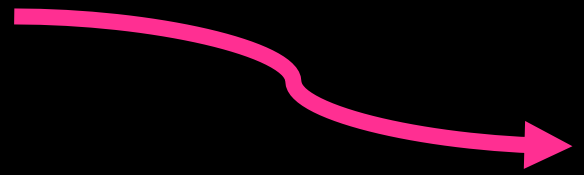
Portland State UNIVERSITY

Creating Inclusive Learning and Mentoring Environments: Professional Development in Pedagogy

Council of Graduate Schools
Summer Workshop and New Deans Institute, Portland, OR
July 15, 2025

Erin Shortlidge, PhD
Associate Professor of Biology
Biology Education Research
Portland State University



Executive Director, Center for Teaching and Learning
Professor of Biology
University of New Mexico

Goals for Today

Frame the importance of advancing GTA teaching training

- Explore why GTA teaching matters
- Understand factors that contribute to graduate student teaching development, identify institutional priorities and levers related to improved GTA training
- Consider how to advance GTA teaching training programs at your institution to reach your specific goals

SHORTLIDGE
BIOLOGY EDUCATION
RESEARCH GROUP PDX

Our group's overarching goal is to improve the ecosystem of STEM education

We aim to use the most appropriate methods available to us to answer the question or study the phenomenon, this includes mixed qualitative and quantitative methodology

Good Teaching?

Describe what ‘good teaching’ might look and feel like in a classroom at your institution.

Join at

slido.com

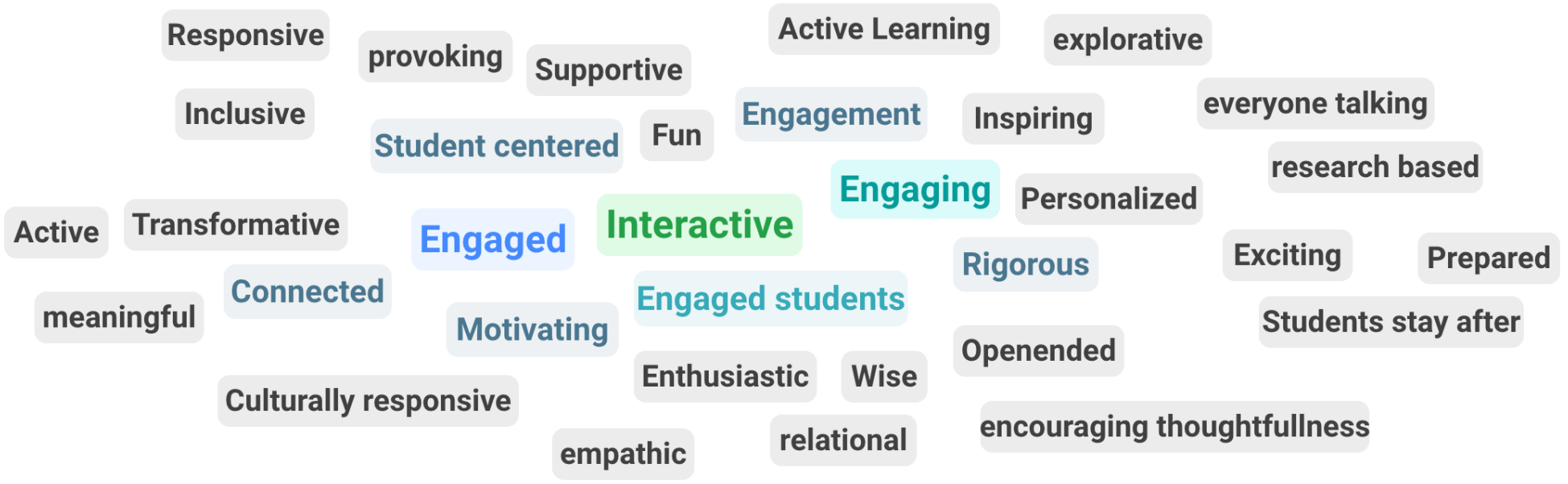
#3273 142

Word cloud
93 votes

Poll settings

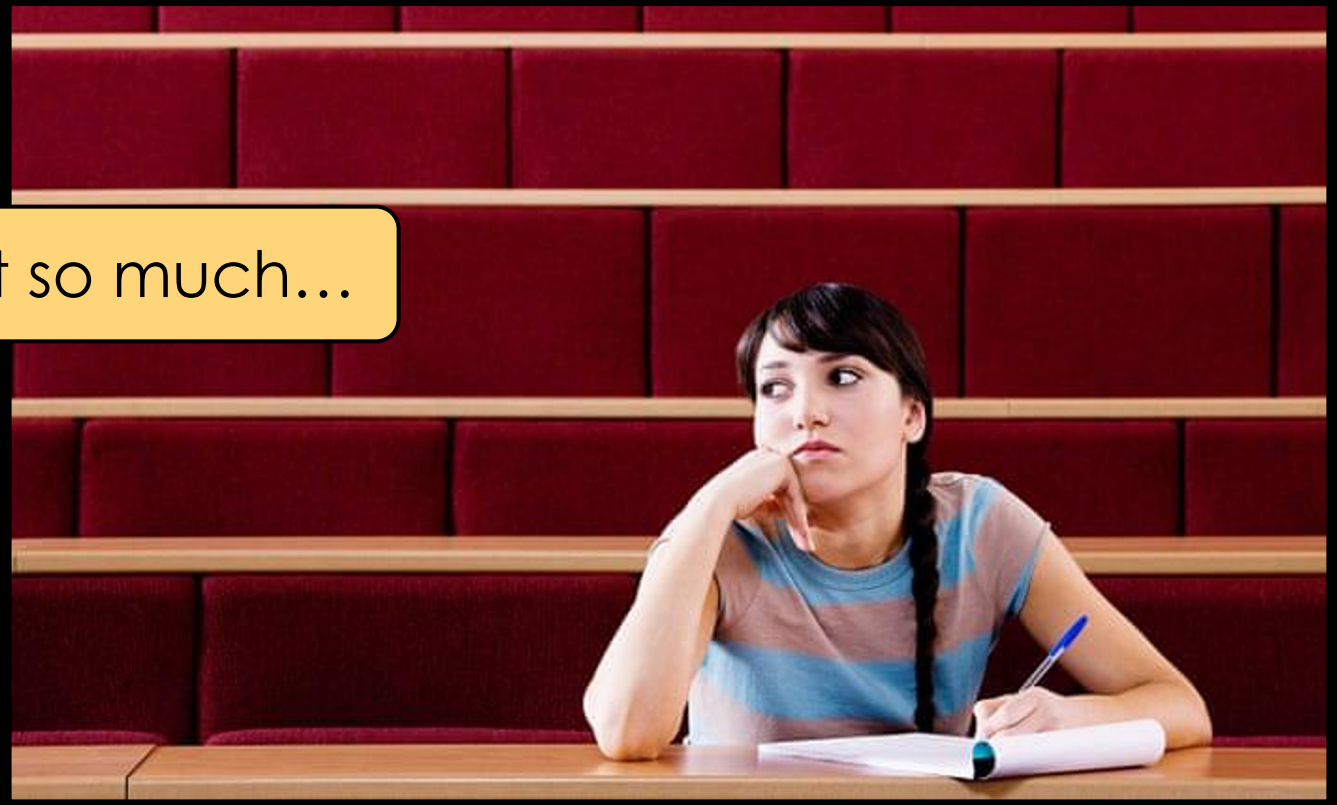
Describe what ‘good teaching’ might look and feel like in a classroom at your institution.

