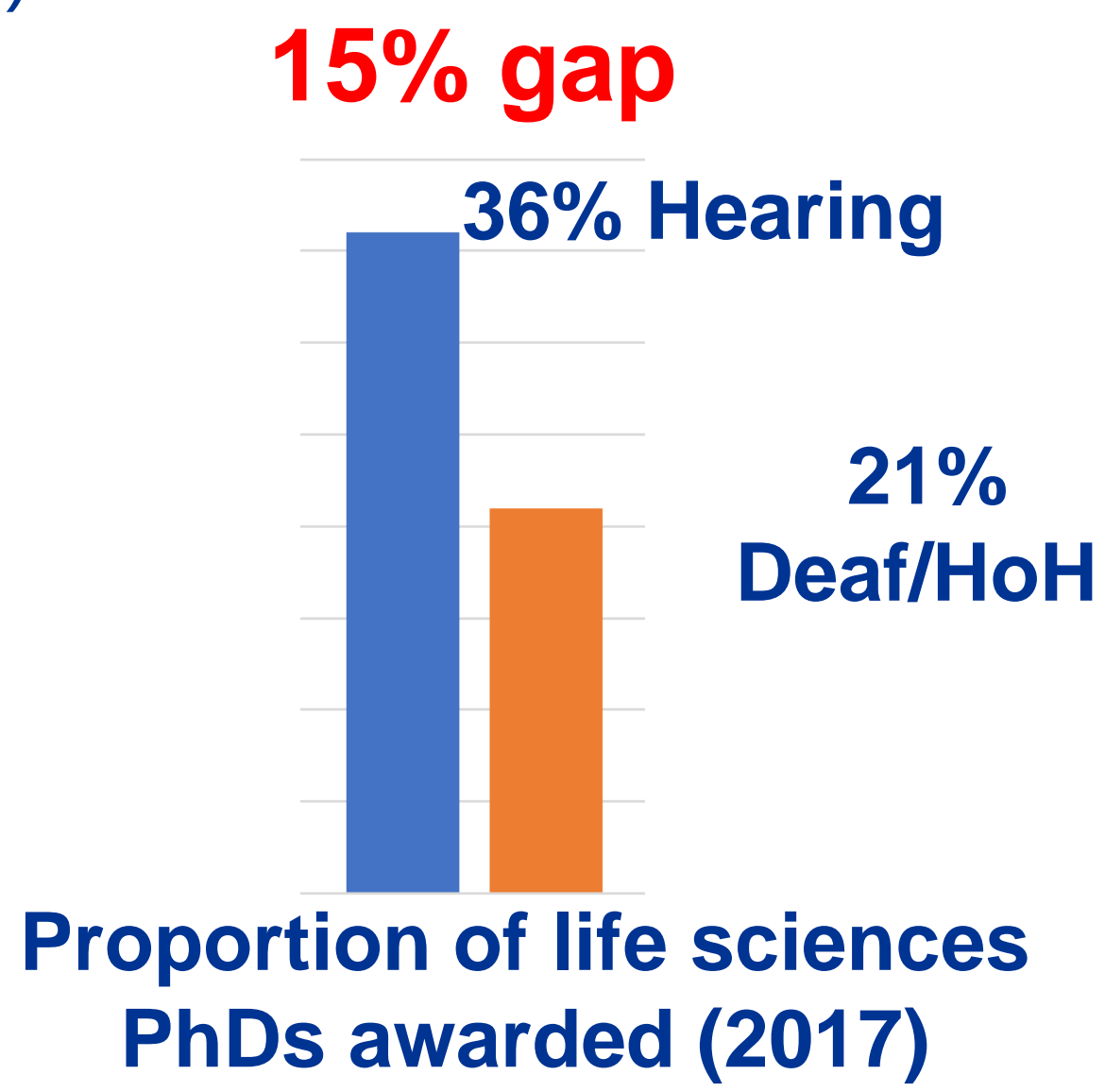


# Reducing language obstacles for future Deaf Scientists

Malihe Alikhani, David Boone, Richard D. Boyce, Kenneth De Haan, Sheila Pratt

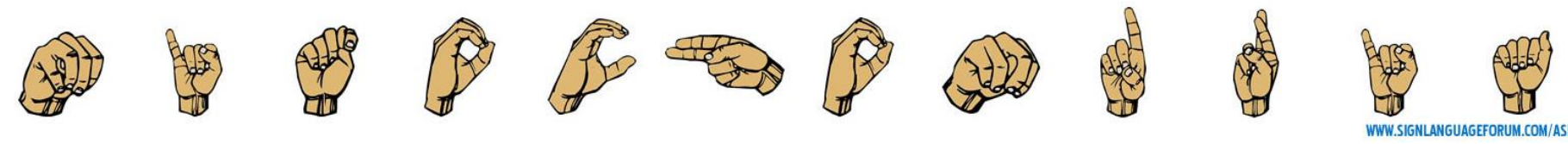
## Motivation

Disparities in achieving advanced research training for Deaf and Hard of Hearing (HoH)



