



# Supporting Incoming Graduate Students through a Peer-tutoring and Mentorship Program

Symposium for Educational Excellence, OHSU

May 20, 2021

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# PMCB: umbrella PhD program for biomedical research

## Program in Molecular & Cellular Biosciences

- Biochemistry
- Genetics
- Cell and Developmental Biology
- Immunology and Microbiology
- Cancer Biology
- Physiology and Pharmacology
- Biomedical Engineering

# Path to PhD



# First Year of PMCB Changed

	Fall (12 weeks)		Winter			Spring
Prior to 2017	Biochemistry		Bioregulation			Elective
	Genetics		Cell Biology			Elective
	Lab Rotation 1		Lab Rotation 2			Lab Rotation 3
2017 - 2019	Biochemistry	Cell Biology	Lab 1	Lab 2	Lab 3	Electives
	Genetics	Bioregulation				<b>START RESEARCH</b>

Accelerated curriculum

# Unintended Consequences

## **Academically**

- Leaves behind students w/o broad backgrounds
- Prioritizes memorization rather than application and creativity
- Test-based grading promotes studying to the test

## **Socially**

- Isolated from faculty and senior PMCB students
- Separated from cohort in winter

How can 2<sup>nd</sup> year students  
help 1<sup>st</sup> years transition into  
graduate school?

# PMCB Student Learning Center (SLC)

## Methods

- **Bootcamp**
  - Onboarding and fall course background review session
- **SLC – evening study center**
  - Twice-weekly study session
  - Dinner to encourage attendance and promote community

**Funding:** Innovations in Education Mini-grant

## Goals

- Academic support
- Build community
- Lab rotation advice
- Softer landing into grad school