Review answers 92

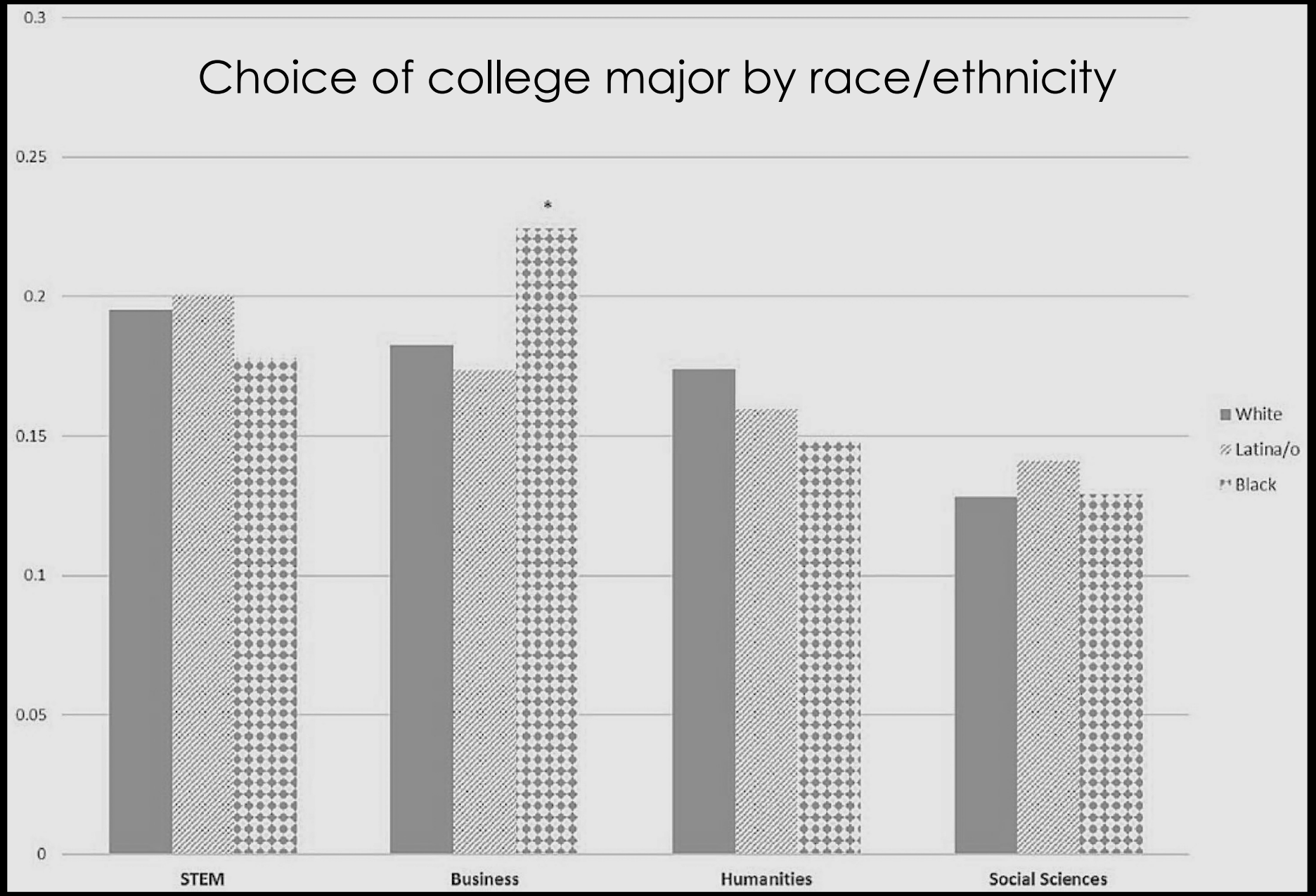


Are students in our courses experiencing ‘good teaching’?

