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# Physics & Astronomy

## Teaching Assistant Professional Development Program

TAPD Coordinators

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All training information, including module slideshows can be found at:

[www.phas.ubc.ca/~phas\\_ta/programs.html](http://www.phas.ubc.ca/~phas_ta/programs.html)

# Program Overview

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## For New TAs

### 1. Core Workshop

### 2. Mentor Program

- Mentor observation
- Peer observation

*Relatively well established  
and effective program*

## For New & Returning TAs

### 1. Course-Specific Training

- All large first year courses in physics and astronomy

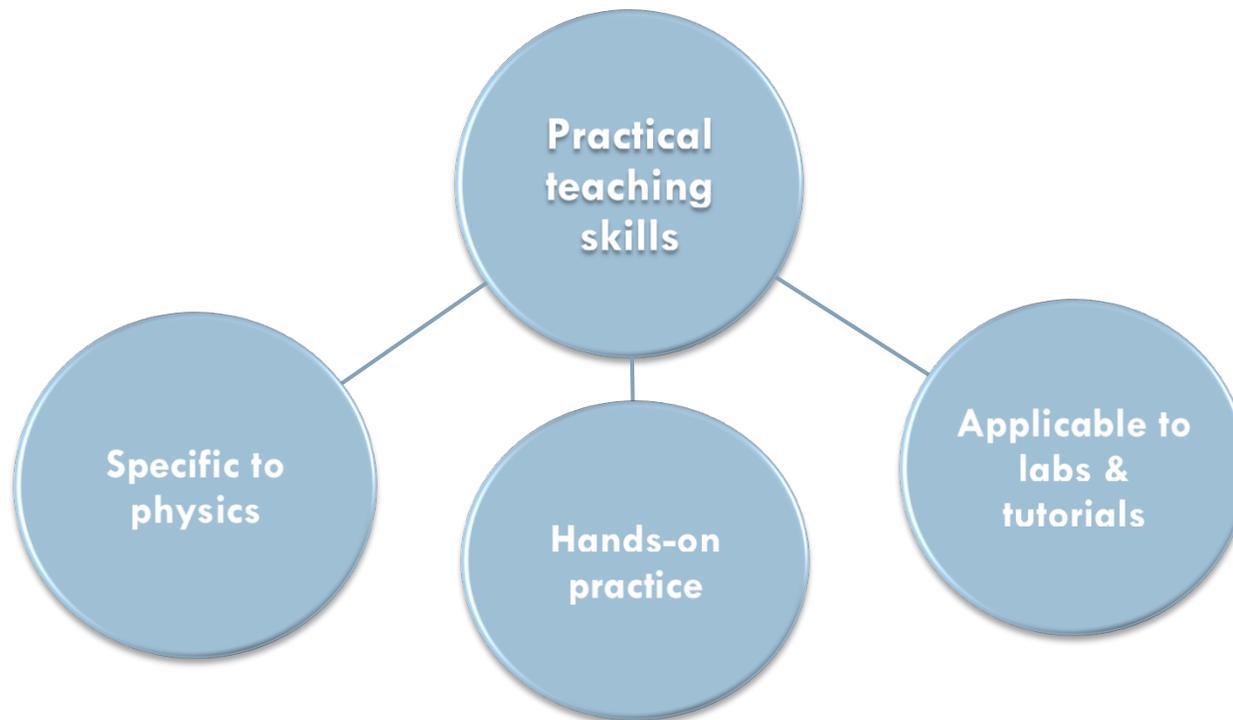
### 2. *Ongoing mini-workshops for continued TA professional development*

- *Work in progress*

*Needs work to make training more effective.*

# Core Workshop

- Developed by graduate students for graduate students
- The workshop is paid mandatory training for all new TAs
- All graduate courses are cancelled for the duration of the workshop to ensure participation
- Now hold two workshops to accommodate undergraduate TAs



# Core Workshop

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## Introduction & Job Expectations

*The professional aspect of a teaching assistantship is introduced through presentations detailing departmental and union expectations of the TAs*

- The Department Head presents an overview of the department's expectations including:
  - ▣ Responsibilities inside and outside the classroom
  - ▣ Expected TA work hours and nominal duties
  
- Important job information from the TA union (CUPE 2278) is highlighted

# Core Workshop

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## From Learning to Teaching

*TAs explore their own positive and negative learning experiences to determine the important aspects of teaching*

- Introduction to active learning through discussion of the difference between learner-centred and teacher-centred learning
- Includes data on effectiveness of learner-centered methods to help TA buy-in to active learning and the rest of the workshop.