# PMCB Cohorts

1<sup>st</sup> years: 2019 cohort  
SLC intervention

2<sup>nd</sup> years: 2018 cohort  
Tutors  
No SLC intervention

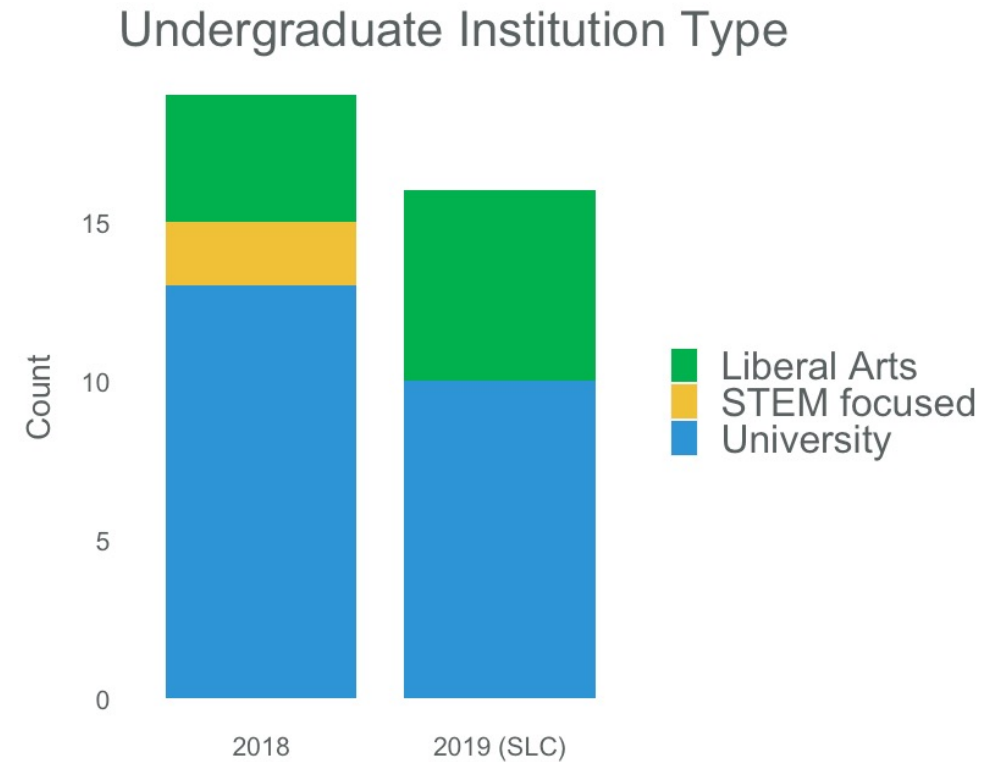
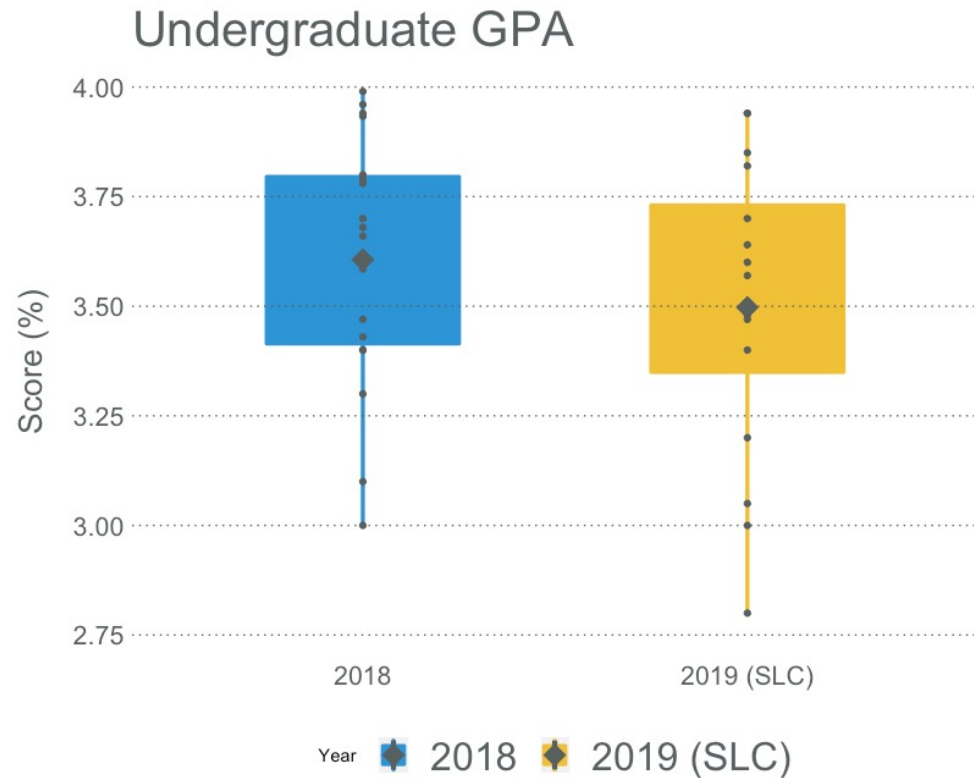


# PMCB: Program in Molecular & Cellular Biosciences

Incoming cohort figures:

