



# TA Bootcamp:

Preparing graduate students to teach  
to a diverse student body and get  
the most out of their teaching  
experience

May 6<sup>th</sup> Group Meeting  
Anique Olivier-Mason, Ph.D.  
MIT Drennan Education Lab

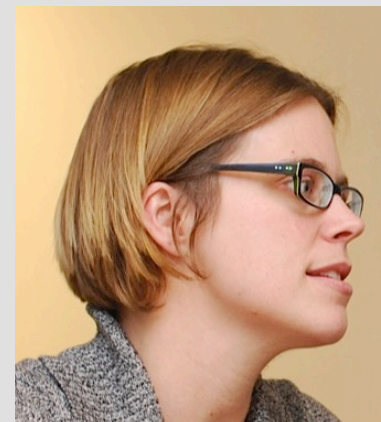
# Acknowledgements



Prof. Cathy Drennan



Beth Vogel Taylor, PhD



Brandeis University  
Prof. Melissa Kosinski-Collins

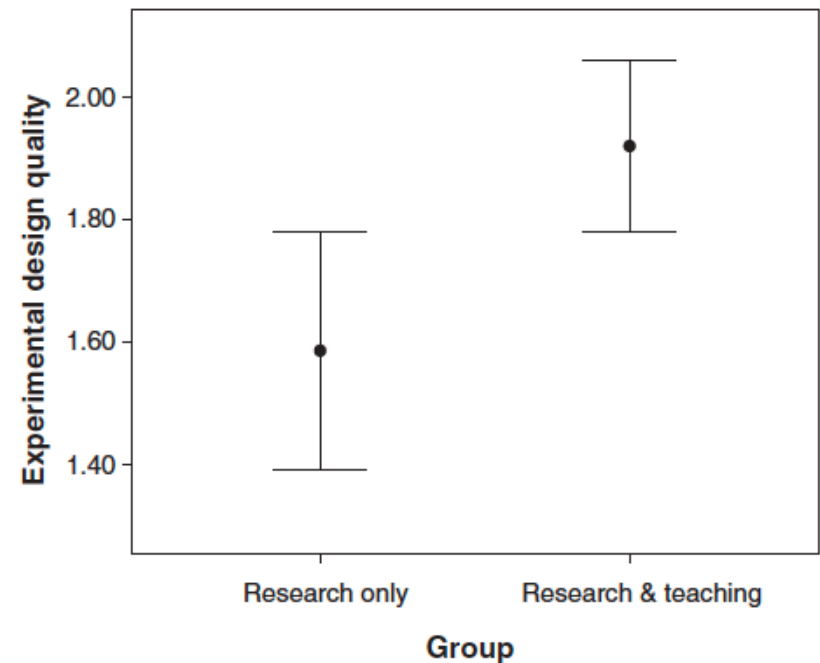


Chemistry Education Office  
Jennifer Weisman, PhD

# Our overall goal is for the TAs to become *teacher scholars*

## Graduate Students' Teaching Experiences Improve Their Methodological Research Skills

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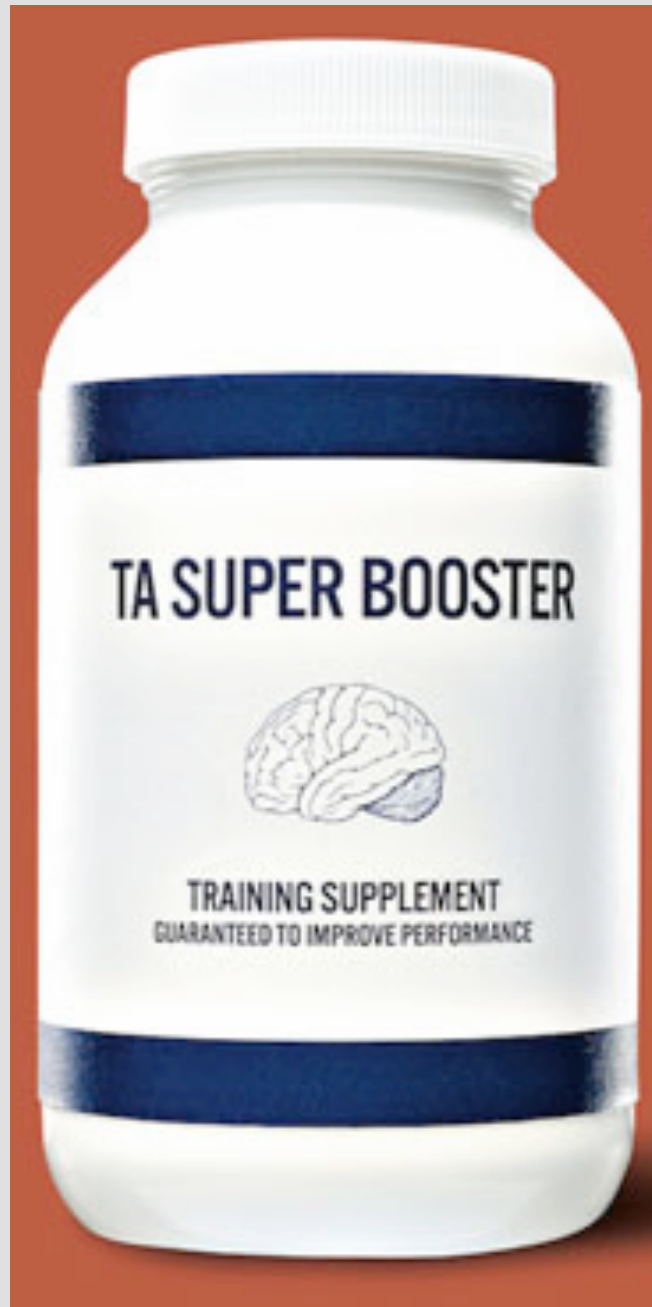