# Core Workshop

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## Teaching By Questioning

*TAs watch and critique recordings of real TA-student interactions and imagine what they would do in these situations*

- Introduces the use of Socratic questioning techniques in the classroom
- Videos are from the University of Maryland PER group

# Core Workshop

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## Learning Goals in the Lab

*TAs are given a learning goal from a first year course, and discuss Socratic questions they might ask their students to see if they have understood the main points of the lesson.*

- Motivate the importance of learning goals in a lab or classroom setting for both *teaching* and *learning* purposes
- TAs learn to use learning goals to inform the questions they ask their students and to assess if their students understand the main points of the lesson

# Core Workshop

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## Course-Specific Training

*TAs attend a training session specific to the course they will TA in the upcoming semester. The training is coordinated by the courses' Head-TA(s) and provides all the necessary tools and training TAs will need to comfortably lead their first lab or tutorial.*

- Allows TAs to practice delivering a lab or tutorial introduction
- Provides a platform for receiving and giving constructive feedback and evaluation
- Focuses on skills specific to courses, such as marking, working with large groups, and problem solving

# Core Workshop

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## Formative Evaluation

*TAs learn effective techniques for obtaining constructive feedback from students*

- Highlights the different roles of feedback in the classroom, such as
  - ▣ Improving one's performance as a TA
  - ▣ Assessing the students' understanding as new concepts are introduced
- Refers to techniques and questionnaires that TAs have already seen and participated in throughout the workshop

# Core Workshop

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## Creating Inclusive Classrooms

*TAs explore the impact of their identity/culture on their teaching and learning experiences and discuss sensitive situations presented via several case-studies.*

- Fosters an open and interactive environment ideal for discussion of complex gender and diversity issues
- Introduces stereotype threat as an example of an issue that may arise in physics classrooms, and as a motivation for the module.
- Case studies focus on issues that could be encountered in a classroom, which are relevant to the TA positions

*Note: TAs in leadership roles also receive formal training from the Center for Inter-Cultural Communication (CIC) so that diversity can be incorporated into all elements of the training program*

# Course-Specific Training:

## Weekly Meetings

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- Meetings are run by head TAs
  - New and returning TAs in large first year courses attend
  - Emphasis is on “**how** to teach” rather than “**what** to teach”.
  - e.g. identify teaching strategies that will address common student misconceptions, misinterpretations of activities, etc.
- New pilot meeting format this year:
  - TAs explicitly identified possible student misconceptions, Socratic questions or teaching techniques for each of the activities that the students would perform in the next week’s lab or tutorial.
  - Prompted TAs to think meta-cognitively about how they, as instructors, can facilitate the student activities, and allowed the meetings’ focus to switch from the activities to teaching techniques.
  - Will be implemented by the Head TAs in all courses starting next year.

