MOBILE SUMMER INSTITUTES on Scientific Teaching

WELCOME!

Transform

MOBILE SUMMER INSTITUTES
on Scientific Teaching

UNIVERSITY OF MONTANA
TEACHING EXCELLENCE INITIATIVE
IMPROVING STUDENT LEARNING

Two Minute Paper

On a notecard:
-pick a 3-digit number that you'll remember on Thursday. Write it on the card

-on front, answer:
"What does student success mean to you?"

-on back, answer:
"What is your role in student success?"

Origins and Evolution of the SIs

Original NASI, Handelsman & Wood UW-Madison

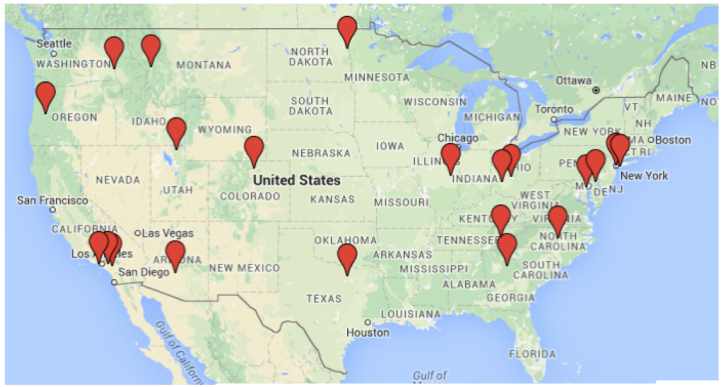
Regional SIs

MoSI

2004 2008 2012 2016 2020

Regional SI participants 2004-2016

MoSI Host Institutions (2018)



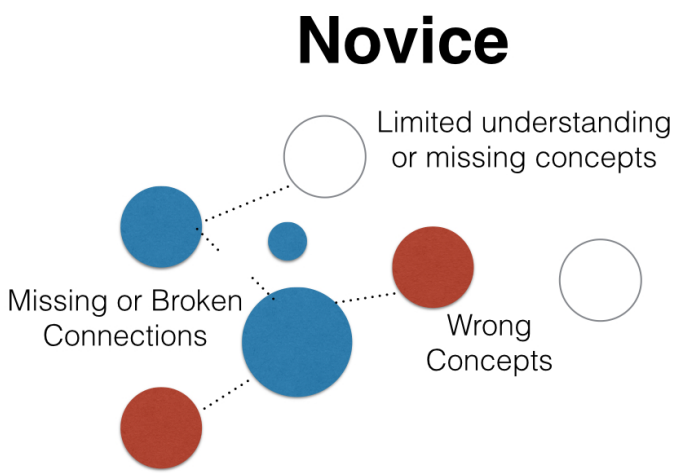
hhmi NSF

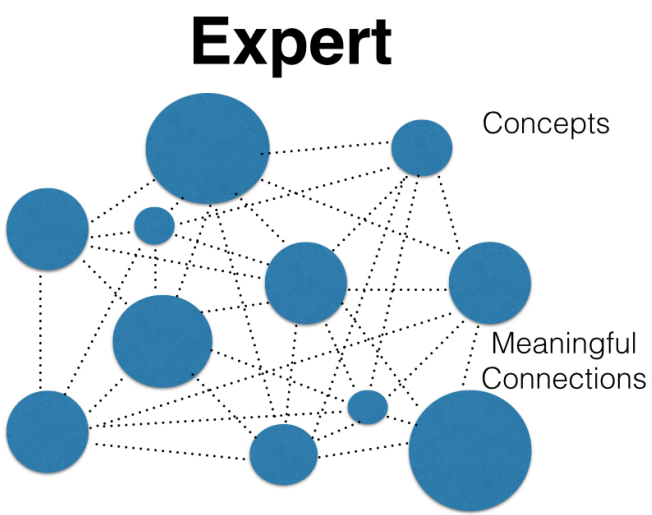
What students aren’t getting in traditional classrooms.

Matthew H. Schneps. (1989). A private universe : misconceptions that block learning. Santa Monica, CA :Pyramid Film & Video

If the camera crew from “A Private Universe” were to question <u>your students</u> at the end of your course or graduation, what would you be most embarrassed to find out that they didn’t know?

What influences the transition from novice to expert?