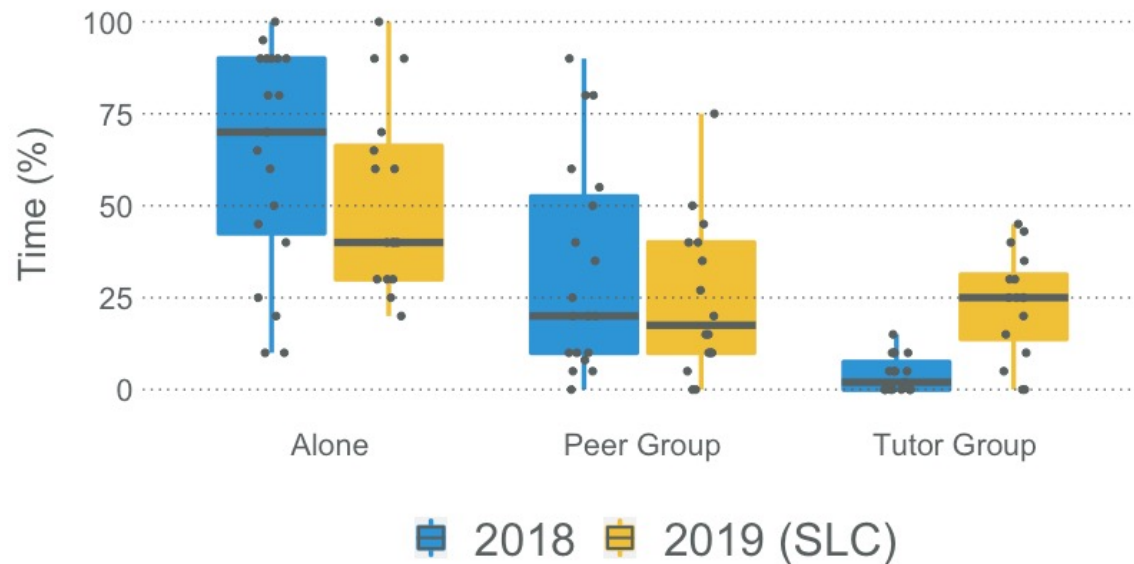
- 10 undergraduate majors (average > 3.5 GPA)
- Primarily coming from large universities or liberal arts
- 0 - 5 academic years between undergraduate and start of PhD
- ~20% with master's degree
- < 5 international students