Maybe not so much…

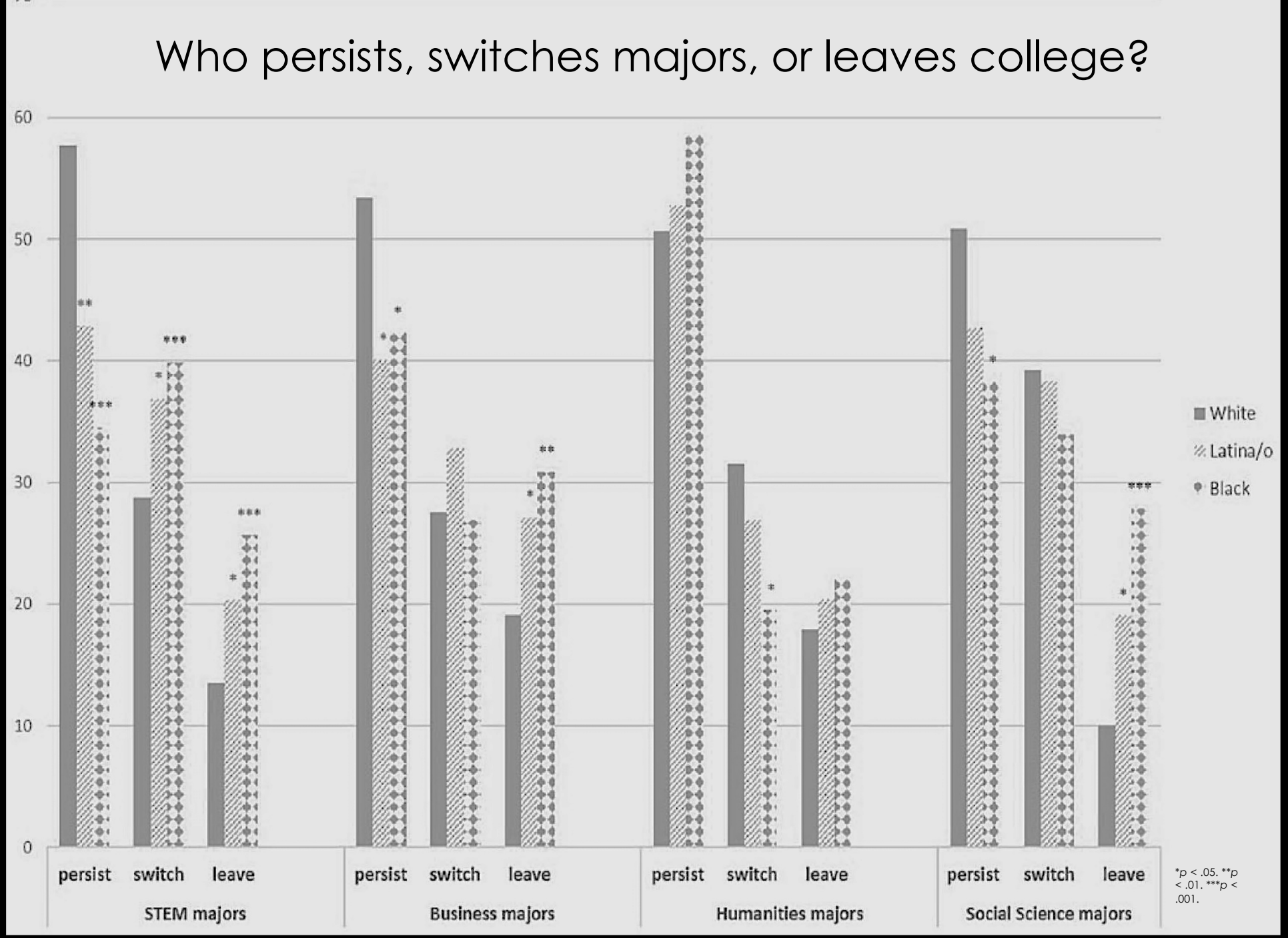


Choice of college major by race/ethnicity



Riegle-Crumb et al., 2019

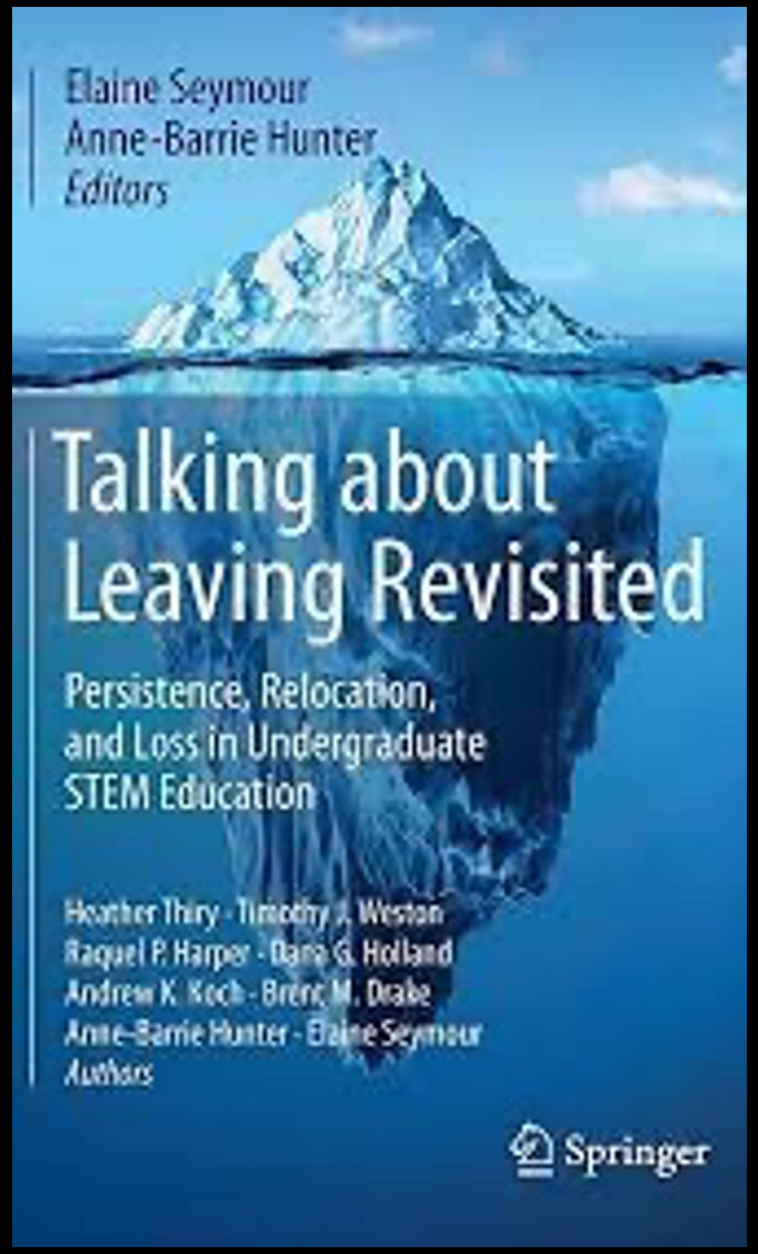
Who persists, switches majors, or leaves college?