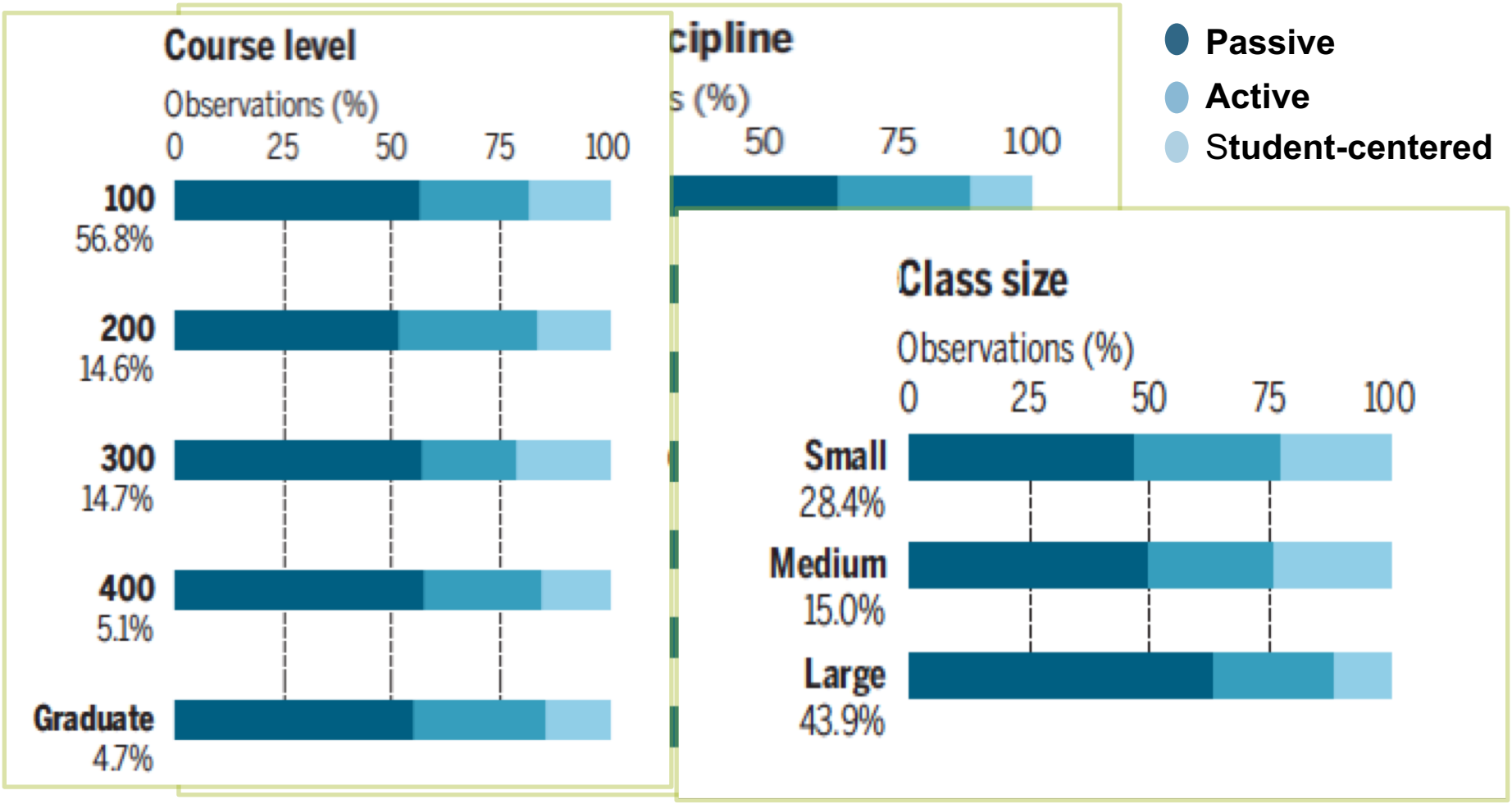




In active learning classes, students fail less & perform better

Freeman, et al., (2014). Active learning increases student performance in science, engineering, and mathematics. *PNAS*, *111*(23), 8410-8415.

A work in progress: we're part of a national reform effort



Stains, et al., (2018). Anatomy of STEM teaching in North American universities. *Science*, *359*(6383), 1468-1470.