*Science* 333, 1037 (2011)



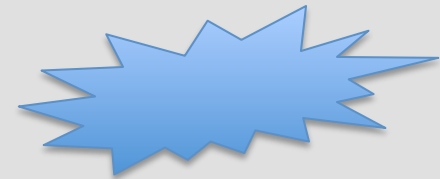
**Confidence!**

**Enthusiasm!**



**Community!**

**Collaboration!**





### Bootcamp for Intro Chem TAs

- 10 TAs
- 5 days (~20 hr)

### Scaled up Bootcamp for all Chemistry Dept. TAs

- ~35-50 TAs/year
- 5 days (~20 hr)



### Brandeis BioLab TAs

- ~15 TAs/semester
- ~4 hr

### Modified Bootcamp for all Biology Dept. TAs

- ~35 TAs/semester
- ~5 hr

# Group Meeting Outline

1. Comparing the three versions of the Drennan Ed Lab TA Bootcamp
2. Understanding the training assessment and feedback
3. Implementing a TA training bootcamp in your department or course

# Scaled up Annual Bootcamp for 1<sup>st</sup> year Chemistry Dept. TAs

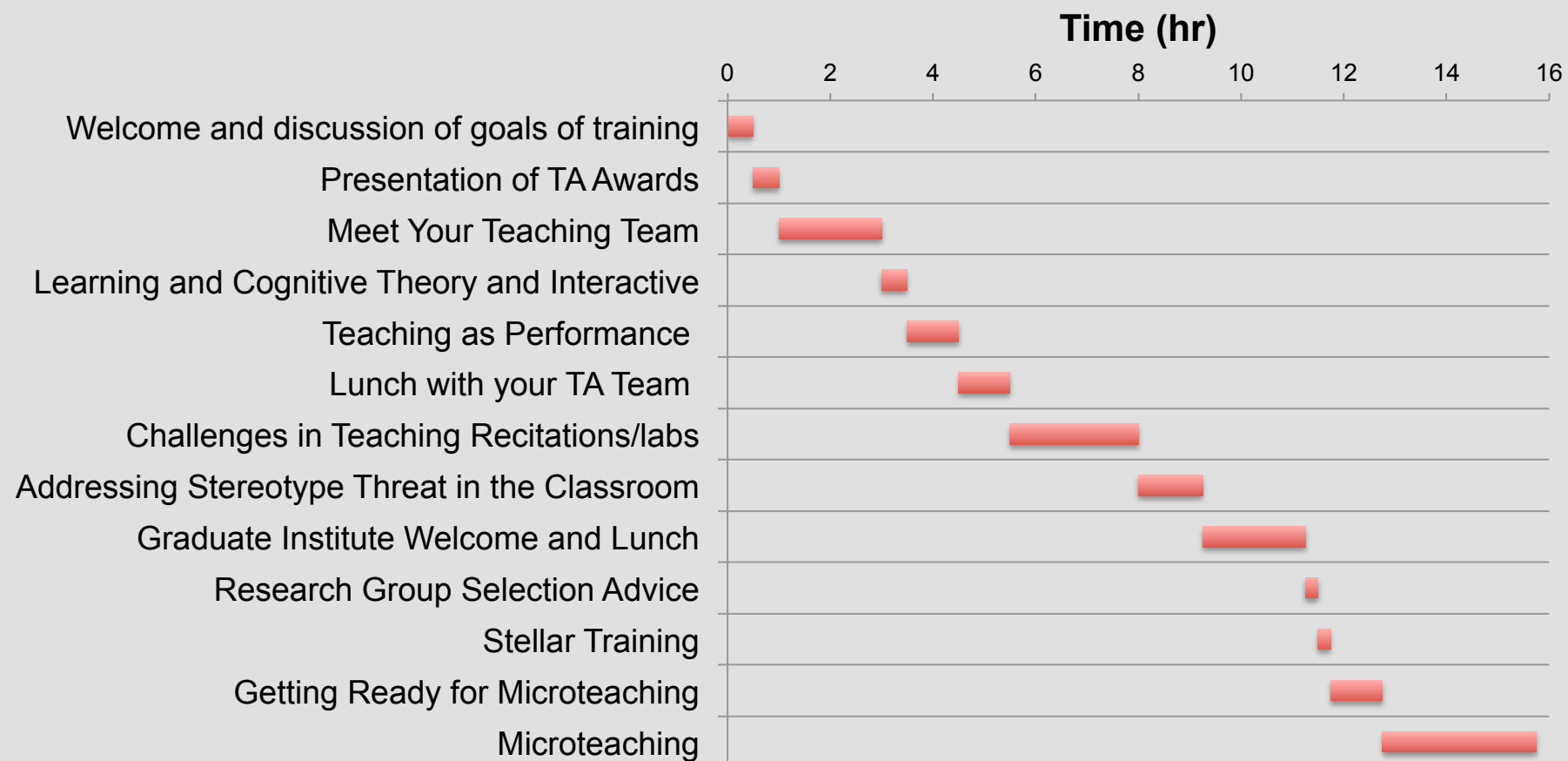
- Participants
  - First year Chemistry Dept. graduate students (35-50/year)
  - 2010-2012
    - >138 graduate students, 36% female, 11% URM-status
- Purpose
  - Welcome and Introduction to MIT (students and resources)
  - Celebration of great teaching from the previous year's TAs
  - Overview of course-specific TA responsibilities
  - General preparation for teaching and TAing in a diverse classroom
- Time
  - ~20 hrs over 5 days (lab not chosen yet)