# Negligible difference between cohorts

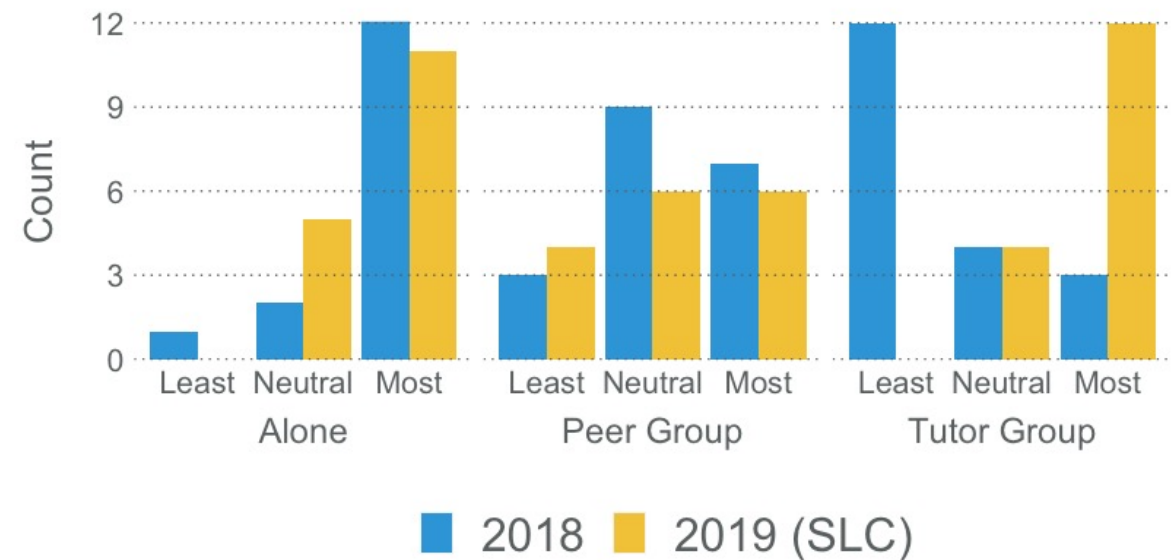


# SLC students spent relatively more time studying in peer groups or with TAs and found those strategies more effective

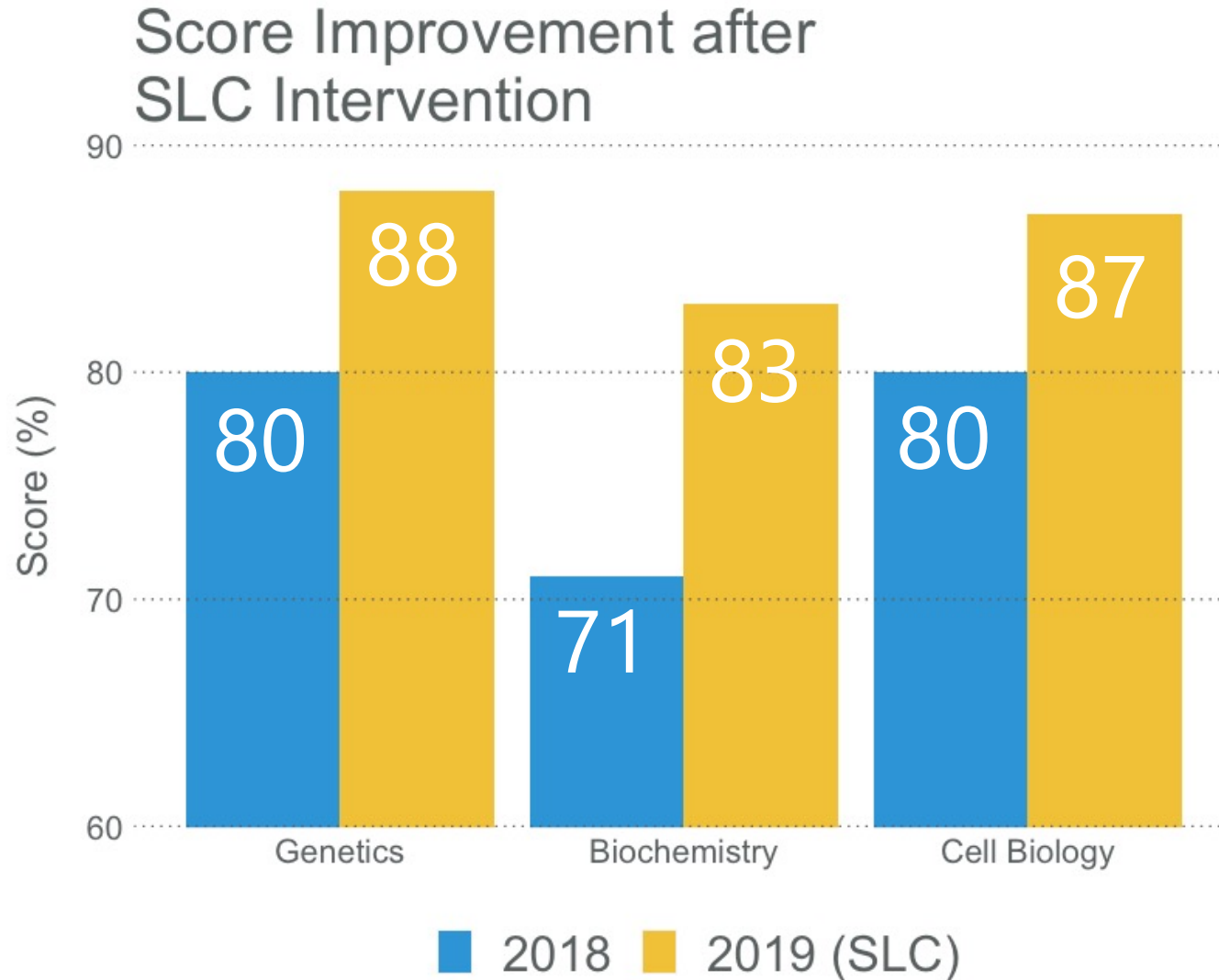
## How often did you use this study strategy?