Riegle-Crumb et al., 2019

What we just saw sets up a cycle of who persists and who does not.

Why are students not staying in college?



Many college students flee (STEM majors) due to:

1. Issues of poor teaching, curricular design and the negative climate of STEM

2. Career-related issues (rejection of STEM careers and associated lifestyles, more appealing options)

3. Attitudinal factors (discouraged/lost confidence due to low grades, declined motivation in intro courses)

Reflect

Consider your own journey, and/or those of your students, can you remember or envision how the below factors might be impactful?

poor teaching and curricular design,
negative climate

career-related concerns

being discouraged, loosing motivation

Research as Our Guide

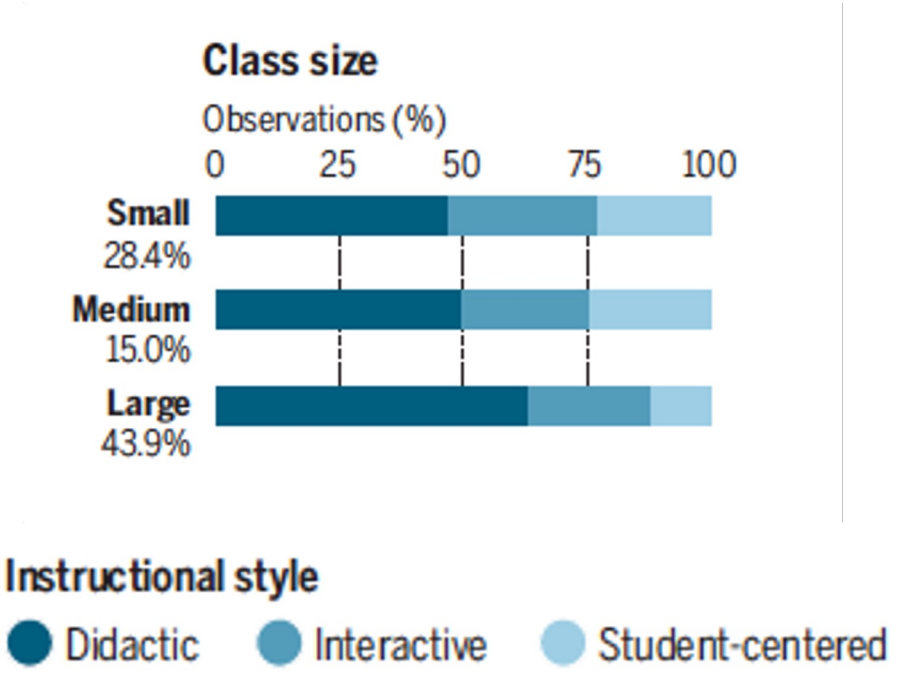
"Best practices" in teaching are rooted in cognitive science, neuroscience, education and social psychology research, making them "evidence-based" –generally well-structured and learner-centered

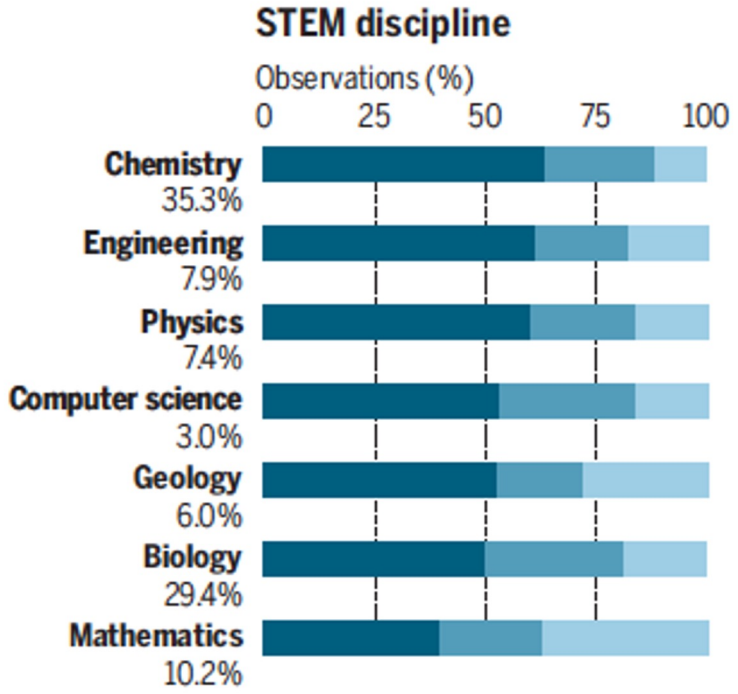
- narrow success gaps
- improve outcomes and retention
- promote interest and belonging

Handelsman et al. 2004; Eddy & Hogan 2014; Freeman et al. 2014; Dewsbury & Brame 2019, Theobald et al. 2020; etc.…

Use of Evidence-Based Practices in STEM Classrooms

COPUS observation protocol; observed over 2000 classes, 709 courses, of 548 faculty at 24 R1 institutions