# USB Thumb Drives with TA Resources



- Importance of learning how to teach on research:  
-- *Science* 333, 1037 (2011)
- Active learning resource, “182 Interactive Techniques”
- MIT teaching resource, “The Torch or the Firehose”
- Stereotype-threat reading, “But I don’t Like Beer...”

# Chemistry Dept. TA Training Schedule





# Meet Your Teaching Team

## Goals of session:

- Be able to articulate teaching goals and answer the question, “what kind of teacher do I want to be?”
- Develop a good working relationship with your teaching team
- Become familiar with course policies and faculty expectations



# Meet Your Teaching Team

*1. Introduce yourself and describe your undergraduate institution. Is it a big place, small place? Number of Chemistry majors?*

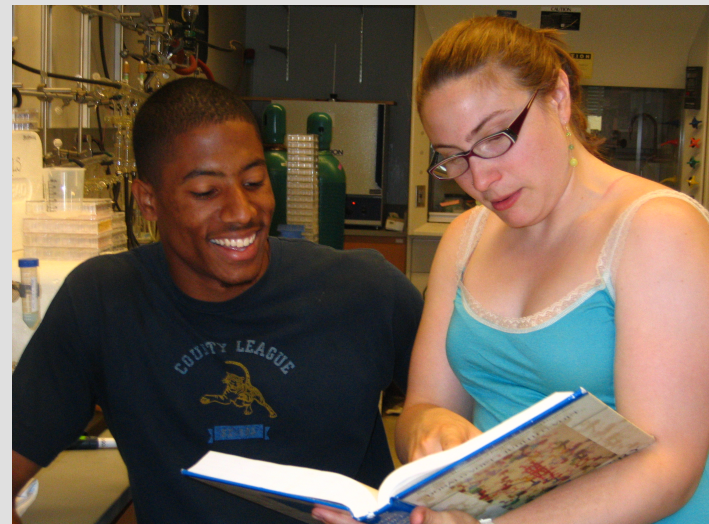
*2. Did you ever have a TA when you were an undergraduate student? Prior to this training, what job description did you have in mind for a TA? (example: TAs grade only)*

...

# Cognitive Theory and Interactive Learning & Teaching as Performance

## Goals of session:

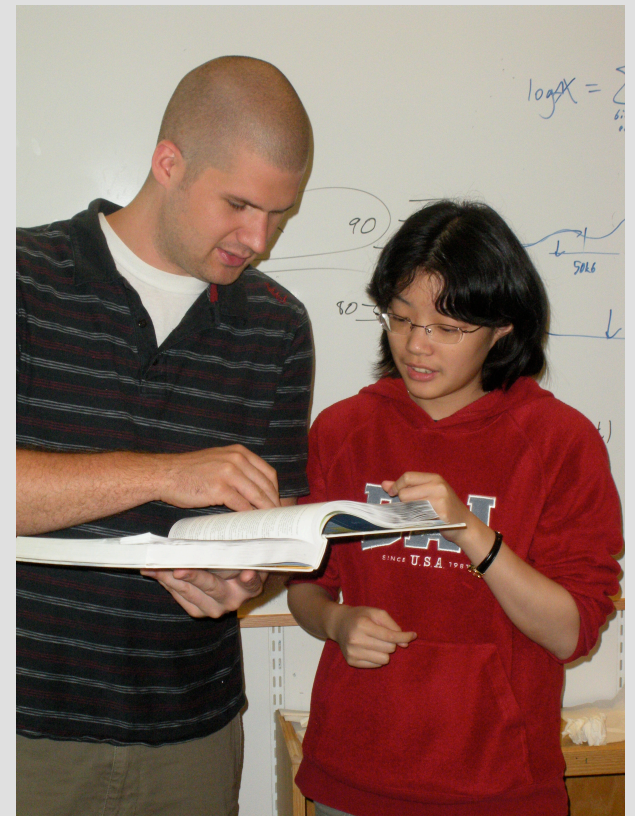
- Be able to apply research on how students learn to one's own teaching.
- Be able to describe specific strategies for active learning.



# Challenges in Teaching Recitations/Labs

## Goals of session:

- Become familiar with common challenges specific to your course assignment
- Be able to apply best teaching practices developed by former course TAs.



# Challenges in Teaching Recitations/Labs

1. *Balancing classwork, lab selection and TAing.*
2. *Strategies for getting off to a strong start in recitation.*
3. *The “advanced” student that is constantly challenging you or questioning your authority or expertise.*
4. *Handling questions that you don’t immediately know how to answer.*

1. *Balancing classwork, lab selection and TAing (led by \_\_\_\_\_ ).* A discussion of how to balance your own time during the first semester and how to deal with the stress of trying to teach while simultaneously taking classes and deciding on a lab.