## Reasons for the disparities

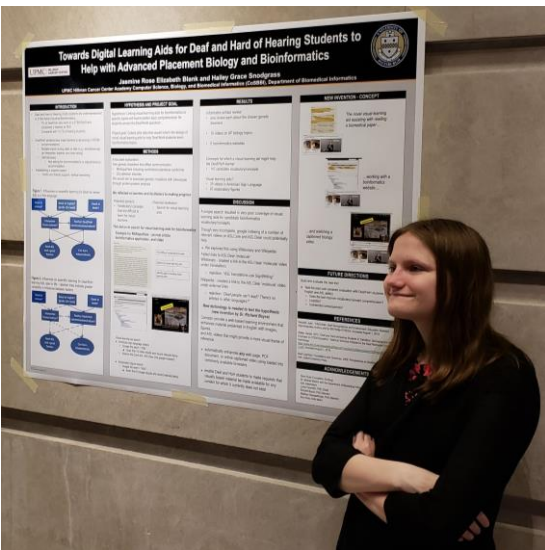
Deaf students whose first language is ASL must learn STEM in a second language where most of the words have no direct ASL counterpart



Besides language interpreters, there are very few resources available to help hearing STEM faculty mentor Deaf students in research and career advancement

Cross-cultural dynamics:

- Sign language
- Deaf culture



Professional soft skills:

- Communication
- Academic culture
- Conflict resolution

## Hypothesis

Information technology that interactively links material that is highly visual to specific STEM terms and phrases will improve Deaf students topic comprehension



# We aim to reduce language obstacles for future Deaf Scientists

Mentor biomedical researchers on involving Deaf and Hard of Hearing students research

Involve Deaf High school students in real-world research experiences and a network of Deaf scientists



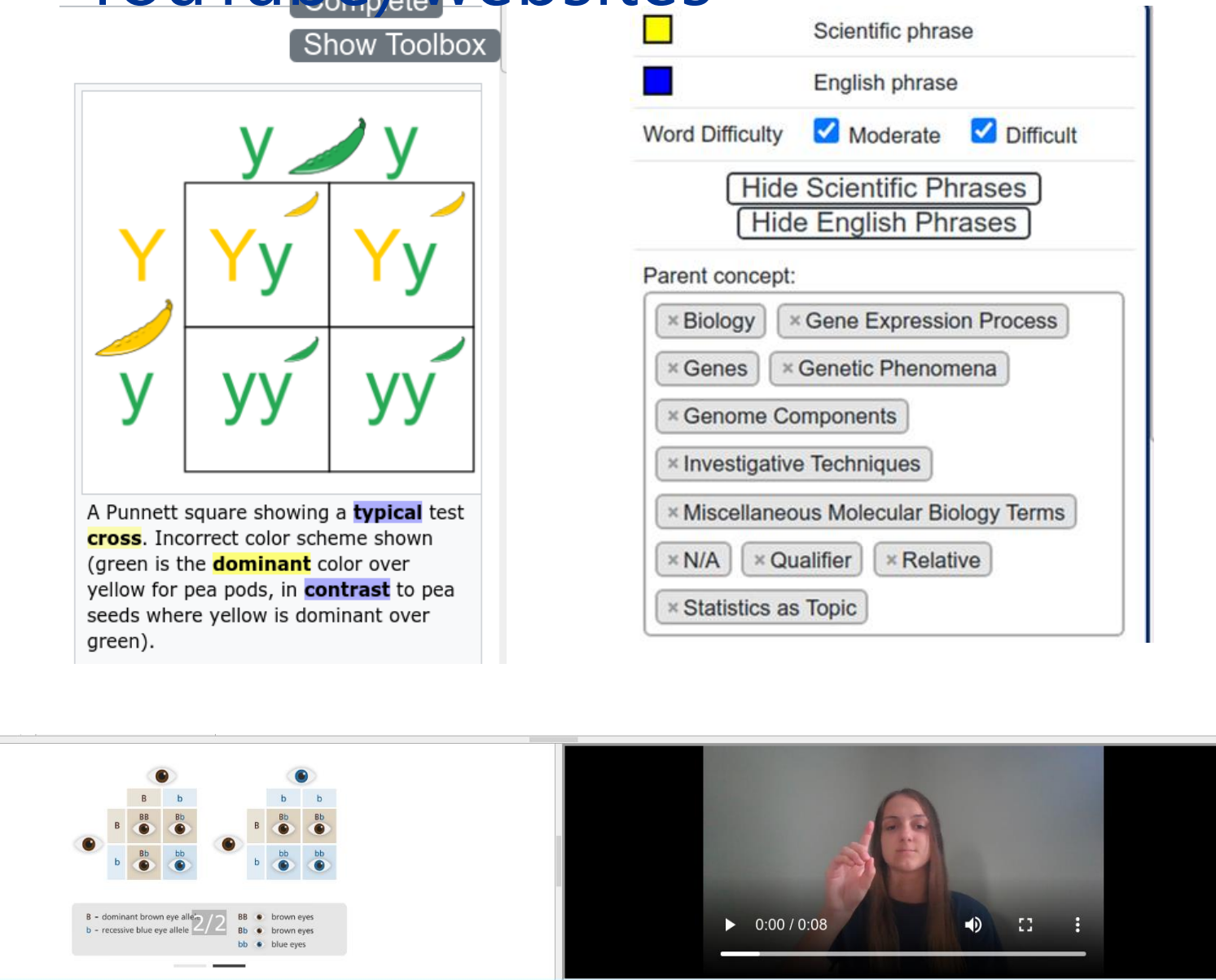
Involve graduate students in ASL and collect data to improve STEM ASL education