Smith et al. 2013; Stains et al. 2018

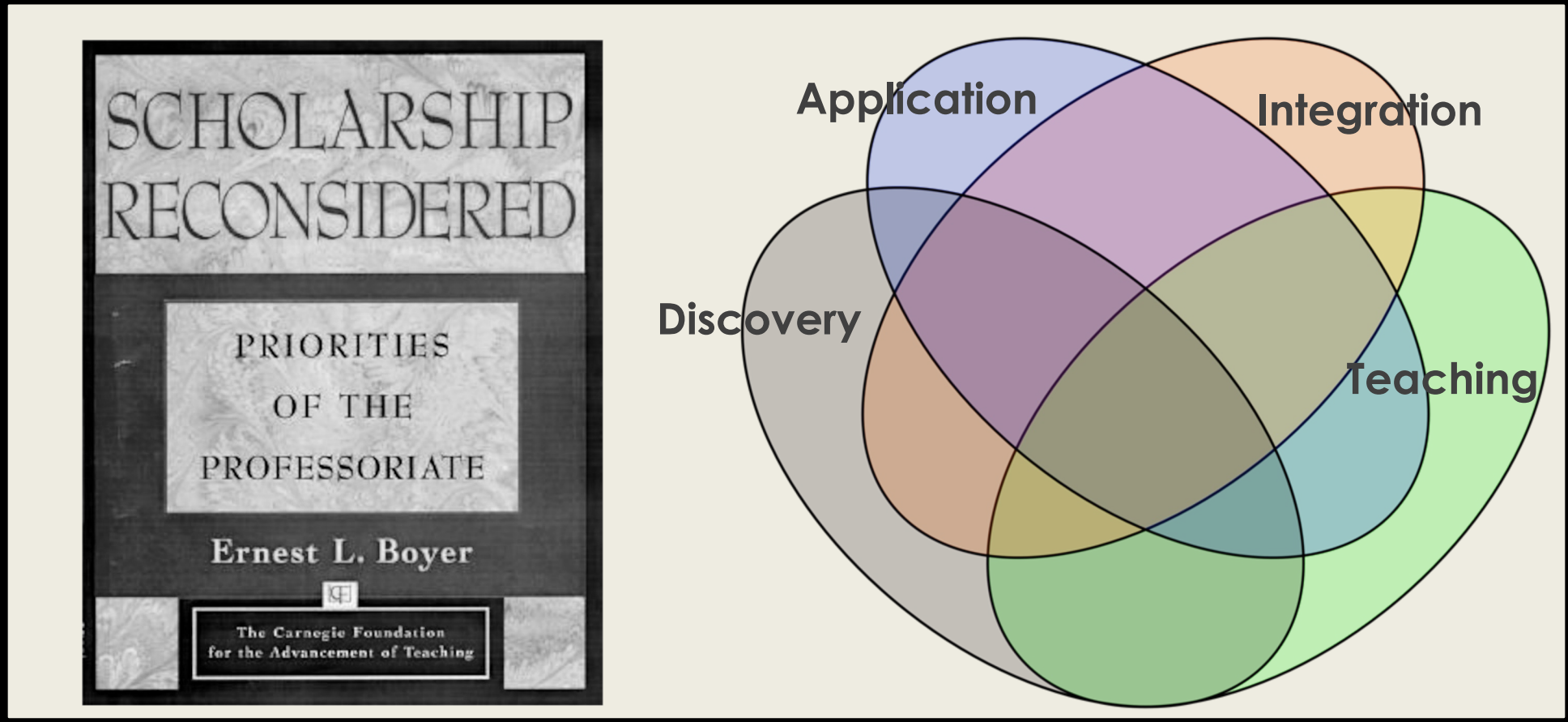
Why Such Low Adoption of Evidence-Based Practices?

Lack of awareness, training, time…

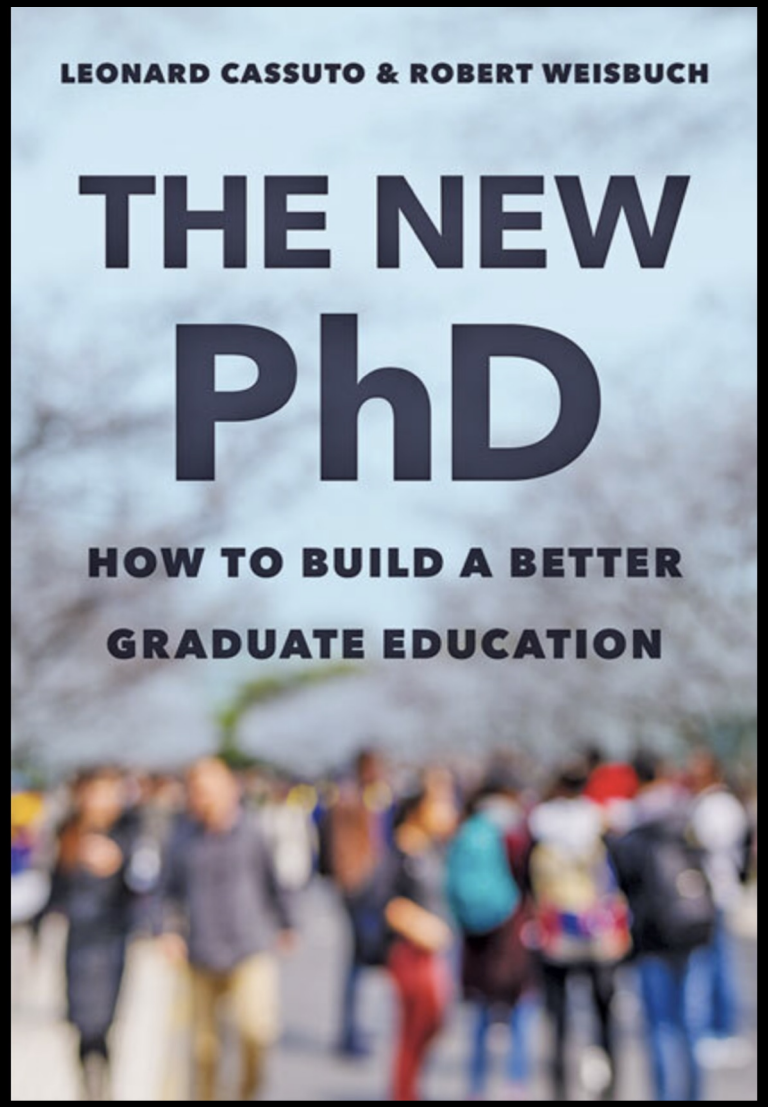
Perceptions of pervasive tension between research and teaching in academic culture – highly contextual…

individual, department,
institution, culture, discipline
student, faculty, etc.,

Dancy & Henderson, 2010; A. Jenkins 2003



E. Boyer presented an argument for a more integrated scholarship, 1990



"The path between research and teaching is a two-way street, as it should be, even with occasional collisions. One measure of the traffic flow up and down that street is how we educate our educators" p. 265

