

Learning Actively  
Mentoring Program

# Measuring Changes in Students' Perception of Active Learning and Feelings of Inclusion

Original Lilly Conference on College Teaching  
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University of Wyoming  
2019

# Students' Perception of Active Learning

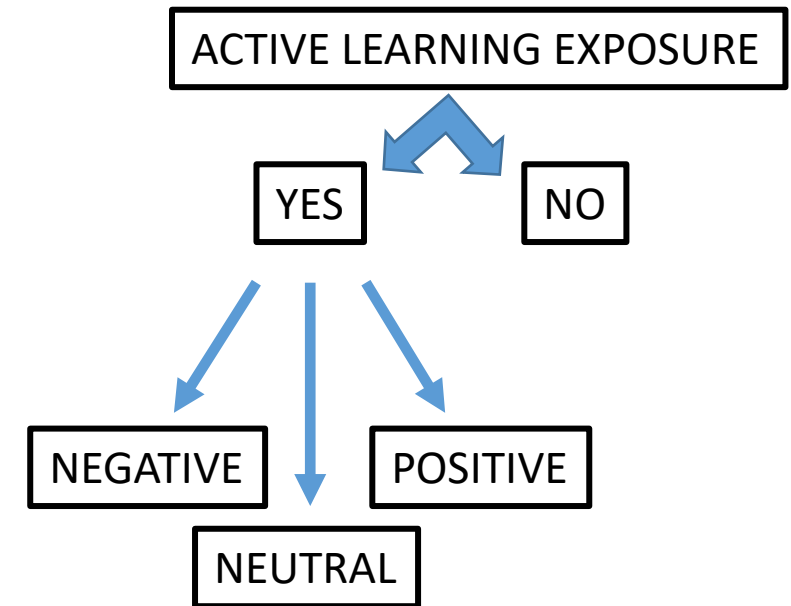
## Coding Activity

1. Form small groups
2. Each group will receive a set of student responses to “code”, tape and a large white sheet of paper
3. Your task is to group the responses based on the following:

**+/-** Active Learning exposure

Was active learning experience **positive/negative/neutral**

4. Use tape and the white sheets provided to group your responses
5. Take 1-2 minutes to discuss what the different colors of paper may represent



# Active Learning Survey

- Offered to faculty members who had participated in a year-long educational development program called the Learning Actively Mentoring Program (LAMP)
- Developed in collaboration with trained faculty
- Measured
  - Students' experience with active learning and how these experiences impacted their attitudes, feelings behaviors and sense of inclusion
  - Demographics (open-ended)
- Administered using a Google form



# Coding Methods

- Students were assigned a number so their anonymity was preserved
- Response to a single question was coded by 3 faculty members