Getting to know you…

City of origin

Teaching or research specialty area

First Name

Pronoun

What you wanted to be as a kid

Something unique about you

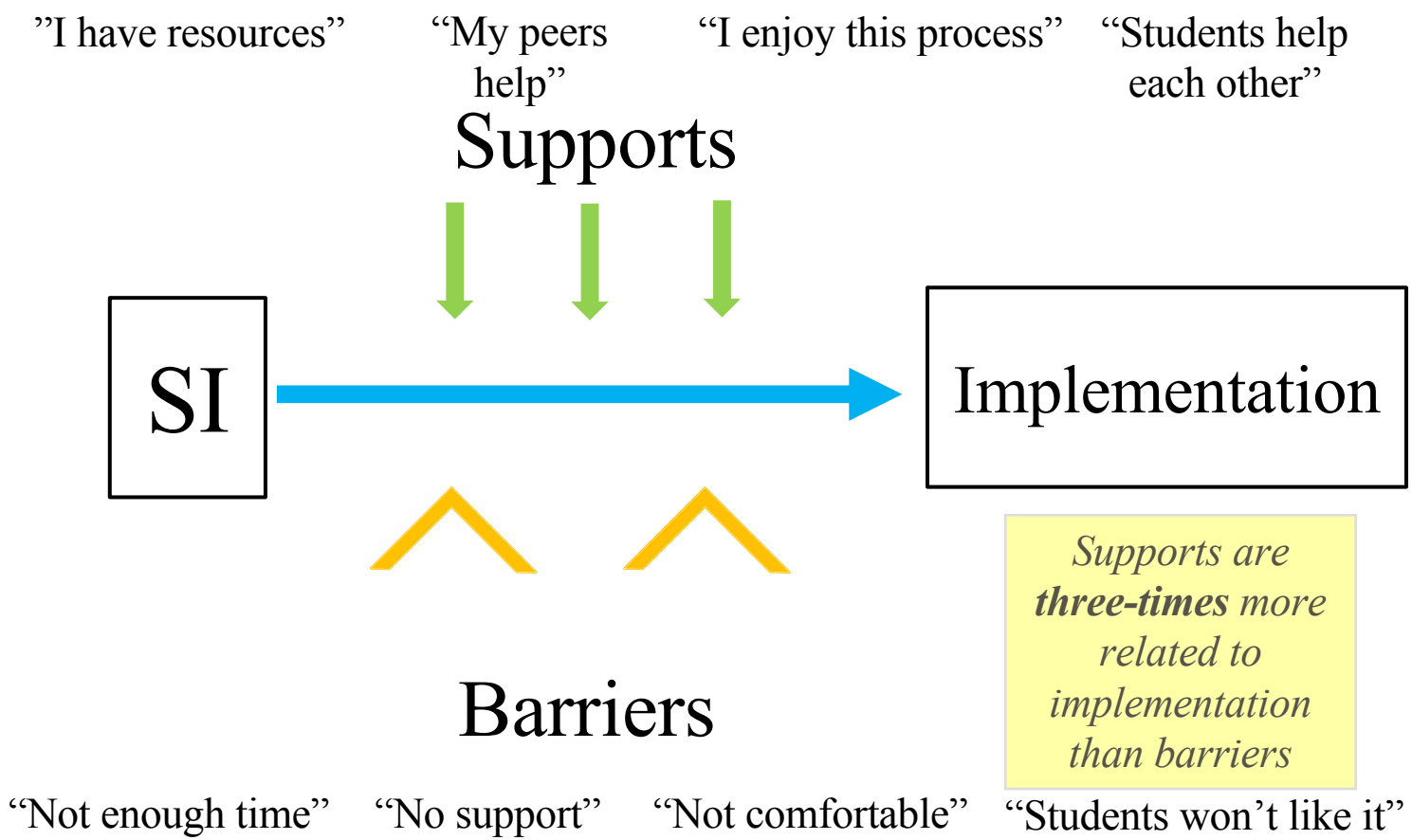
(D. Ebert-May)

Your challenges and supports

What are your biggest teaching challenges (barriers)?

What do you hope to achieve through engaging in the MoSI workshop this week (goals)?