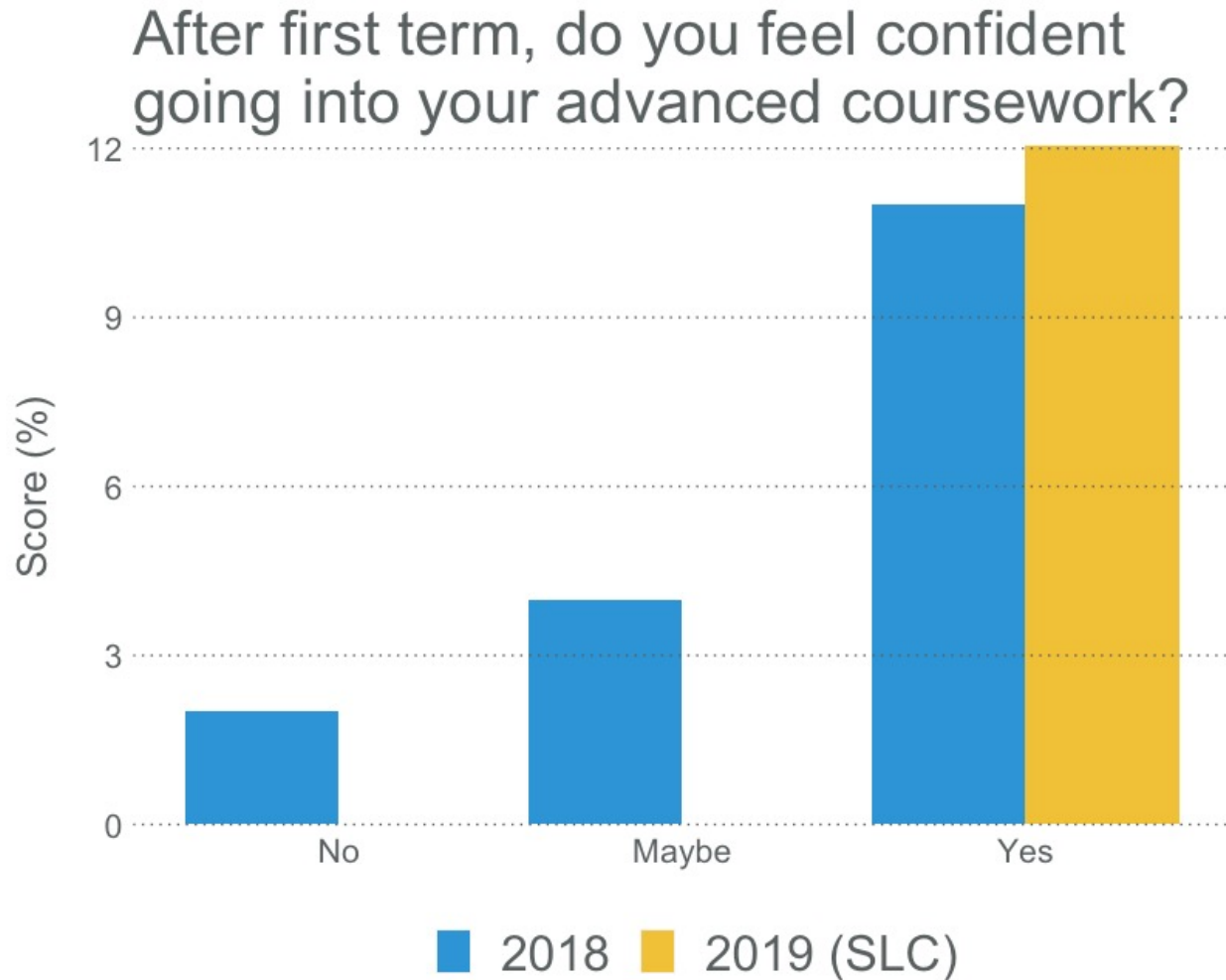
## Which study strategies did you find the most helpful?