## **PRE-SEMESTER SURVEY QUESTION:**

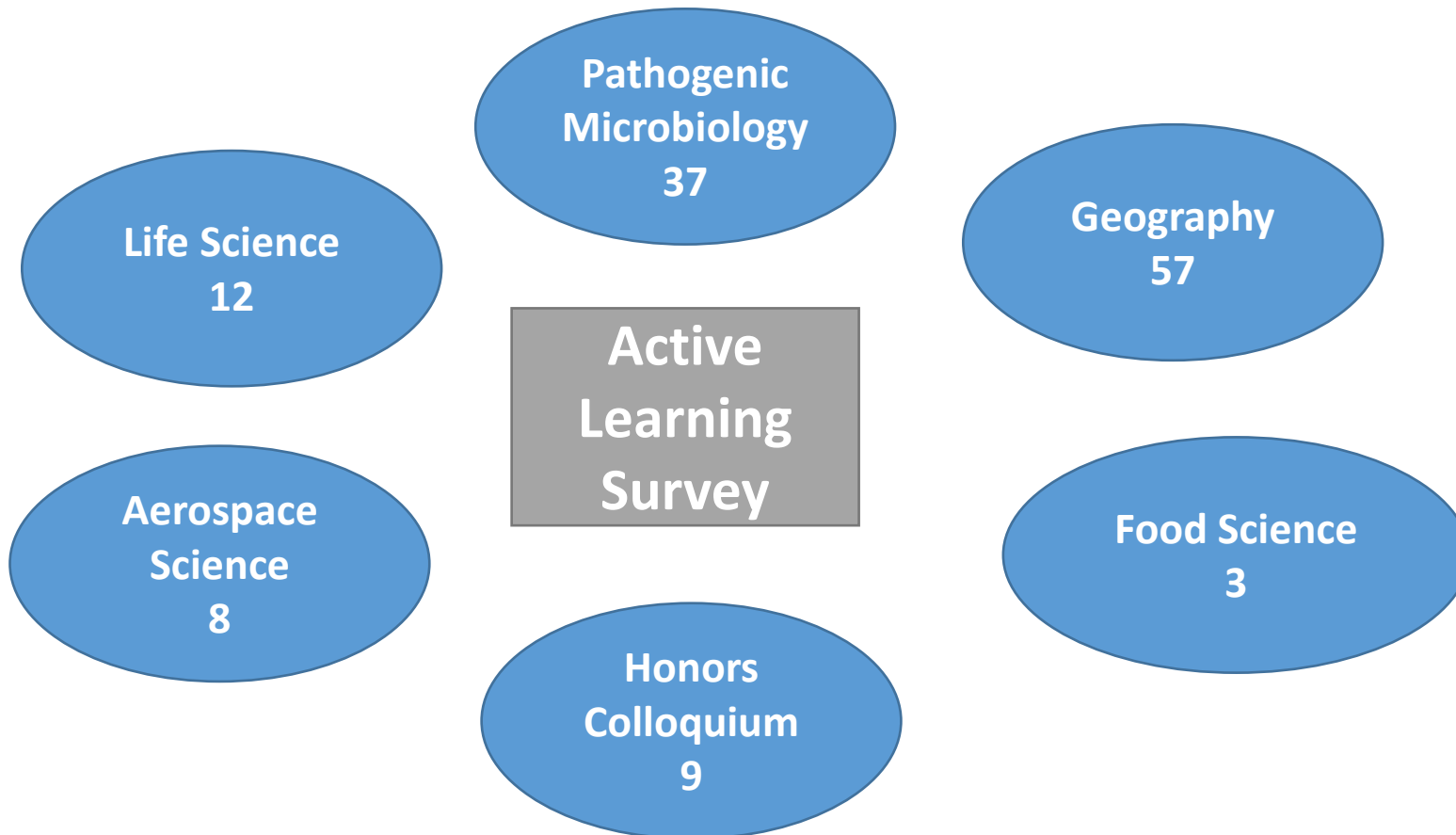
*Tell us about your experience with active learning prior to this semester.*

## **POST-SEMESTER SURVEY QUESTION:**

*What was your experience with active learning during this semester?*

# Results of Coding

- 6 Instructors participated in both the pre/post Active Learning Survey
- Results from students with pre and/or post responses included



# Examples of Raw Coding Data

## LIFE SCIENCE FOR NON-MAJORS

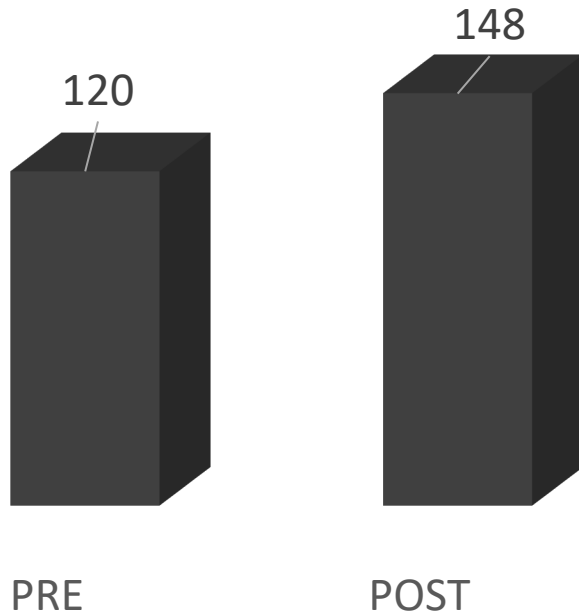
	Pre	Post														
experience	<table border="1"><tr><td>no</td><td>1</td></tr><tr><td>neut</td><td>4</td></tr><tr><td>yes</td><td>18</td></tr></table>	no	1	neut	4	yes	18	<table border="1"><tr><td>yes</td><td>14</td></tr><tr><td>neutral</td><td>5</td></tr><tr><td>negative</td><td>0</td></tr><tr><td>positive</td><td>9</td></tr></table>	yes	14	neutral	5	negative	0	positive	9
no	1															
neut	4															
yes	18															
yes	14															
neutral	5															
negative	0															
positive	9															
	<ul style="list-style-type: none"><li>-neutral 4</li><li>-Hands On 1</li><li>-negative 1</li><li>-positive 13<ul style="list-style-type: none"><li>Fun/Engaging 3</li><li>Learning/Benefit 8</li><li>-Hands On 4</li><li>Teamwork 1</li></ul></li></ul>	<ul style="list-style-type: none"><li>-Confidence to Implement 2</li><li>-Learning/Benefit 2</li><li>-Teamwork 1</li><li>Fun/Engaging 6</li><li>Learning/Benefit 4</li><li>Teamwork 2</li></ul>														