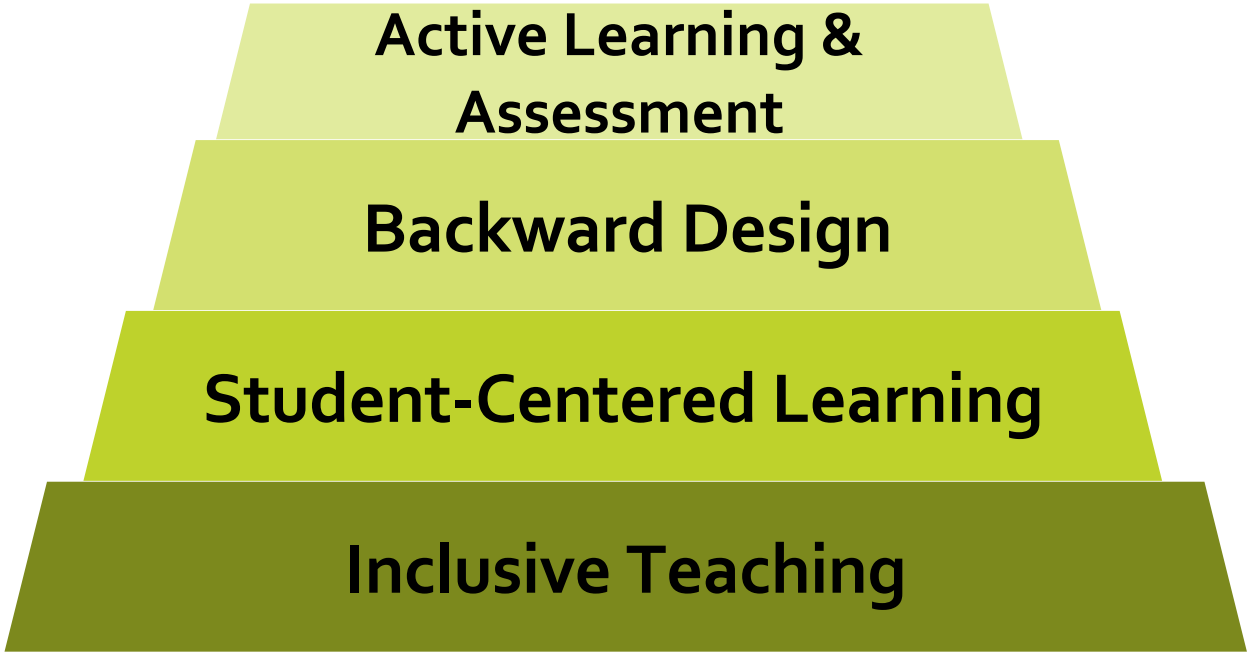
Supports have more impact on implementation than barriers



*Supports are **three-times** more related to implementation than barriers*

Graham, M., et al. (2019) Supports: A Key Factor in Faculty Implementation of Evidence-Based Teaching. CBE Life Science. 18(22): 1-9

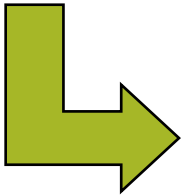
Organizing Principle - Scientific Teaching



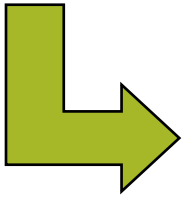
Condensation of best, evidence-based teaching practices

Backward Design

What should students know, understand and be able to do by the end of the class?



What evidence will convince you that they got there?



How will you help them get there?

Wiggins, G., & McTighe, J. (1998). *Understanding by design*. Alexandria, VA: Assoc. for Supervision and Curriculum Development.

A four-pronged approach to change

Individual	Streamlined SI	New elements Scholarly teaching Peer Eval/Mentoring
Environmental	Administrator Meeting	Facilitated Strategic Planning

. Henderson, C., Finkelstein, N. & Beach A. (2010). Beyond dissemination in college science teaching: An introduction to four core change strategies. *Journal of College Science Teaching*, 39: 18-25