# Mentor TA program

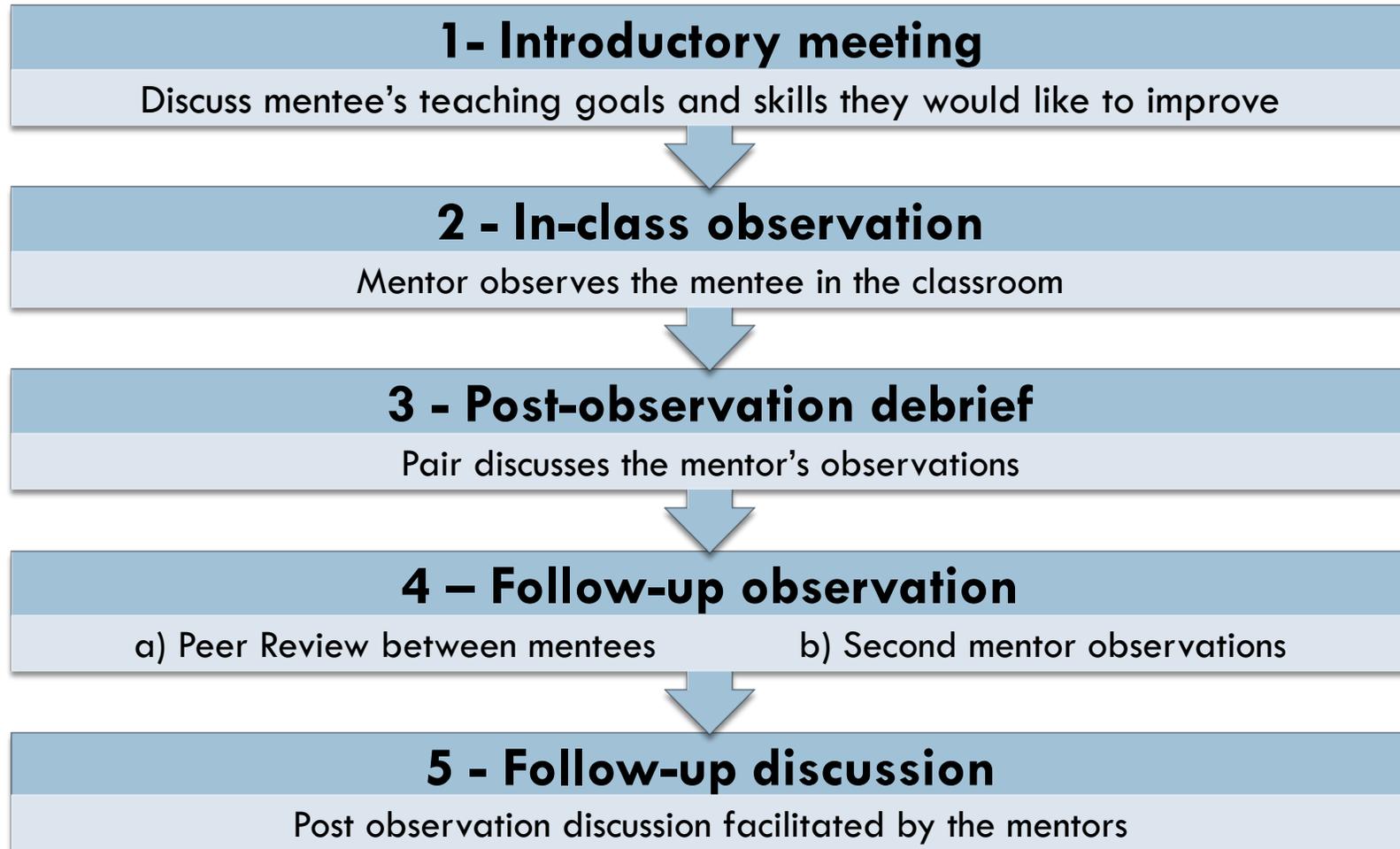
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*Each new TA is paired with a single Mentor TA for their first semester as a TA in the Physics & Astronomy Department, and participates in a series of peer-review sessions.*

- All mentors participate in a peer review training session offered by the Center for Teaching Learning and Technology (CTLT)
- The program is facilitated by a Mentor Coordinator whose main responsibilities are to:
  - ▣ communicate with and support the mentors
  - ▣ coordinate the pairing of mentors with mentees

# Mentor Program Overview

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# Program is run by senior TAs

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## Coordinators

- Fall workshop development & delivery
- Facilitation of all TAPD programs
- Funding & budget
- Peer mentoring
- Culture & diversity training
- Formative evaluations for program assessment

## Head TAs

- Development & delivery of course-specific training
- Peer mentoring
- Course administration & development
- Culture & diversity training
- Formative evaluations to tailor training

## Mentors

- Peer review training
- Mentoring & role model experience
- Observing other teaching styles
- Culture & diversity training
- Effective use of feedback from observations & discussions

# The TA Handbook

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**The TA Handbook covers topics relevant to both new and experienced TAs:**

- Job expectations, responsibilities and position details
- Important departmental and external contacts
- Tips and tricks to improve one's teaching, as well as links to additional resources and contacts
- Classroom problems and resolutions
- Culture and diversity; techniques to create an inclusive classroom environment
- Creating and using formative evaluations
- First day checklist

*This book was distributed electronically to all TAs, or in paper format by request.*