## PATHOGENIC MICROBIOLOGY

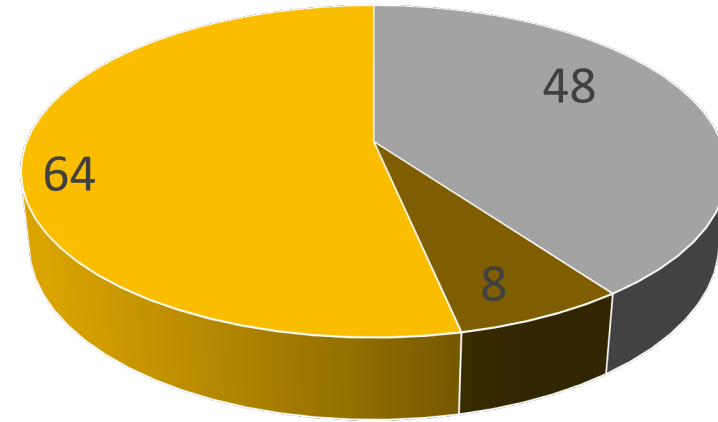
	PRE	POST										
experience	<table border="1"><tr><td>no</td><td>10</td></tr><tr><td>neut</td><td>2</td></tr><tr><td>yes</td><td>28</td></tr></table>	no	10	neut	2	yes	28	<table border="1"><tr><td>no</td><td>n/a</td></tr><tr><td>yes</td><td>36</td></tr></table>	no	n/a	yes	36
no	10											
neut	2											
yes	28											
no	n/a											
yes	36											
	<ul style="list-style-type: none"><li>-Neutral 13</li><li>-Real life 2</li><li>-Teamwork 3</li><li>-Effort/Reward 2</li><li>-negative 3</li><li>-Teach me 3</li><li>-positive 12</li><li>-Fun 6</li><li>-Learning 6</li><li>-Effort/Reward 2</li><li>-Transformative 1</li></ul>	<ul style="list-style-type: none"><li>-yes/no 2</li><li>-neutral 4<ul style="list-style-type: none"><li>-teaching as learning 2</li><li>-metacognition 1</li></ul></li><li>-negative 3<ul style="list-style-type: none"><li>-Teach me 2</li></ul></li><li>-positive 27<ul style="list-style-type: none"><li>-Instructor Buy In 3</li><li>-Fun 9</li><li>-Learning 15</li><li>-Effort/Reward 4</li><li>-Transformative 1</li><li>-Teamwork 1</li></ul></li></ul>										

# Results of Coding

Increased # of Students  
Experience With Active Learning

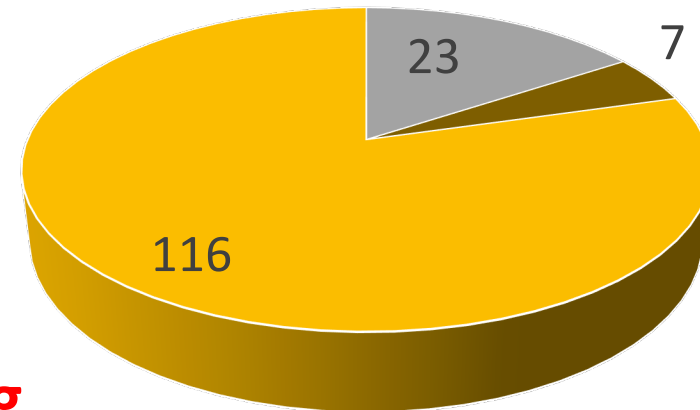


Pre Semester Responses



■ neutral feelings ■ negative feelings ■ positive feelings

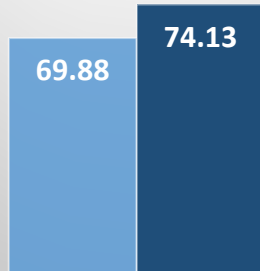
Post Semester Responses



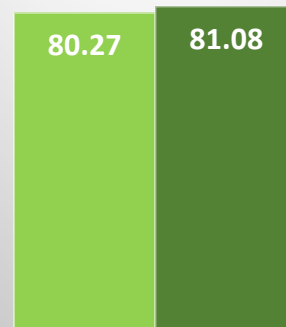
**45% increase in # of students  
with positive feelings about active learning**