Only those graduate students with strong preparation as teachers will succeed in today's workplace – Modern Language Association's report on doctoral study in modern language and literature (2014)

Why Focus on Graduate Students?

- They have **a lot** of face time with undergraduates as graduate teaching assistants (GTAs)
- Potential for GTAs to **minimize or mitigate potential harm done** in large intro courses
- GTAs learning about evidence-based teaching practices can benefit them and their students
- Current graduate students are our **future faculty**

Focus on Graduate Students and Teaching

- Students may not see GTAs as credible or knowledgeable
- GTAs feel unprepared to serve as teachers and research mentors

GTAs rarely receive adequate teacher training, but when they do:

→can lead to greater self-efficacy, preparedness, interest in teaching, career readiness

→does not seem to detract from research skills or productivity

Connolly et al. 2016, 2018, Gardner & Jones 2011, Schussler et al. 2015; Reeves et al. 2016; Feldon et al. 2018; Shortlidge & Eddy, 2018; Goodwin et al. 2018, Rodenbusch et al. 2018

Worksheet – 10 minutes

think/write to yourself, then share with a neighbor

1) Current State

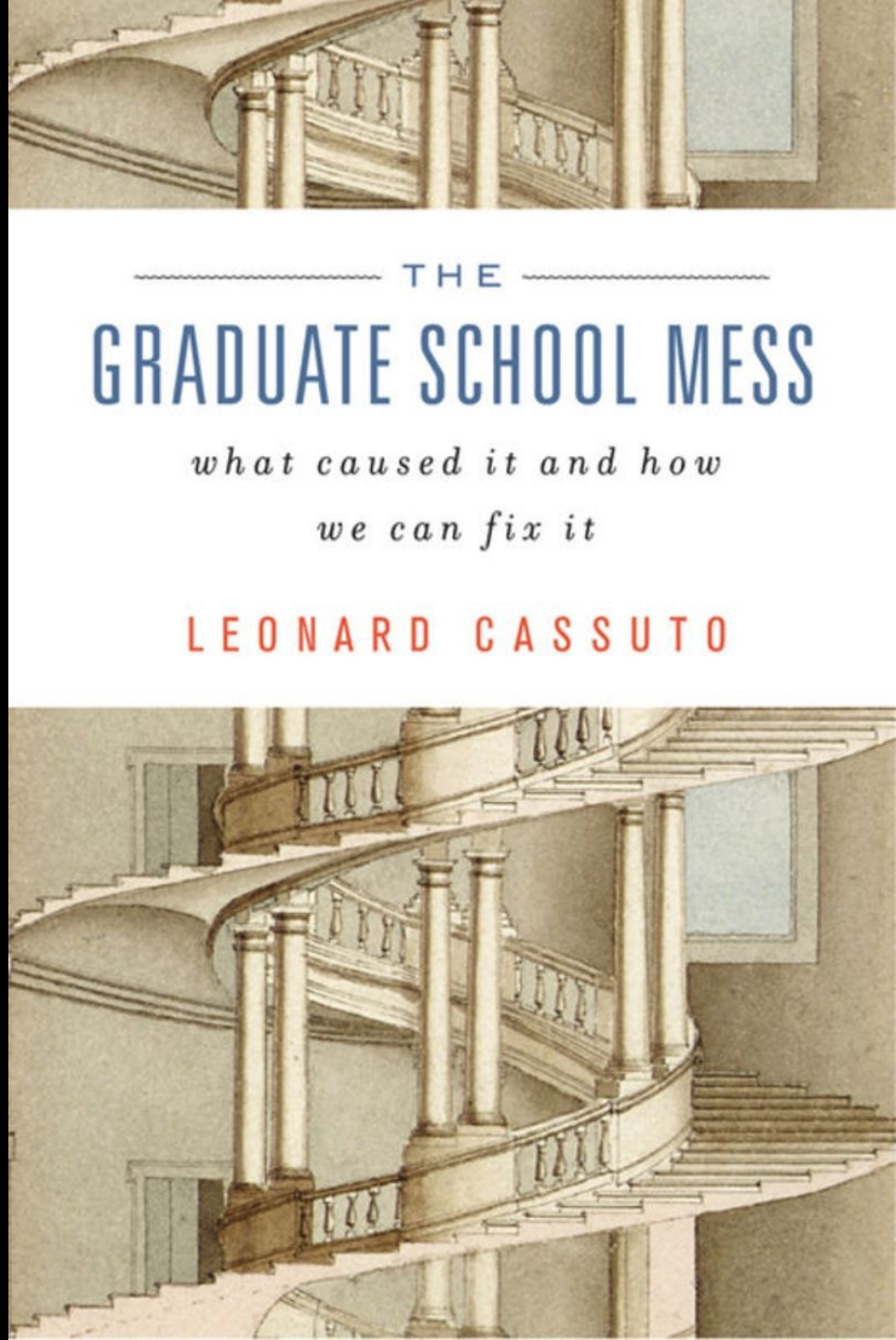
What do you know about GTAs at your institution or within your unit(s)?

- How many grad students are GTAs? How much do they teach? How many students do they teach? What is the proportion of courses with GTAs vs. faculty as lead instructors? How do departments differ as it relates to GTAs? Is there data on GTA-led course/lab outcomes?