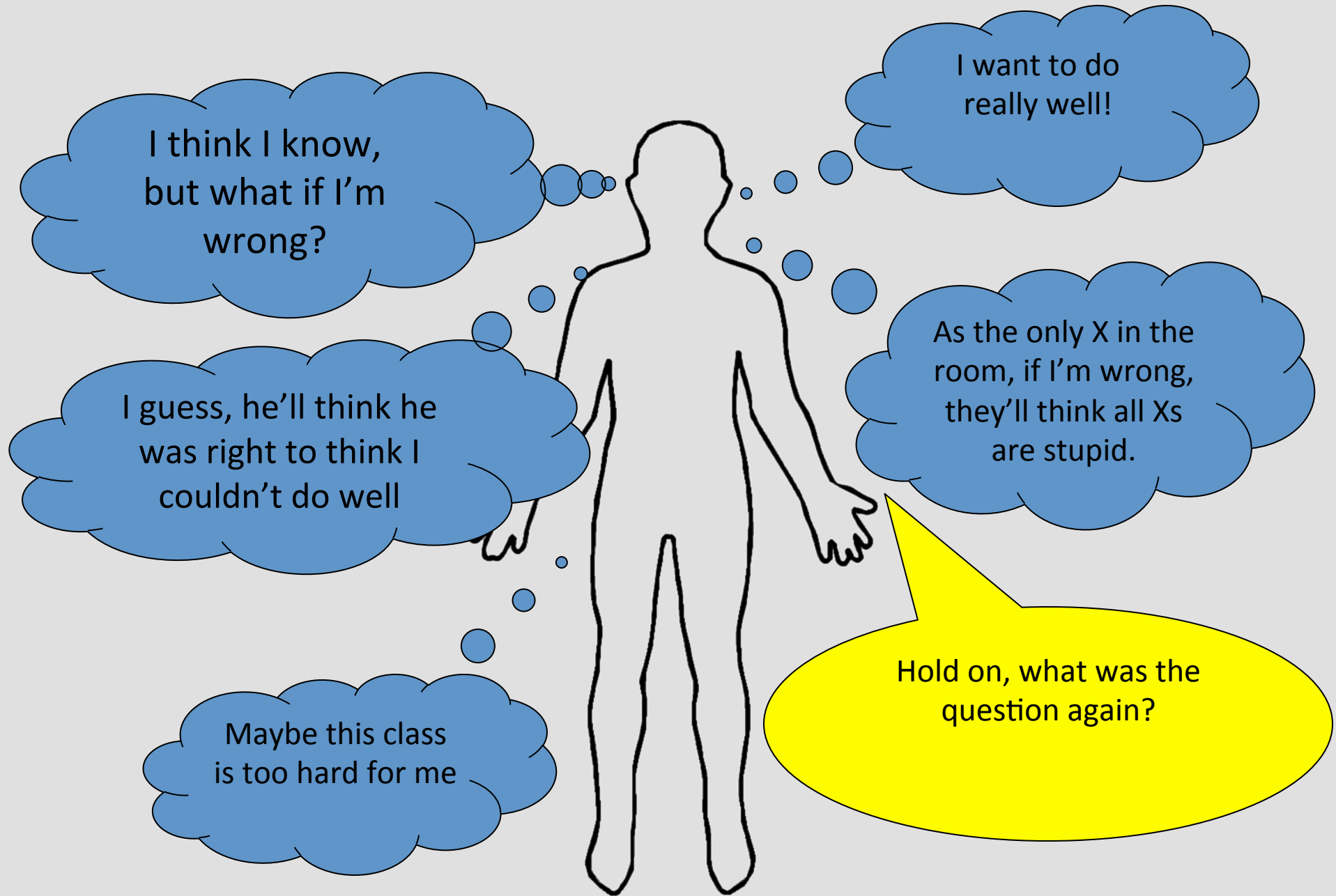
# Teaching in a Diverse Classroom/ Laboratory

## Goals of session:

- Be able to define stereotype threat and identify who can be affected by it
- Explain how stereotype threat can lead to poor performance in a class or lab
- Apply strategies to overcome the negative effects of stereotype threat.