# Emerging Themes with Active Learning

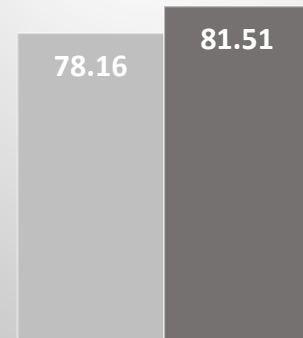
## TEAMWORK



## METACOGNITION



## ENGAGEMENT



**\*\*Data from 14 Likert-type scale questions of a single course, 37 students**



# Assessing Inclusivity

# Likert-type Scale Questions for Inclusivity

- Utilized the Active Learning Survey
- Only included students with both pre and post survey responses
- 7 questions:

*I can equally participate in a team*

*I can study with peers from my team*

*I am afraid to ask questions when my team works together*

*I can contribute to team discussions*

*My opinion has been valued in team discussions*

*I am treated with respect by my instructor*

*I am treated with respect by my group members*

*I enjoy activities when they involve learning in a group*

# Likert-type Scale Questions for Inclusivity

- 5 possible responses, maximum score of 40

**Strongly agree → Agree → Neutral → Disagree → Strongly disagree**

(5)

(4)

(3)

(2)

(1)

- Total score converted to a percentage

*I can equally participate in a team*

*I can study with peers from my team*

*\*I am afraid to ask questions when my team works together*

*I can contribute to team discussions*

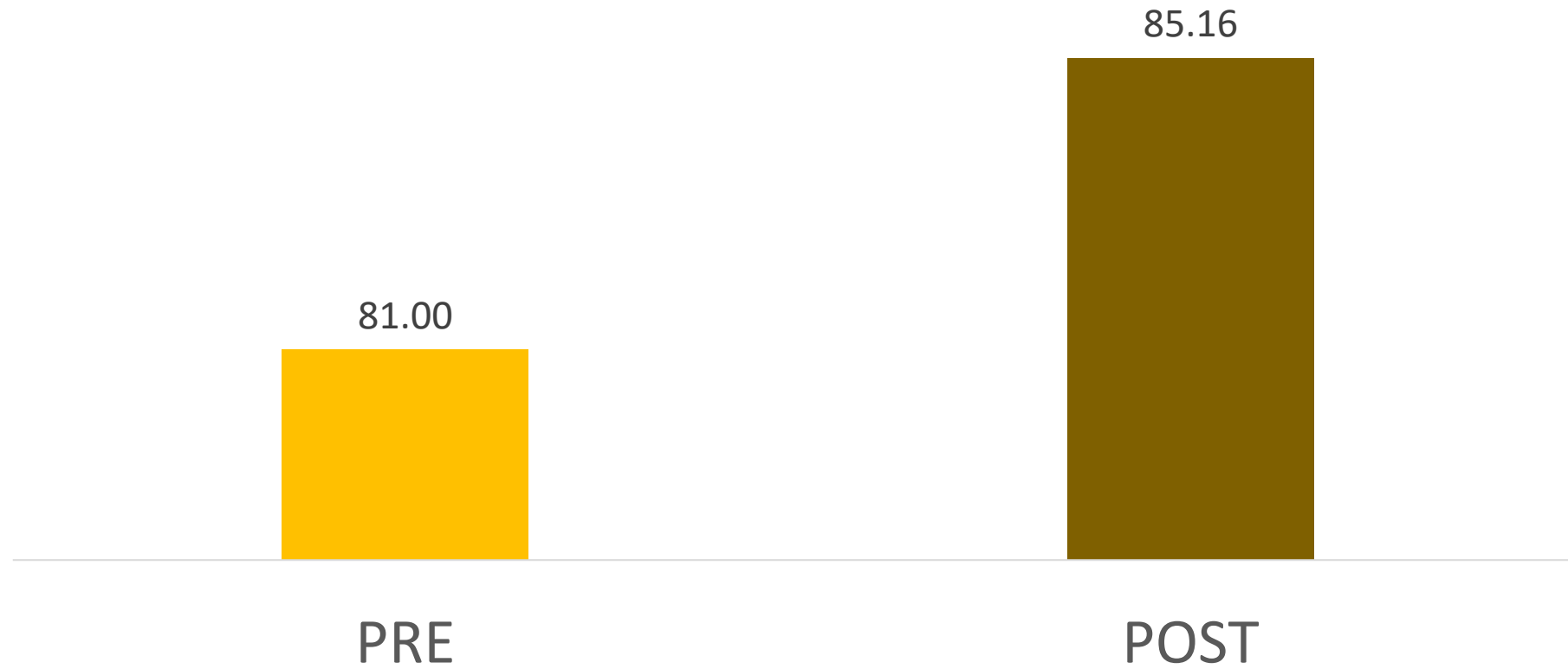
*My opinion has been valued in team discussions*