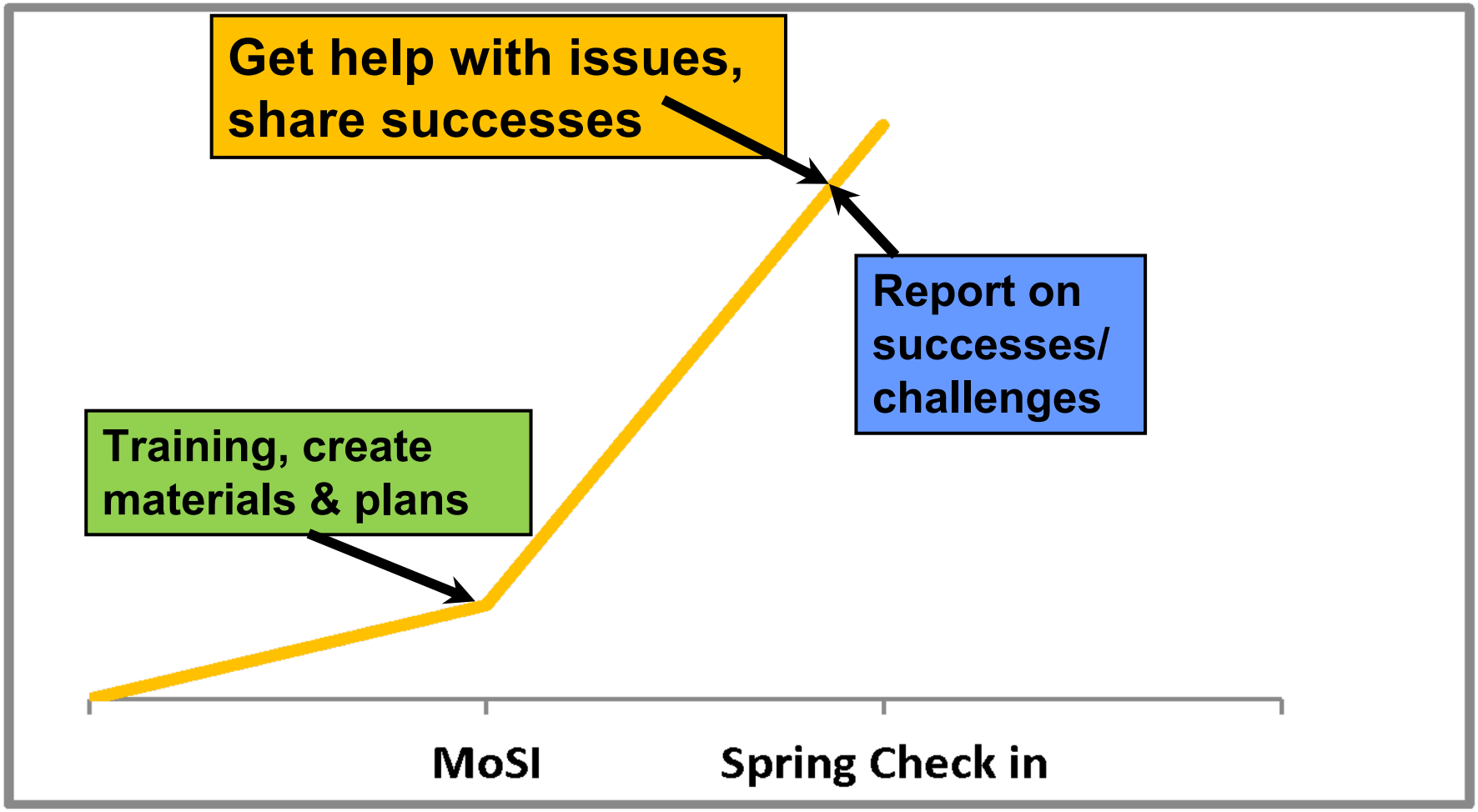
Format for the week

Time	Monday (6/10)	Tuesday (6/11)	Wednesday (6/12)	Thursday (6/13)	Friday (6/14)
8:30-9:00	Facilitator Training	Backward Design in Action I (goals & outcomes)	Peer Mentoring and Evaluation Training	Presentations Prep (Final Group Work)	
9:00-9:30					Strategic Planning II - Backward Design (Continued)
9:30-10:00				Group Presentations	
10:00-10:30					
10:30-11:00		Backward Design in Action II	Scholarly Teaching		Mock Group-Report Presentations
11:00-11:30					
11:30-12:00					
12:00-12:30		Lunch (provided)	Lunch (provided)	Lunch (provided)	Administrator Lunch
12:30-1:00	Intro and Welcome	Group Work I	Group Work II	Review and Reflection	
1:00-1:30				Strategic Planning I - Visioning, Goal-setting, and Consensus Forming	
1:30-2:00	Inclusivity				
2:00-2:30					
2:30-3:00					
3:00-3:30					
3:30-4:00			Group Share	Strategic Planning II - Backwards Design	
4:00-4:30	Scientific Teaching in Action				
4:30-5:00				Reception with Provost & former MOSI fellows (ED241)	
5:00-5:30					
5:30-6:00					

Legend

- **Interactive workshops**
- **Group Work**
- **Presentations**
- **Institutional elements**

Beyond the MoSI: Supports & Community



Let’s get started