What GTA training programs or resources does your institution currently provide? What is included in those programs/resources?

A tension was set up a long time ago…

It seems to have been resource scarcity that inspired Harvard to liberalize its funding packages for graduate students, making them researchers and teachers simultaneously. While conceding the need to train students as teachers, the university didn't create formal structures for pedagogical instruction – suggesting that teaching did not need to be taught.



REPORT

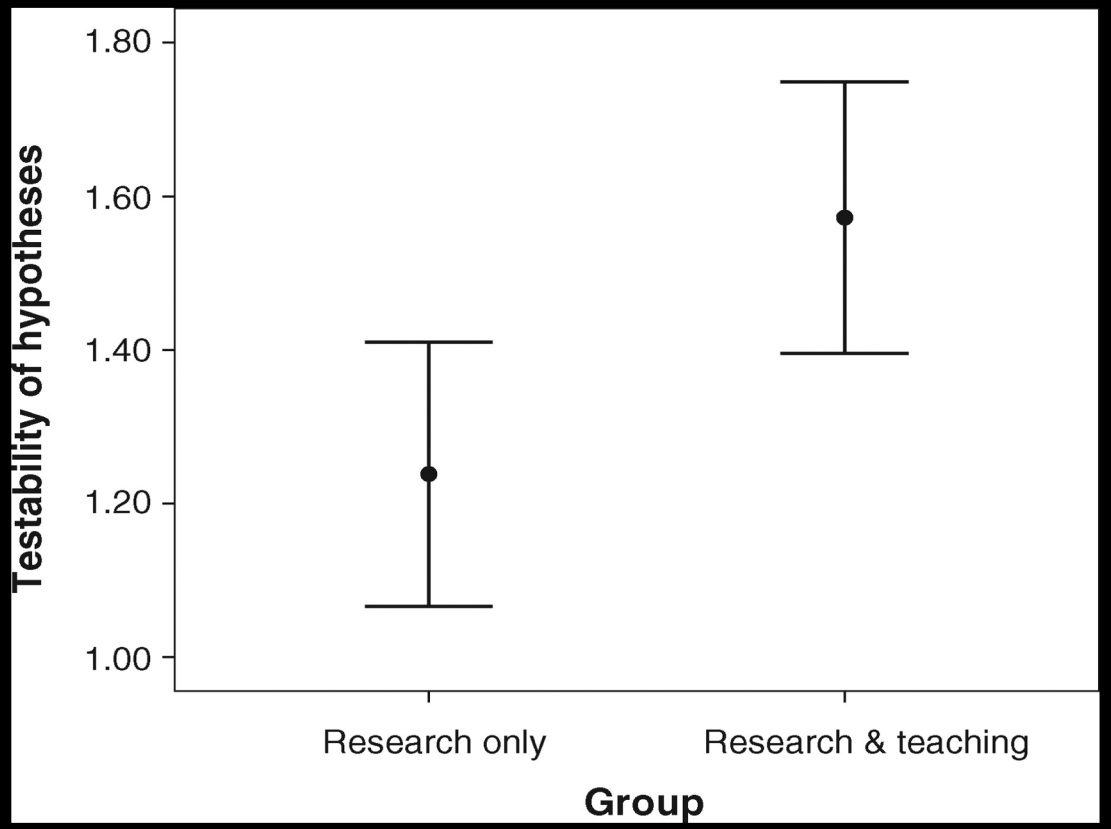
Graduate Students' Teaching Experiences Improve Their Methodological Research Skills

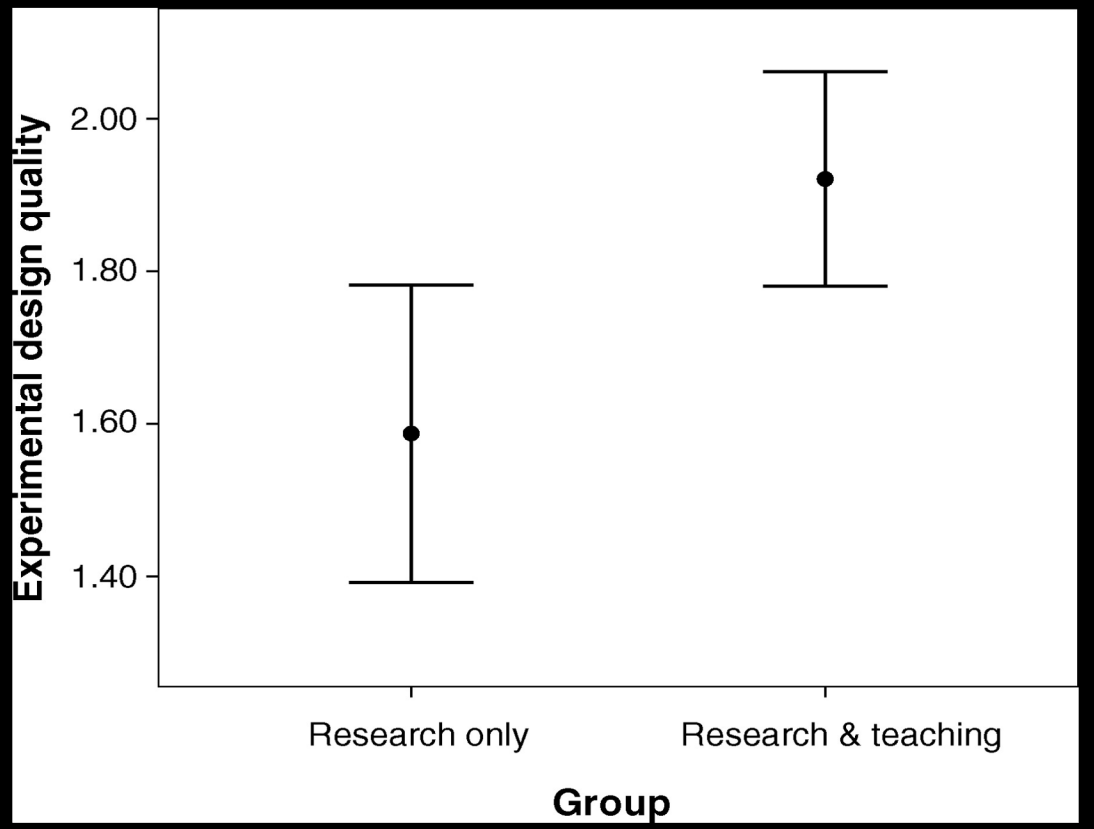
David F. Feldon[1,*], James Peugh[2], Briana E. Timmerman[3], Michelle A. Maher[4,5], Melissa Hurst[4], Denise Strickland[4], Joanna…