*I am treated with respect by my instructor*

*I am treated with respect by my group members*

*I enjoy activities when they involve learning in a group*

# Inclusivity Increased in UW Active Learning Classrooms Over 1 Semester



**OVER 4% INCREASE IN INCLUSIVITY**

Is there more inclusivity of  
marginalized groups with active  
learning?

# Demographic Data

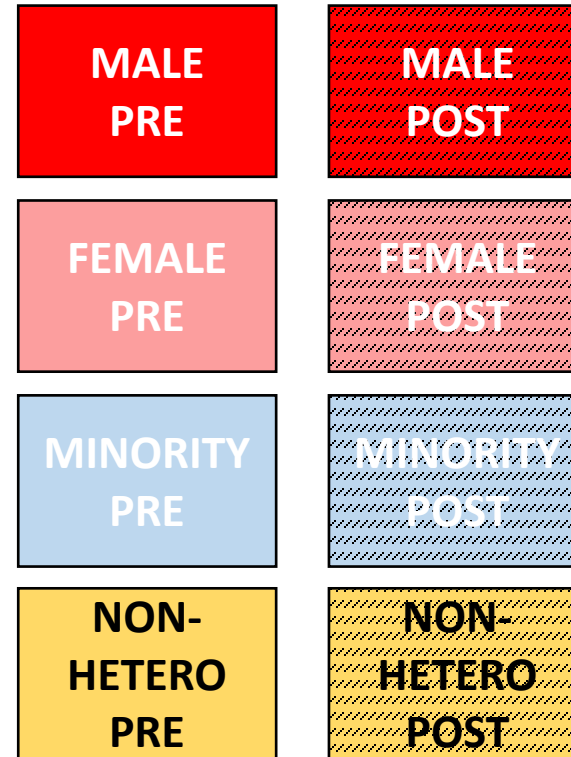
- Utilized the Active Learning Survey
- Questions for
  - Race/Ethnicity
  - Biological Sex
  - \*Gender Identity
  - Sexuality
  - Disability (visible or invisible)
  - Transfer student
- Back to the Active Learning Activity: what the colored paper represents

# Demographic Data

- Utilized the Active Learning Survey

- Questions regarding:

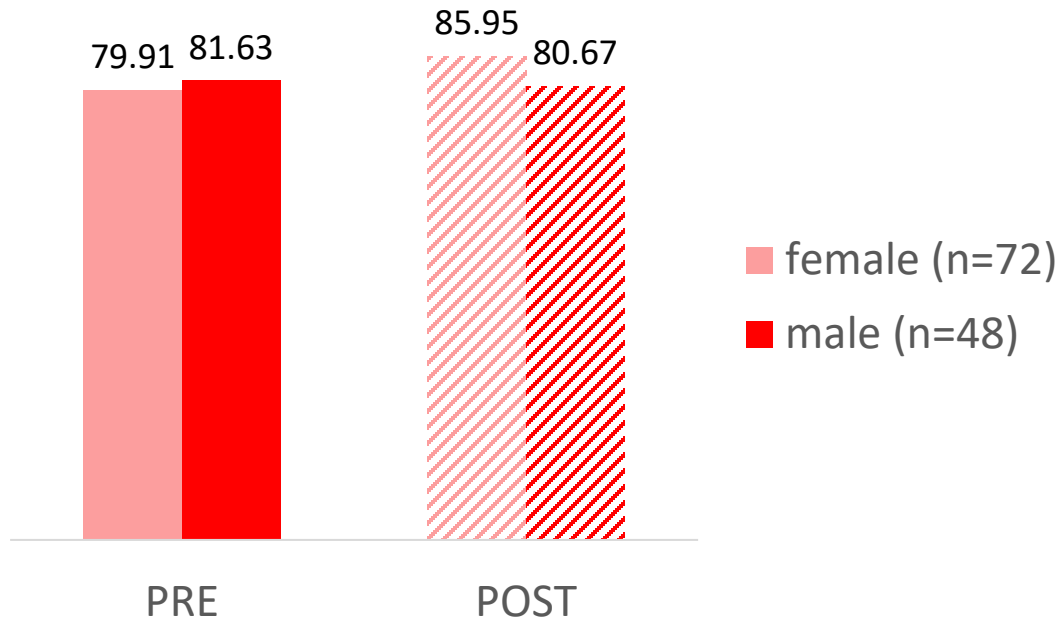
- Race/Ethnicity
- Biological Sex
- \*Gender Identity
- Sexuality
- Disability (visible or invisible)
- Transfer student