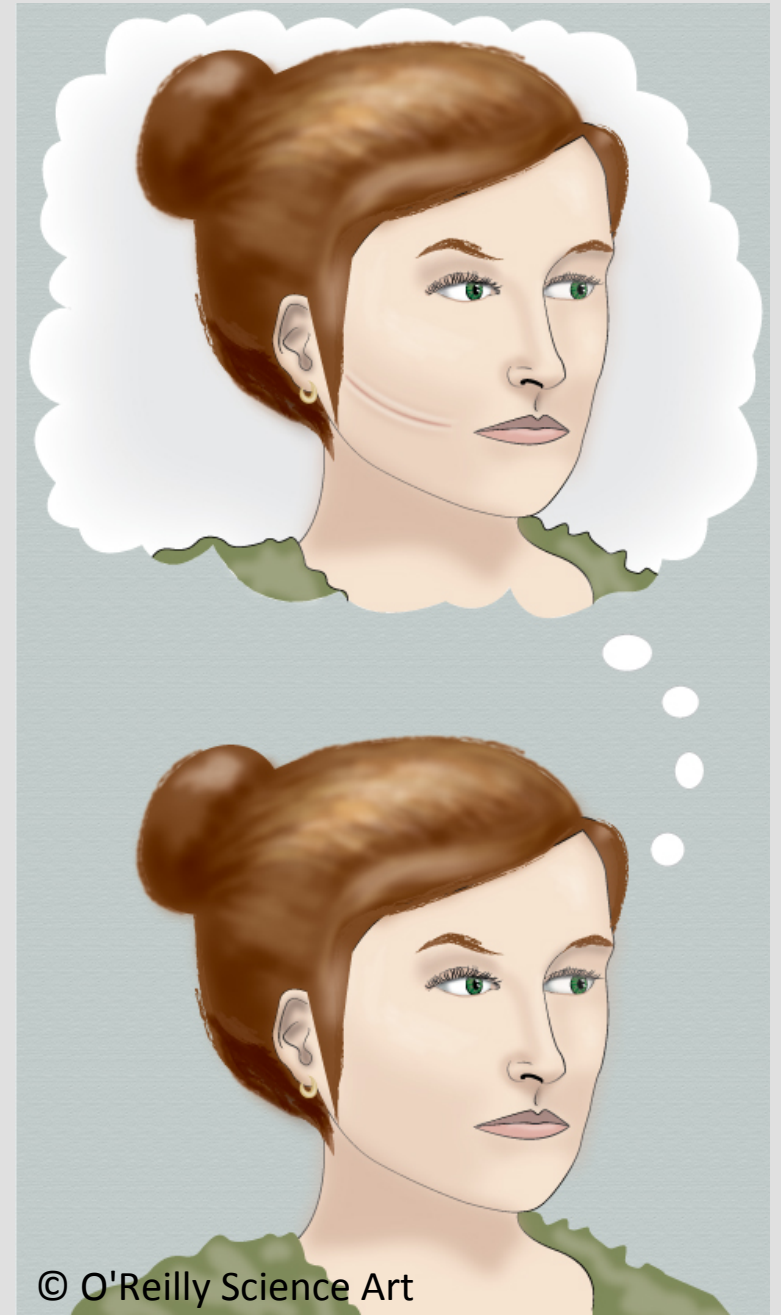
## The TA asks a question during the pre-lab...



## Exercise

Recall a time that you felt judged by someone in a classroom setting for a superficial characteristic

or when you worried about confirming a negative stereotype.



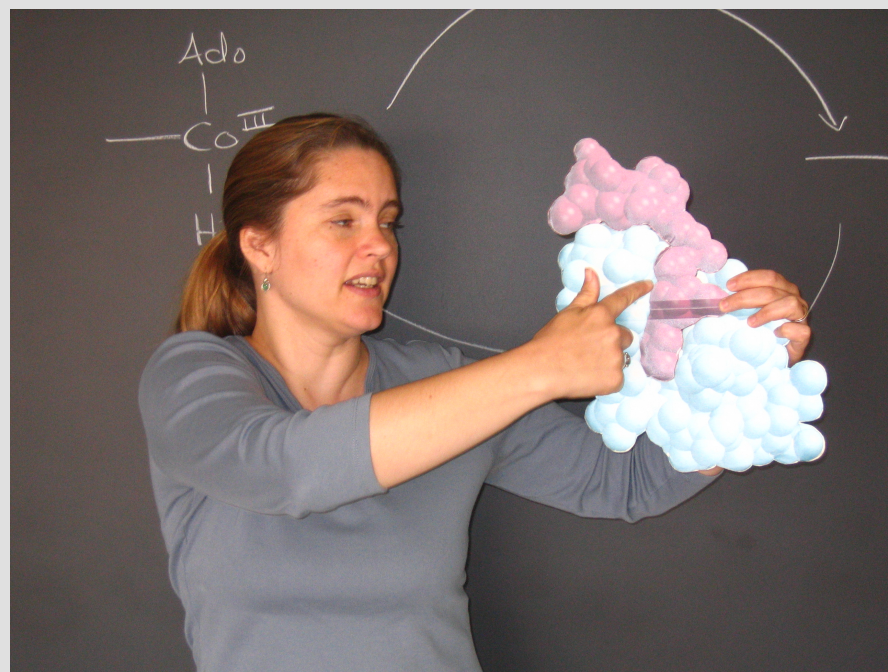
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# Getting Ready for Microteaching aka The Art of a Good Presentation

