



Georgia Tech College of Sciences  
**School of Physics**



# **A NATIONAL SURVEY OF PHYSICS GRADUATE TA PREPARATION**

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**AAPT SUMMER 2022 MEETING**

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# GTA PREPARATION

- Needed because undergraduate students spend roughly half of their in-class time supervised by GTAs
- No “one size fits all” for GTA preparation nationwide; also, no information of nationwide practices available
- Example: 3P method\*, that fully integrates **pedagogy**, **physics**, and **professional development**, with the goals of producing GTAs who are motivated and effective teachers, and that can identify transferable skills useful for their future career



\* Phys. Rev. Phys. Educ. Res. **17**, 020125 (2021)

# **SURVEY OF GTA PREP LANDSCAPE W/ PILOT SURVEY**

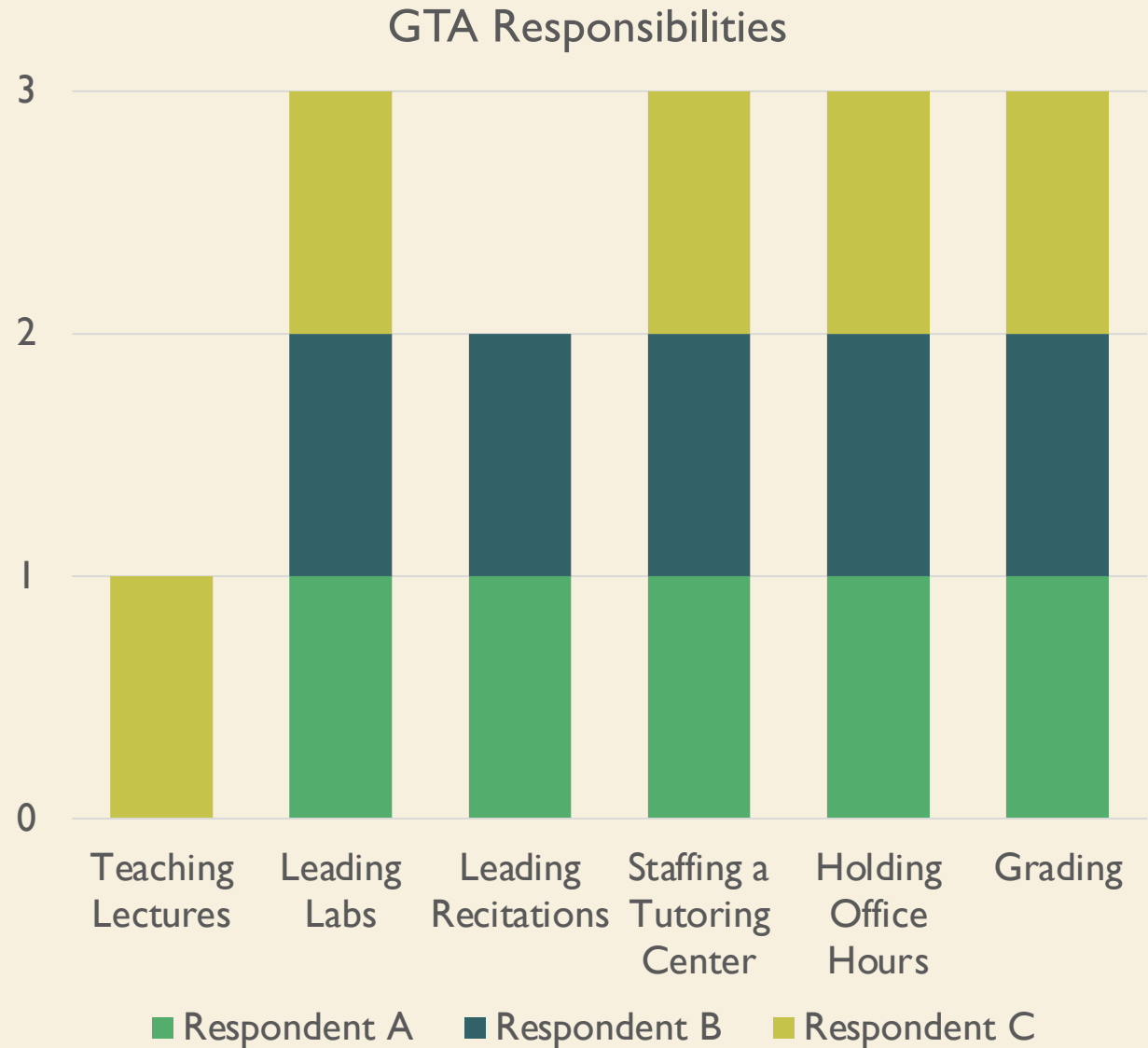
- No nationwide data of preparation strategies and their effectiveness
  - Pilot survey of 15 randomly selected institutions (from AIP roster of physics departments), conducted in April 2022
  - **Goals:**
    - Exploring the different GTA preparation strategies along with their measured effectiveness
    - Provide info to allow institutions to review and select the best strategies of GTA prep that suit the needs of their students in creating motivated and effective teachers
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# OVERVIEW OF RESPONDENTS