- Back to the Active Learning Activity.....what the colored paper represents

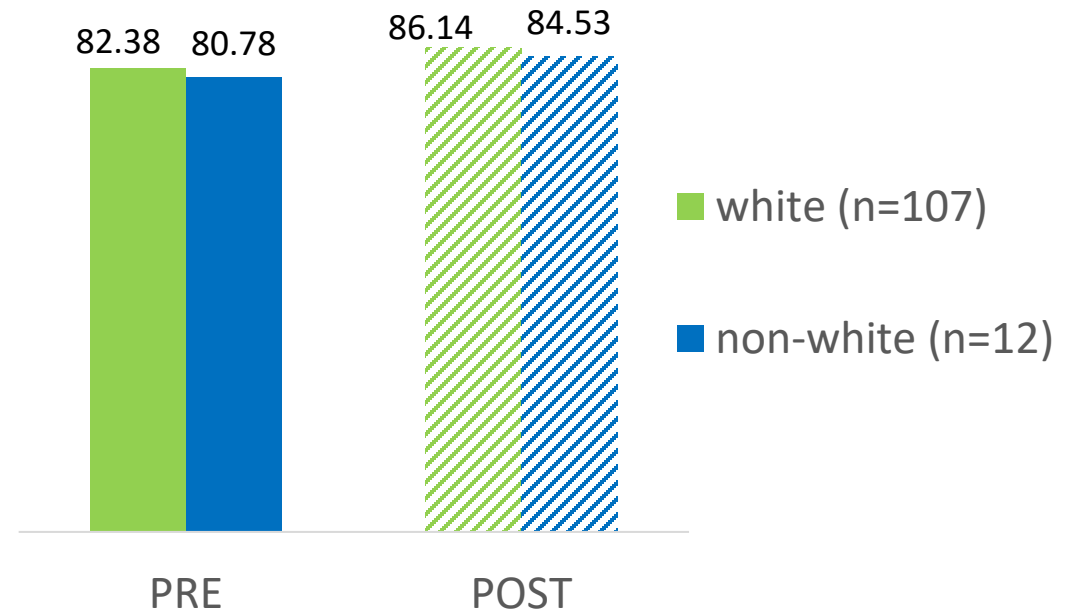
# Demographics and Inclusivity

## Inclusivity in Relation to Gender



**OVER 6% INCREASE IN INCLUSIVITY  
IN FEMALES**

## Inclusivity in Relation to Race

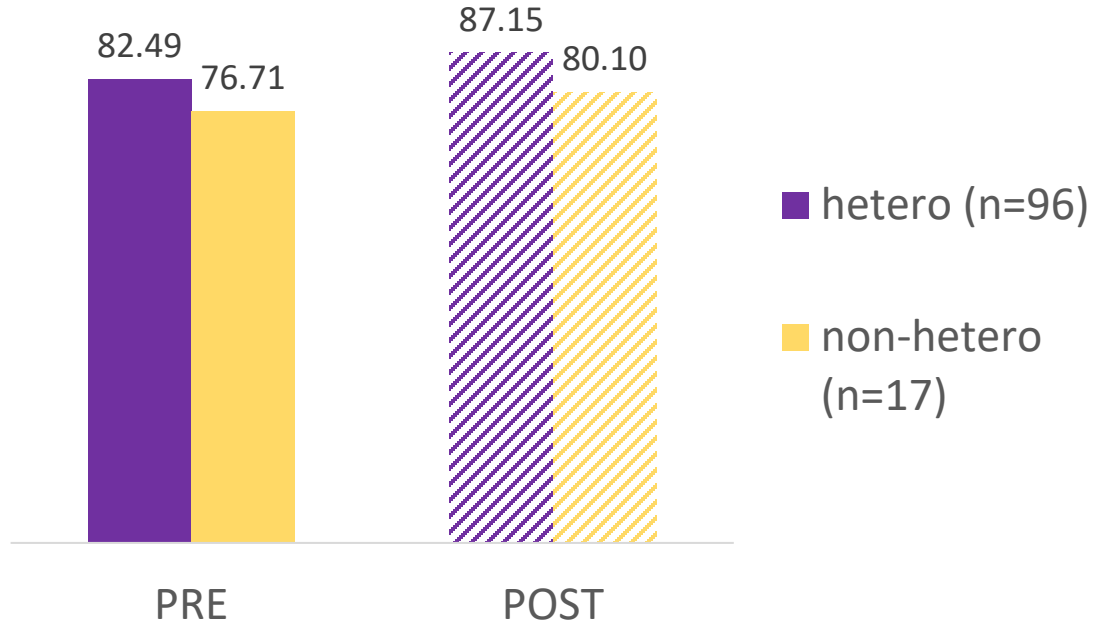


**OVER 3% INCREASE IN INCLUSIVITY  
REGARDLESS OF RACE**



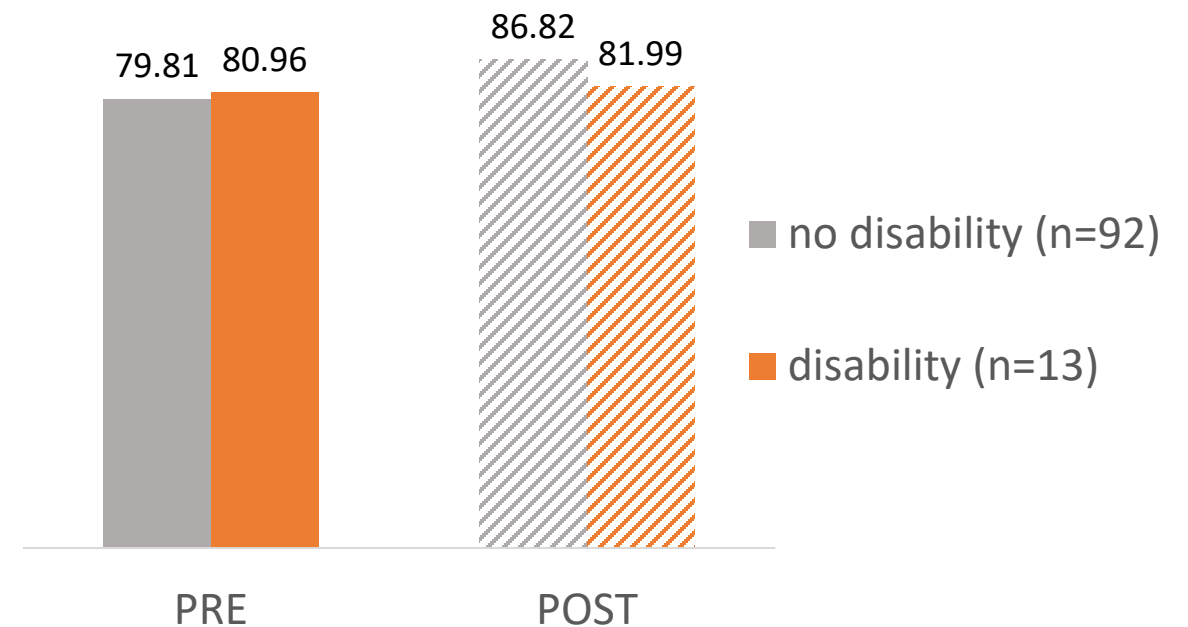
# Demographics and Inclusivity

## Inclusivity in Relation to Sexuality



**OVER 4% INCREASE IN INCLUSIVITY  
REGARDLESS OF SEXUALITY**

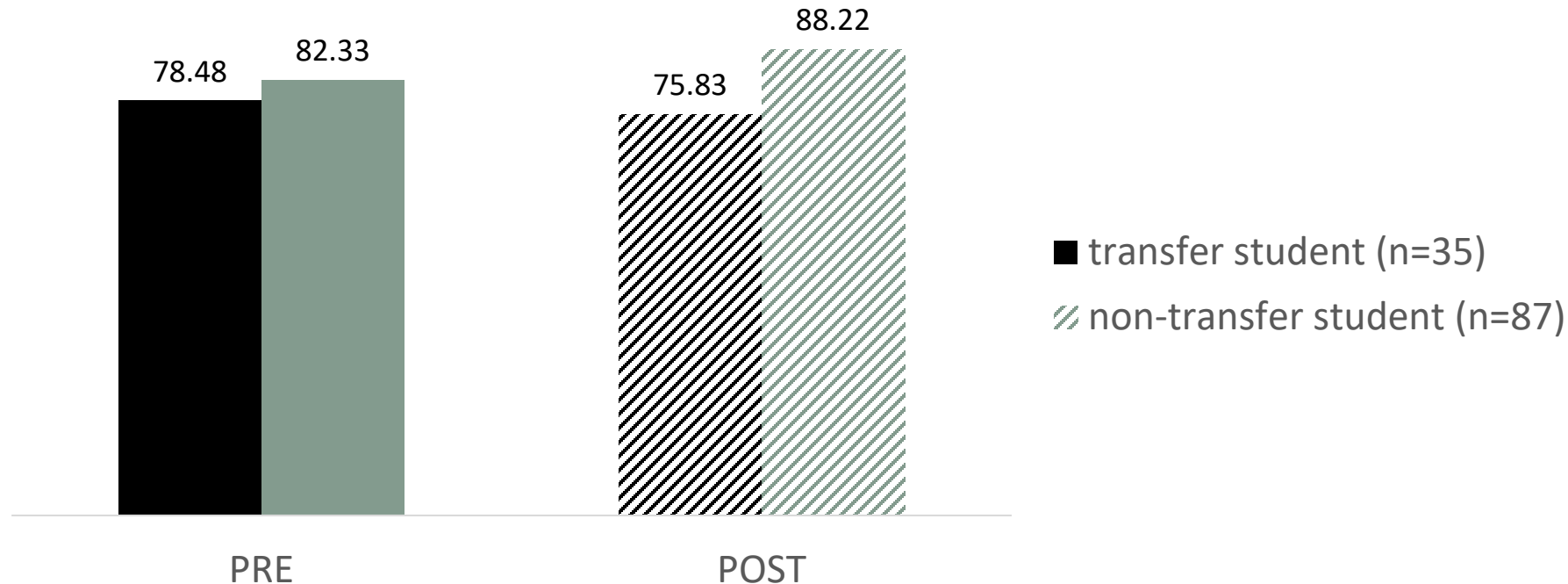