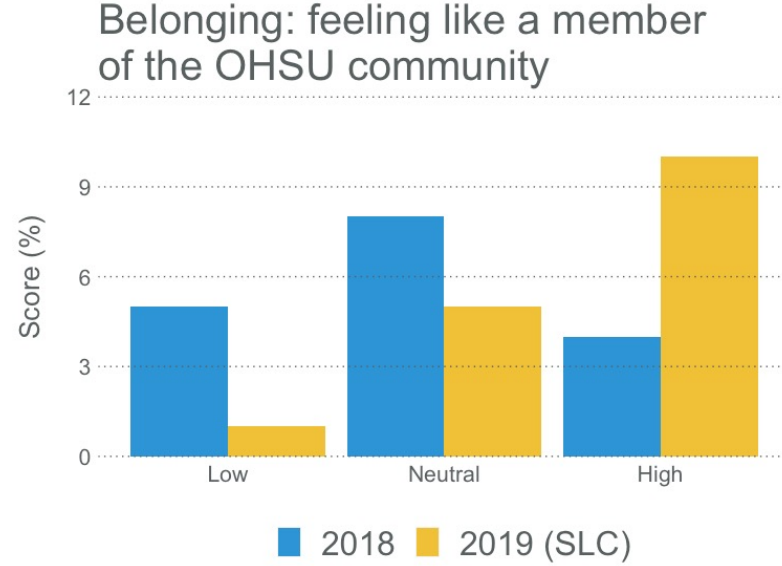
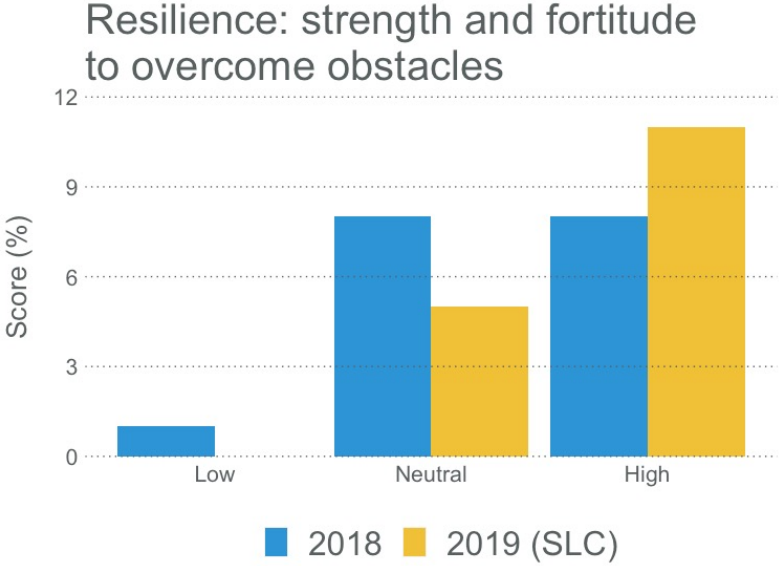
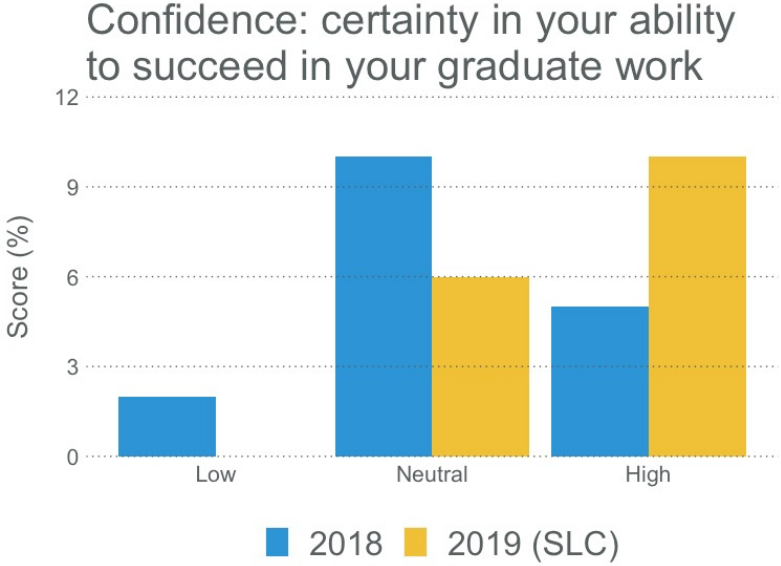
# Score Improvement



# SLC improved confidence going into advanced coursework after fall term



# SLC students self-reported feeling higher in traits known to be correlated with improved educational outcomes



# Peer support interventions

- **Senior students are able to provide academic and mental support**
- Peers know better what students are experience and need
- May be a cheap and effective way to improve student outcomes
- Provides career development and leadership opportunities for graduate students

# Conclusions: Why use peer led programs?

- Improved academic performance
- Improved confidence, resilience, and belonging
- Built community
- Cheap and effective way to improve learning outcomes



“The SLC was a forge that melded our cohort into an unbreakable alloy of friendship and shared anxiety.”  
—PMCB 2019 Student



“The format of the classes lends itself to a “cram and regurgitate” style of studying, but being able to discuss the information with tutors and other students helped me to ***actually retain some of the information long-term.***”

— PMCB 2019 Student

# Acknowledgements

Jackie Wirz

Jeffrey Miller

PMCB 2018 cohort

PMCB 2019 cohort

Innovations in Education Mini-Grant