# Asked new Tas about their confidence teaching before & after core workshop

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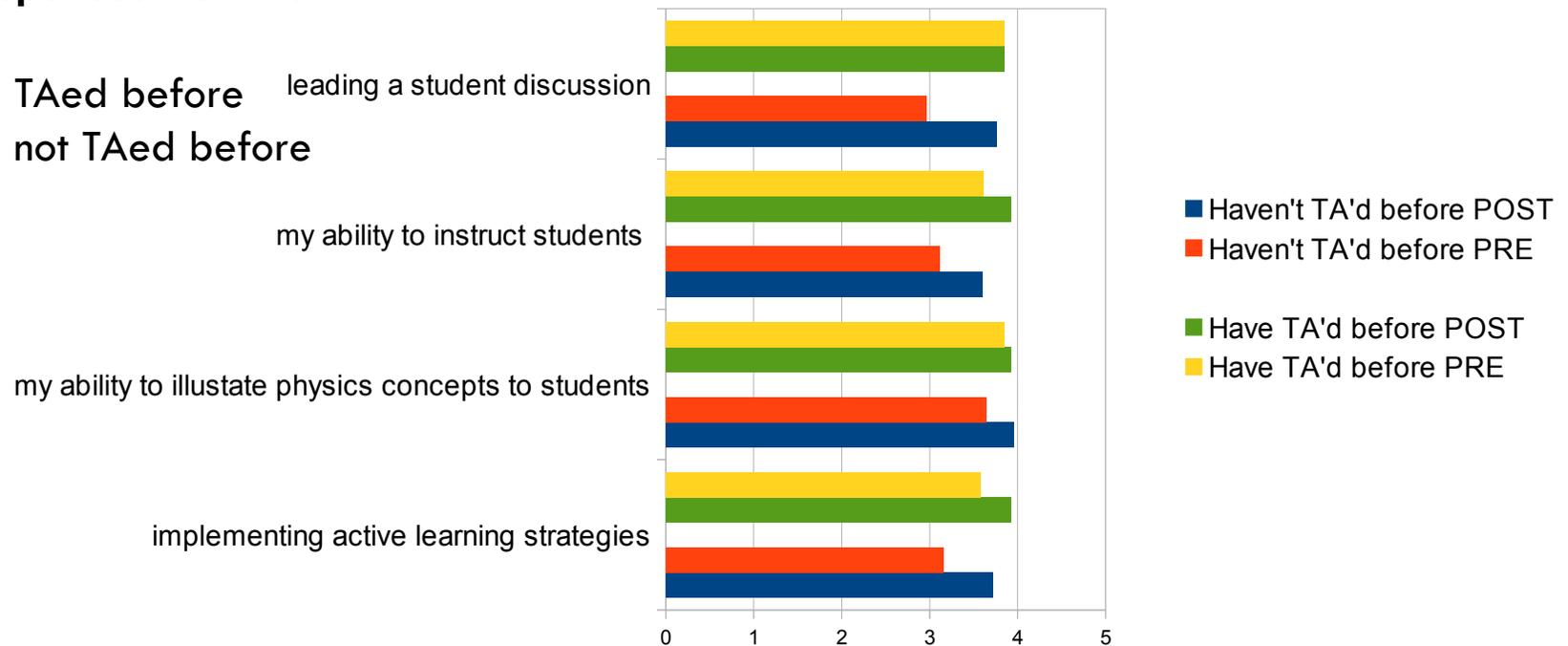
I feel confident in:

## Average responses from 2014

### workshop:

1/3 = have TAed before      leading a student discussion

2/3 = have not TAed before



- Core workshop brings those who have not TAed before onto par with those who have TAed before.
- Core workshop may not be effective for those who have TAed before.
  - Currently thinking about ways to better include people who have TAed before (bringing up experiences? role playing with experienced TAs as students?)

# Ongoing TA Professional Development

- Motivation:
  - ▣ Other than weekly course-specific meetings, ongoing TA professional development is not provided at this point.
  - ▣ The training that has been implemented seems to be most effective for people who have never TAed before, potentially not reaching some TAs
- Hope to implement a first pass at ongoing professional development this year.
- Hold short (~1 hour per year or semester?) training sessions on teaching and learning in physics.
  - ▣ Materials will be prepared by the TAPD coordinators in advance, and informed by Dr. Rachel Sherr's case based "video workshops"
  - ▣ Training sessions will be run by experienced TAs (though not necessarily TAs in other leadership roles such as head/mentor TA)
  - ▣ Training groups will be small ~5 TAs to encourage accountability & participation
  - ▣ Need to coordinate with instructors to build this time into TA hours

***We are still in the planning stages. Ideas & suggestions are welcome!***

# Program Assessment

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- Survey responses about the workshop are generally positive
- Began evaluating attitudes about teaching & learning before and after the workshop this past year
  - ▣ Plan to also evaluate at the end of the first semester teaching starting next year
- Student TA evaluations
  - ▣ Hope to look at student TA evaluations to see if we can see the impact of the training program on how students rate their TAs
  - ▣ Objective measurement of program efficacy