## Goals of session:

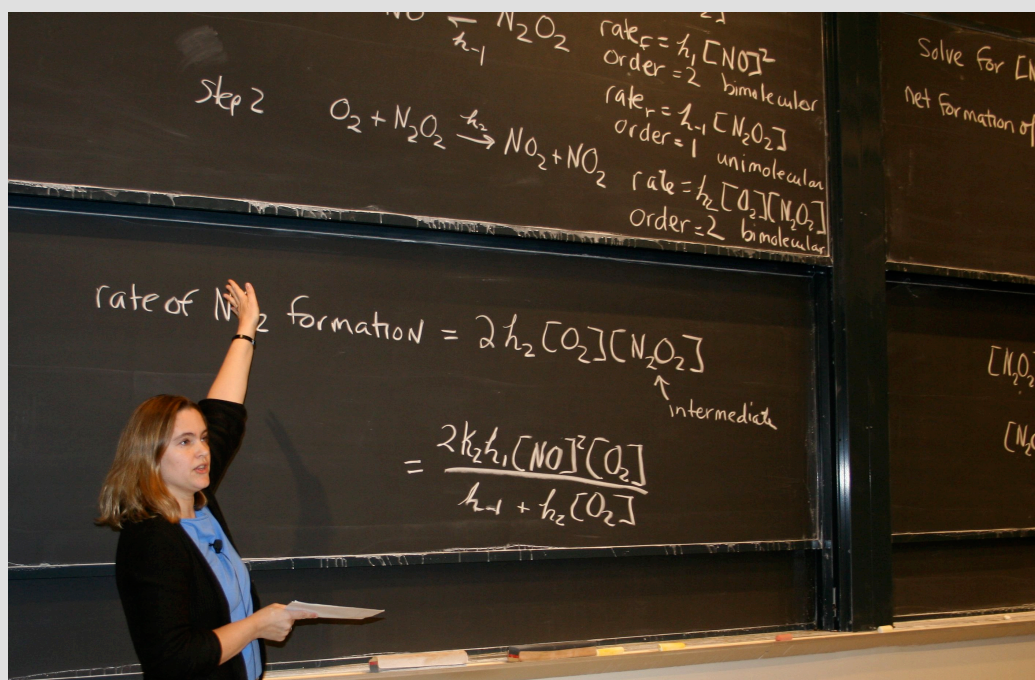
- Be able to describe presentation pitfalls and best practices for application in Microteaching.



# Microteaching

## Goals of session:

- Practice giving and receiving wise criticism in the context of teaching a five-minute recitation lesson.

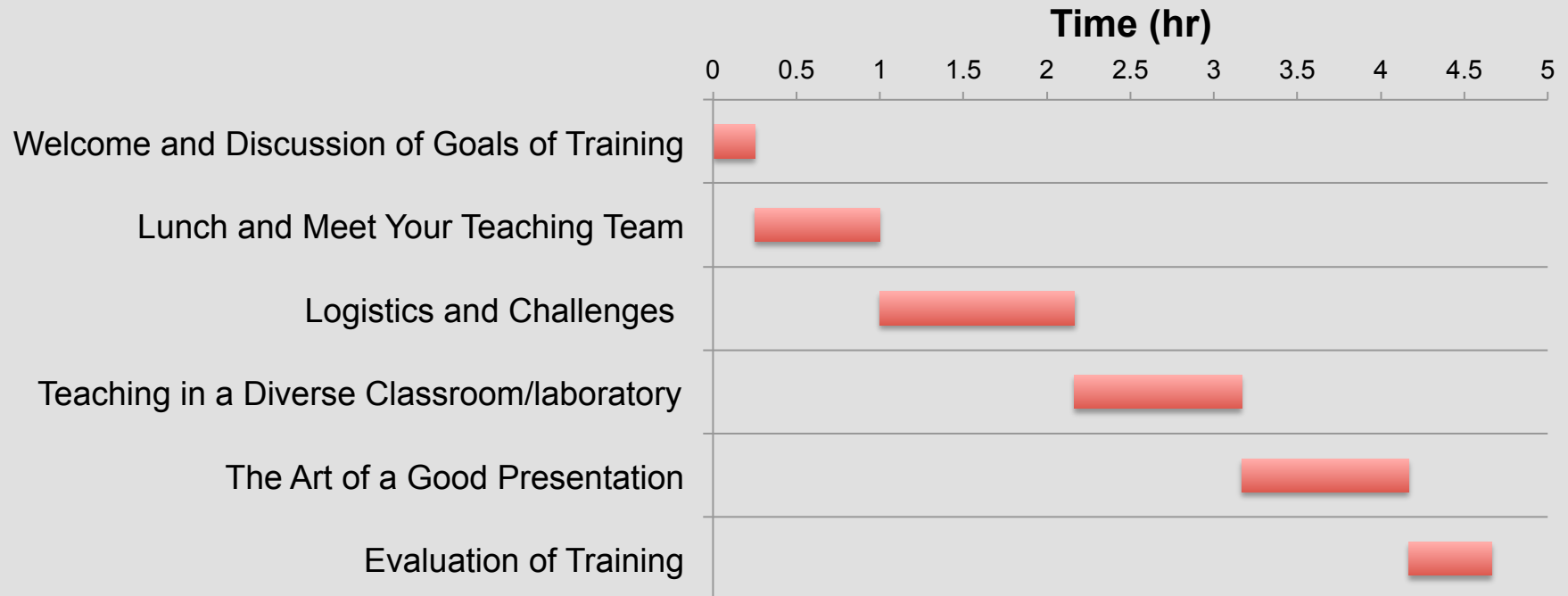




# Modified Bootcamp for Biology Dept. TAs

- Participants
  - Second and fourth year Biology Dept. graduate students
- Purpose
  - Advanced introduction to MIT (students and resources)
  - Overview of course-specific TA responsibilities
  - General preparation for teaching and TAing in a diverse classroom
- Time
  - 5 hrs