Continuous improvement that includes the development and evaluation of novel assistive technology



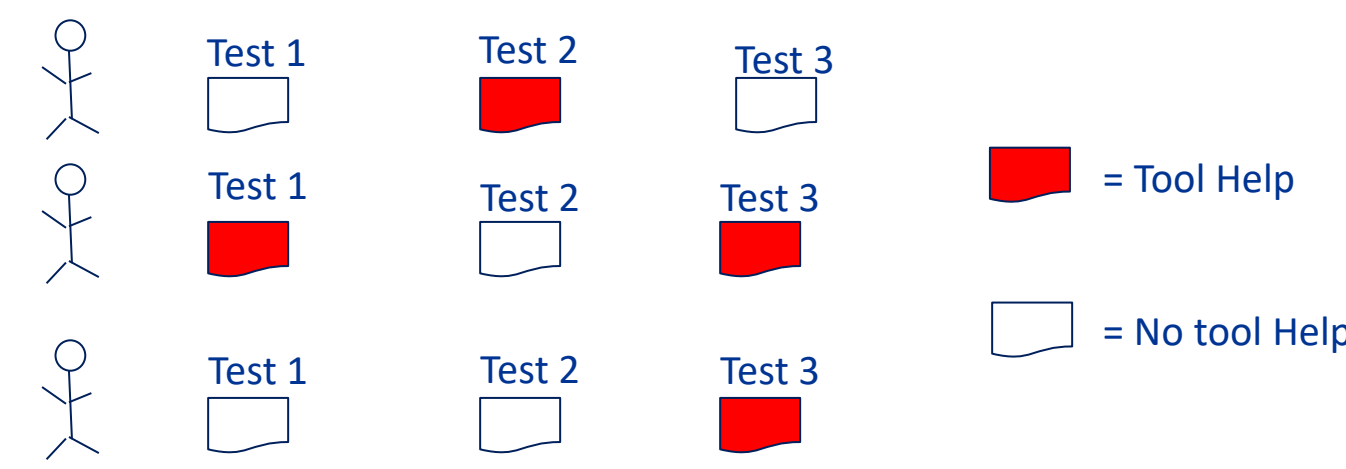
## Innovation

- A novel browser plug-in:
- Interactively links material that is highly visual to specific STEM terms and phrases
  - Works with narrative (Wikipedia) and visual (YouTube) websites



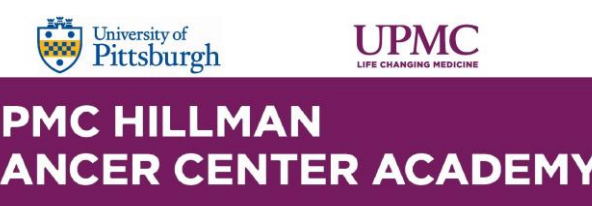
## Project Research Goal

Empirically evaluate the prototype to determine if it improves Deaf students accuracy on AP Biology test questions



## Team

Multidisciplinary members from three schools and two universities



## Potential Impact

- Follow on funding
- National Science Foundation, National Library of Medicine

- Shared data
- Annotated ASL STEM videos that will inform novel language models

- Technology
- Pittsburgh Invention Disclosure Number: 04688.2018