## Inclusivity in Relation to Disability



**OVER 7% INCREASE IN INCLUSIVITY  
REGARDLESS OF DISABILITY**

# Demographics and Inclusivity

Inclusivity in Relation to Transfer Student Status

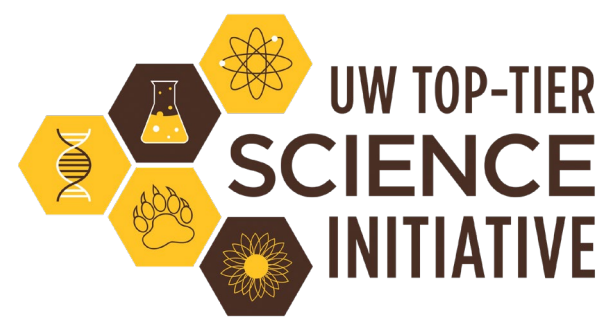


**NEARLY 6% INCREASE IN INCLUSIVITY  
IF NON-TRANSFER STUDENT**

**NEARLY 2.5% DECREASE IN INCLUSIVITY  
IF A TRANSFER STUDENT???**

# Summary

- **Over the course of 1 semester, using 6 courses across multiple disciplines:**
  - Approximately 100 students for both pre and post response to active learning exposure
    - Over **45%** increase in number of students with positive feelings toward active learning
  - Approximately 120 students for both pre and post Likert-type scale questions
    - **4%** overall increase in inclusivity based on answers to Likert-type scale questions
    - **6%** increase if self-identified as female or a non-transfer student
- **The Active Learning Survey is available for you and your courses when you are ready!**



# Acknowledgements



Learning Actively  
Mentoring Program

- Rachel Watson
- SI<sup>2</sup> and LAMP fellowship program
- Educator Learning Community *"Leaving the Light On"*
  
- Funding
  - UW Science Initiative