- 20% response rate
- All 3 respondents were from R I institutions in the western US
- Respondent A
  - 6 days of prep followed by weekly meetings and monthly workshops
- Respondent B
  - 6 hours of prep followed by 1.5-hour weekly meetings
- Respondent C
  - 20 hours of prep

# KEY GENERAL POINTS

- **All** respondents:
  - required training of some sort for TA's
  - utilized both undergraduate and graduate TA's
  - placed GTA weekly work-load at over 16 hours



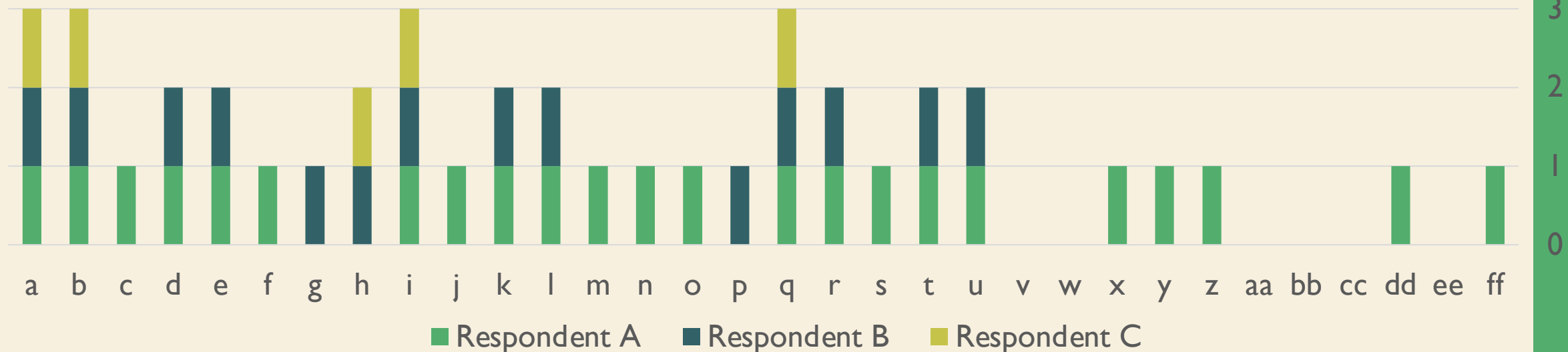
# EXTERNAL/INTERNAL PREPARATION

- *External preparation* (outside department) limited to a singular 3-hour session without measurement of effectiveness in one respondent school
- *Internal preparation* (inside department) usually occurs the week before the start of the semester
  - Diversity among who runs the program: tenure-track faculty, grad students, etc.
  - Effectiveness was measured by direct observation of GTA's, teaching evaluations from students, and GTA satisfaction surveys
  - Respondents A and B:
    - Covered **pedagogy** as well as course **content**
    - Have continual trainings/meetings/feedback throughout the term

# TOPICS COVERED IN PREPARATION

- Respondents cover wide range of curriculum
- Most common topics:
  - a. University rules and policies (e.g., academic misconduct, FERPA, etc.)
  - b. GTA duties, responsibilities, and expectations
  - i. How to facilitate group work and/or cooperative learning
  - q. How to address conceptual physics misconceptions

For full details, see my PERC poster in Poster Session I this afternoon!



# LIKERT ANALYSIS

Respondents	A	B	C
In general, our graduate students arrive at our department already well <b>prepared</b> to teach.	Neutral	Agree	Disagree
In general, our graduate students do an <b>excellent job</b> the first time they work as GTAs.	Strongly Agree	Agree	Disagree
In general, our graduate students <b>value the experience of teaching</b> as part of their professional development as physicists.	Strongly Agree	Agree	Disagree
In general, our graduate students feel <b>confident</b> in their teaching skills when they enter the classroom as first-time GTAs.	Agree	Neutral	Disagree
In general, our undergraduates are <b>satisfied</b> with the educational experience they receive from our first-time GTAs.	Strongly Agree	Agree	Agree
There is no need for our department to provide <b>additional discipline-based preparation</b> for our GTAs.	Strongly Disagree	Neutral	Strongly Disagree



# **PILOT CONCLUSIONS AND FUTURE INVESTIGATION**

Don't forget! PERC Poster Session I  
"A National Survey of Physics  
Graduate TA Preparation" for more  
information/discussion

Majority of Schools Utilize GTAs  
to Aide in Undergraduate Courses,  
and Majority Require Training

Continual Training and Feedback  
Lead to Better GTA Preparation

Complete Nationwide Survey with  
More Extensive Questions