# Biology TA Training Schedule



# Former TAs as Facilitators

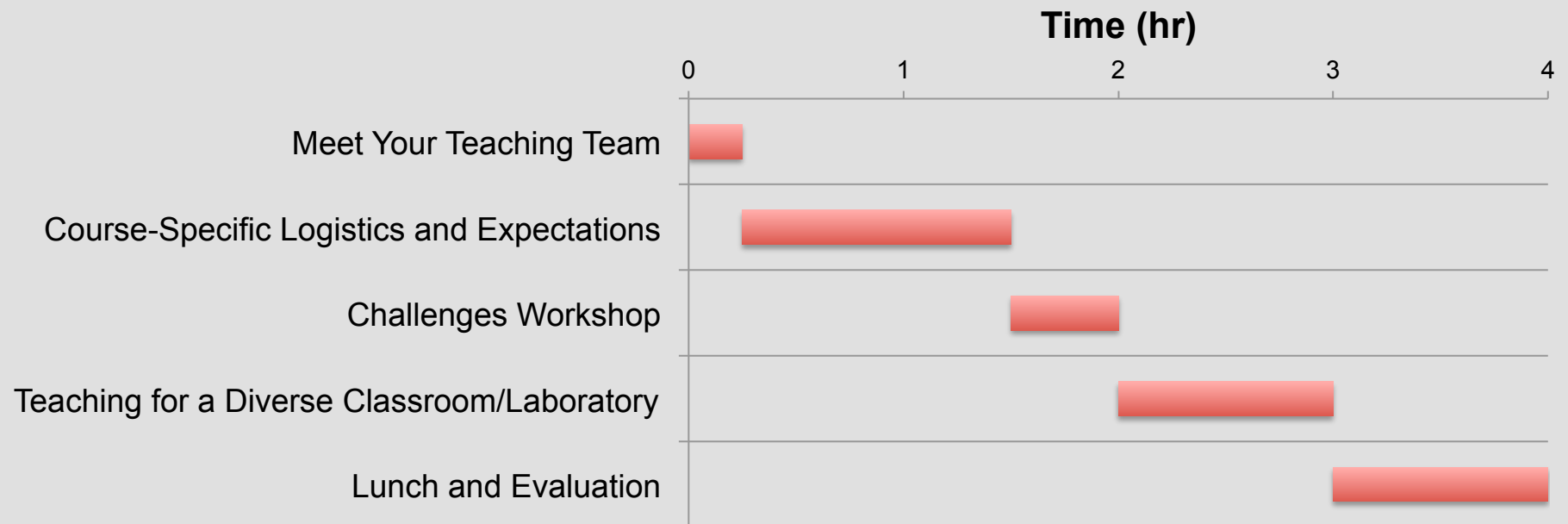
“So, does anyone know if my class has a recitation section?”

- Inconsistent preparation among course professors
- Former course TAs invited back to help with training
  - 35 current TAs: 11 experienced TAs
  - Scheduled time early in training with former TAs

# Modified Bootcamp for Brandeis BioLab TAs

- Participants
  - Second year graduate students and selected upperclassmen UTAs
- Purpose
  - Advanced introduction to Brandeis (students and resources), BioLab course content and TA responsibilities
  - General preparation for teaching and TAing in a diverse classroom
- Time
  - 3 hrs

# Brandeis BioLab TA Training Schedule





# Construct Knowledge

## **Goals of session:**

- 1) To leave today with concrete teaching strategies.
- 2) To see fellow TAs as a resource when real challenges arise.

# Group Meeting Outline

1. Comparing the three versions of the Drennan Ed Lab TA Bootcamp
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# What our alumni say...

- *By talking with former TAs, I know which parts of the course students will have problems with. I prepare lessons thinking about experiences / strategies that the former TAs discussed.*
- *I now discuss with the other 5.111 TAs how the experience is going. We share experiences...I don't feel alone in facing my teaching responsibilities.*
- *It allowed my teaching to mature more quickly. It served as a catalyst for my teaching by providing examples of how to think about teaching. Without (this training), I would not be this far along in my teaching.*

# Data: What previous TAs have said about the training

Previous Teaching Assistant Responses to TA training (2010-2012); N=138.

Effectiveness Ranking	Mean (# out of 7)
Lunch with your teaching team	6.1
Discussions with former TAs on “challenges”	6.0
Meet your Teaching Team	5.7



