Research Questions

(1) How do LAs impact the amount of physics that students learn? (Efficacy)
(2) How do LAs impact the equality of physics learning? (Equity)

The LA Alliance

Learning Assistants are undergraduate students who are hired by university faculty to help transform undergraduate courses to include small groups of students articulating, defending, and modifying their ideas about relevant problems or phenomena.

Data Collection/Analysis

LA Supported Student Outcomes (LASSO) tool

Level 2: Course

- Course 1
- Course 2
- Course 3

Level 1: Student

- Course 1 Students
- Course 2 Students
- Course 3 Students

Level 1 (N=3,753 students) • Pre & post scores
- Discipline
- Race
- Ethnicity

Level 2 (N=69 classes in 17 institutions) • Discipline
- Uses of LAs

Cohen's $d = \frac{\text{Post - Pre Class S.D.}}{\text{pooled}}$

Efficacy Outcomes

1. Courses with LAs have 1.4x more learning than courses without LAs.
2. All uses of LAs were associated with improved learning.

Equity Outcomes

Gap = $d_{\text{non-dom}} - d_{\text{dominant}}$

1. Traditional learning gaps are inverted for courses with LAs (i.e., students from non-dominant backgrounds learn more than their peers).

Future Work

(1) Characterize LASSO data with nationally normed data
(2) Disaggregate non-dominant status
(3) Examine the impacts of disciplinary LA practices

Why Participate?

LASSO Instruments

- Force and Motion Concept Evaluation (FMCE)
- Force Concept Inventory (FCI)
- Brief Electricity and Magnetism Assessment (BEMA)
- Conceptual Survey of Electricity and Magnetism (CSEM)
- Colorado Learning Attitudes about Science Survey - Physics (CLASS)
- Chemistry Concept Inventory (CCI)
- Colorado Learning Attitudes about Science Survey - Chemistry (CLASS)
- Genetics Concept Assessment (GCA)
- Introductory Molecular and Cell Biology Assessment (IMCA)
- Colorado Learning Attitudes about Science Survey - Biology (CLASS)
- Pre-Calculus Assessment (PCA)
- Calculus Concept Inventory (CCI)
- Light and Spectroscopy Concept Inventory (LSCI)
- Perceptions of Teaching as a Profession (PTAP)

How to participate

(1) Join the LA Alliance (no LAs required!) (learningassistantalliance.org)
(2) Answer a few questions about your course
(3) Upload a class and start the pre-assessment—including email notifications to your students—with a click of the mouse
(4) Run the post-assessment at the end of your course
(5) Get a detailed report and complete results
(6) Enjoy free time

Sample Report