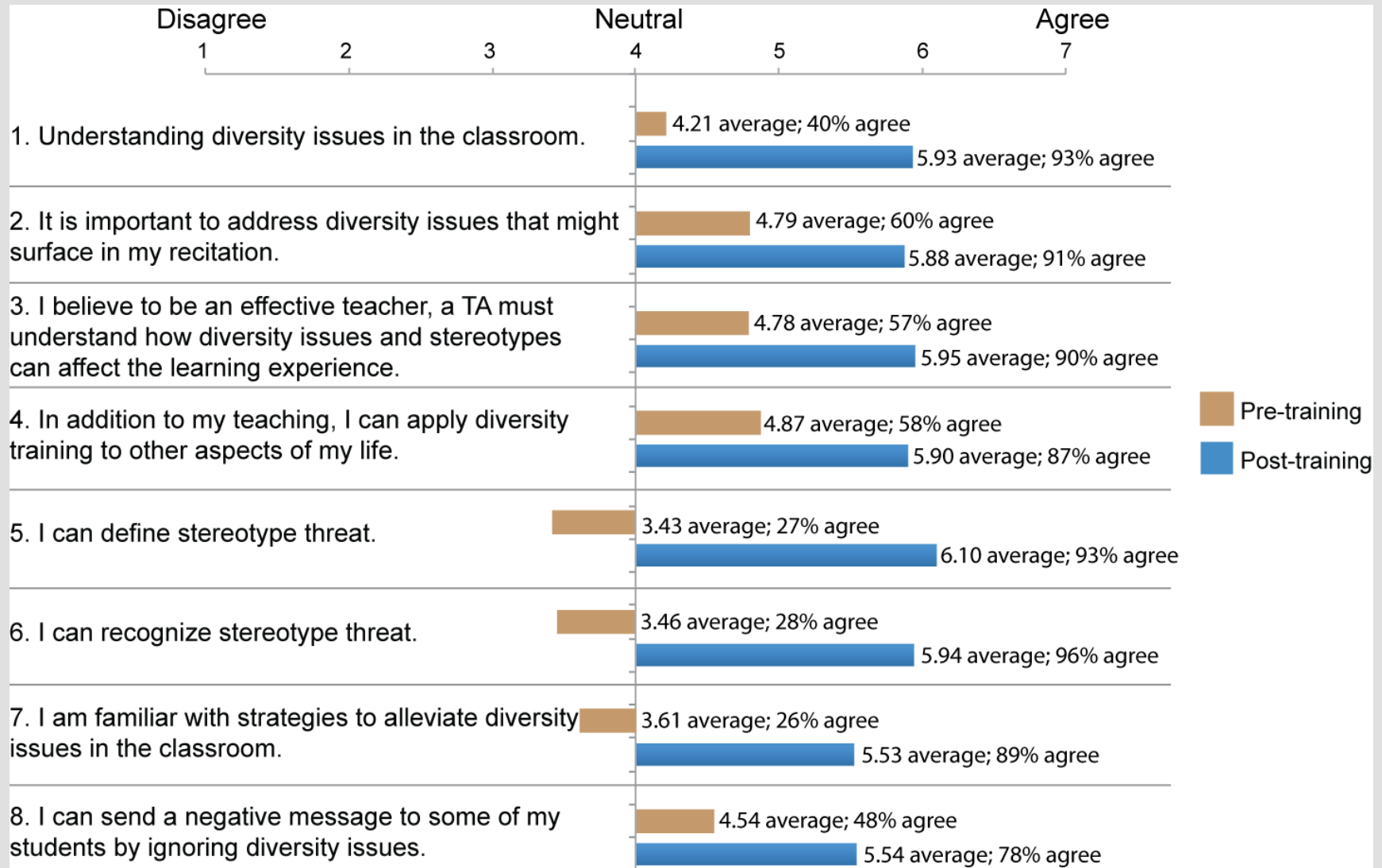
# Data: What previous TAs have said about the training

Previous Teaching Assistant Responses to TA training (2010-2012); N=138.

Enjoyment Ranking	Mean (# out of 7)
Discussions with former TAs on “challenges”	6.3
Microteaching	6.3
Lunch with your teaching team	5.8



## Data: items that contribute to the 2010-2012 *diversity scale*



N=120; TAs used a seven-point Likert scale to indicate their level of agreement with each statement.

# Coming soon...

Retrospective interviews and survey responses from the  
'07 and '08 TAs

# Data: What the Students say

## TA Recitation Performance

TA Recitation Performance Scale & Items	2010-2012		
	Mean	SD	N
<b>TA Recitation Performance Scale</b>	<b>6.1</b>	<b>1.0</b>	<b>668</b>
My TA wanted us to do well	6.4	.90	675
My TA was enthusiastic about chemistry.	6.2	1.1	685
My TA was well prepared	5.9	1.4	673
Recitation complemented lecture concepts and attitudes	5.8	1.4	671





# Group Meeting Outline

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# Tips for implementing a TA-training bootcamp

- Department support
  - Faculty buy-in
- Former TAs
  - Personal, individual requests from organizer
  - Communicate expectations in person (if possible)
  - “Save the horror stories”
  - Provide a facilitator-training model

# Considerations for implementing a TA training bootcamp

- Needs of the TAs
  - Introductions to the institution? To the course population?
    - Uniformity of TA group?
  - Time commitment
  - Implementation of learning data into training
    - Include active and peer learning instruction
- Needs of the Department or instructor
  - Time commitment
  - Assessment

# Data collection in smaller groups

<b>BEFORE Training</b>							<b>AFTER Training</b>						
1	2	3	4	5	6	(7)	1	2	3	4	5	6	(7)
1	2	3	4	5	(6)	7	1	2	3	4	5	(6)	7
1	2	3	4	(5)	6	7	1	2	3	4	(5)	6	7
1	2	3	4	5	6	(7)	1	2	3	4	5	6	(7)
1	2	(3)	4	5	6	7	1	2	3	4	(5)	6	7



# When in development, short responses work best

2. Have you attended a diversity training session before? Was *this* training session different than what you expected? In what way(s)?

Yes it was more relatable and less judgemental. The fact it raised awareness more than lecturing do this or that is the appeal.

2. Have you attended a diversity training session before? Was *this* training session different than what you expected? In what way(s)?

Yes; was nice b/c this training ~~was~~ was more data driven & geared towards a scientific audience

7. Did you know about wise criticism before today (criticism in which you explicitly state your high expectations and belief in the other individual)?

Yes, but not by that name.

9. Do you think that the company should offer this training again? What would like to see changed if the training was done again?

Yes, I think it's useful. Next time - could take more time for group discussion/interactions & sharing of individual views. Might take longer overall. Think I...

# Thank you!

Please go to our site for more information:

<http://drennan.mit.edu/education/>

Sample schedules and challenges are available  
upon request:

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