+ See all authors and affiliations

Science 19 Aug 2011:
Vol. 333, Issue 6045, pp. 1037-1039
DOI: 10.1126/science.1204109

Positive effects for graduate students with both research and teaching experiences compared with research experiences alone





David F. Feldon et al. Science 2011;333:1037-1039

PLOS ONE

RESEARCH ARTICLE

The trade-off between graduate student research and teaching: A myth?

Erin E. Shortlidge[1]*, Sarah L. Eddy[2]

1 Department of Biology, Portland State University, Portland, Oregon, United States of America, **2** Department of Biological Sciences, Florida International University, Miami, Florida, United States of America

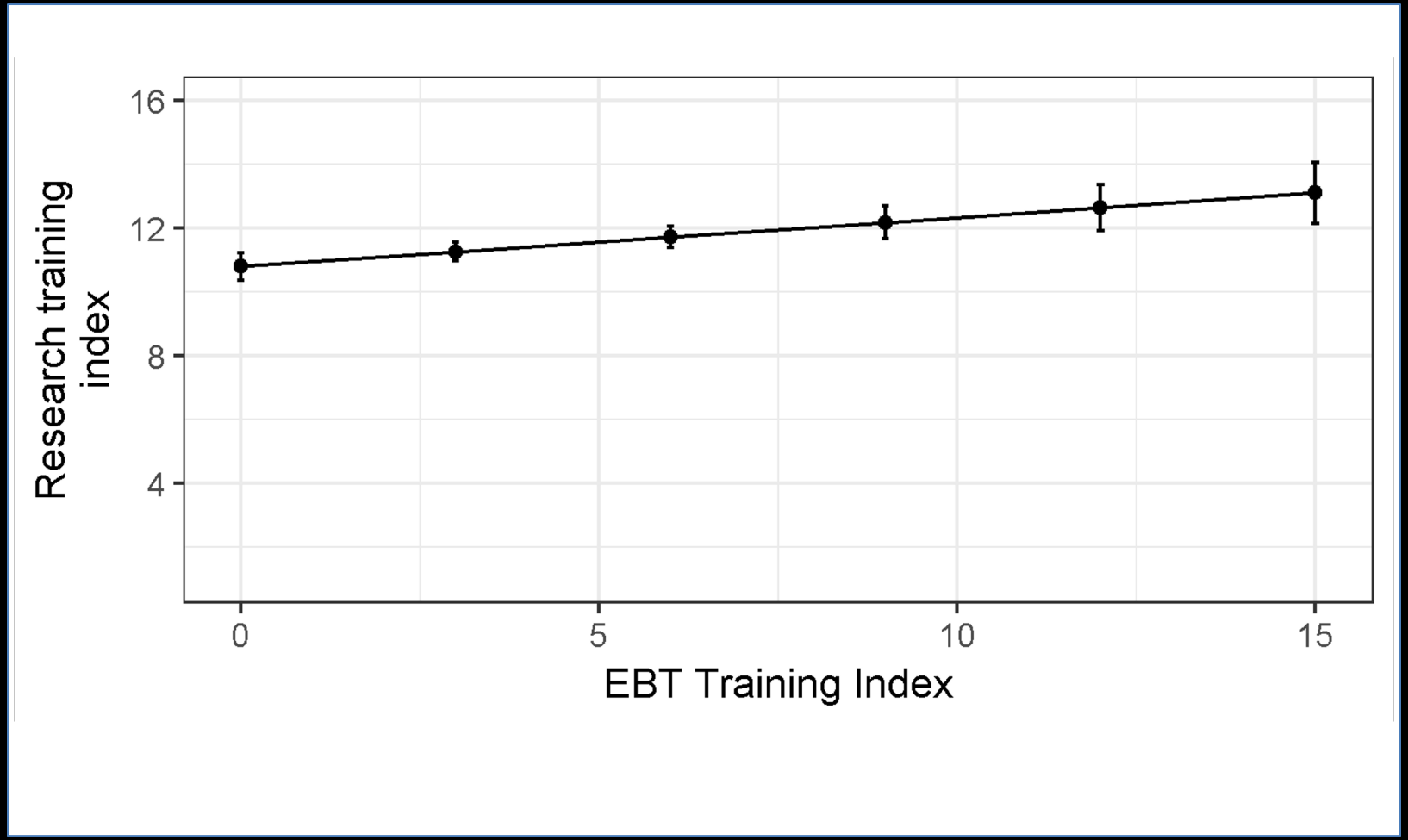
* eshortlidge@pdx.edu

Race/Ethnicity		*Year in PhD Program*		*Career Goals*	
Non-URM	83%	2	22%	Research Faculty	30%
URM	8%	3	25%	Non-academic Research	29%
NA	9%	4	18%	Teaching Faculty	22%
		5	19%	Non-Research	12%
Gender		6+	17%	Unsure	7%
Female	58%	*University Type*		*Age (years)*	
Male	36%	R1	72%	< 27	38%
NA	4%	R2/R3	19%	27–30	25%
Other	2%	Other or NA	9%	>30	37%

Description of study sample (N = 338 life science PhD students).

https://doi.org/10.1371/journal.pone.0199576.t001

No evidence for trade off between investing in teaching and confidence in research skills



N=338

No evidence for trade off between research productivity and teaching investment – slight synergy between the two…

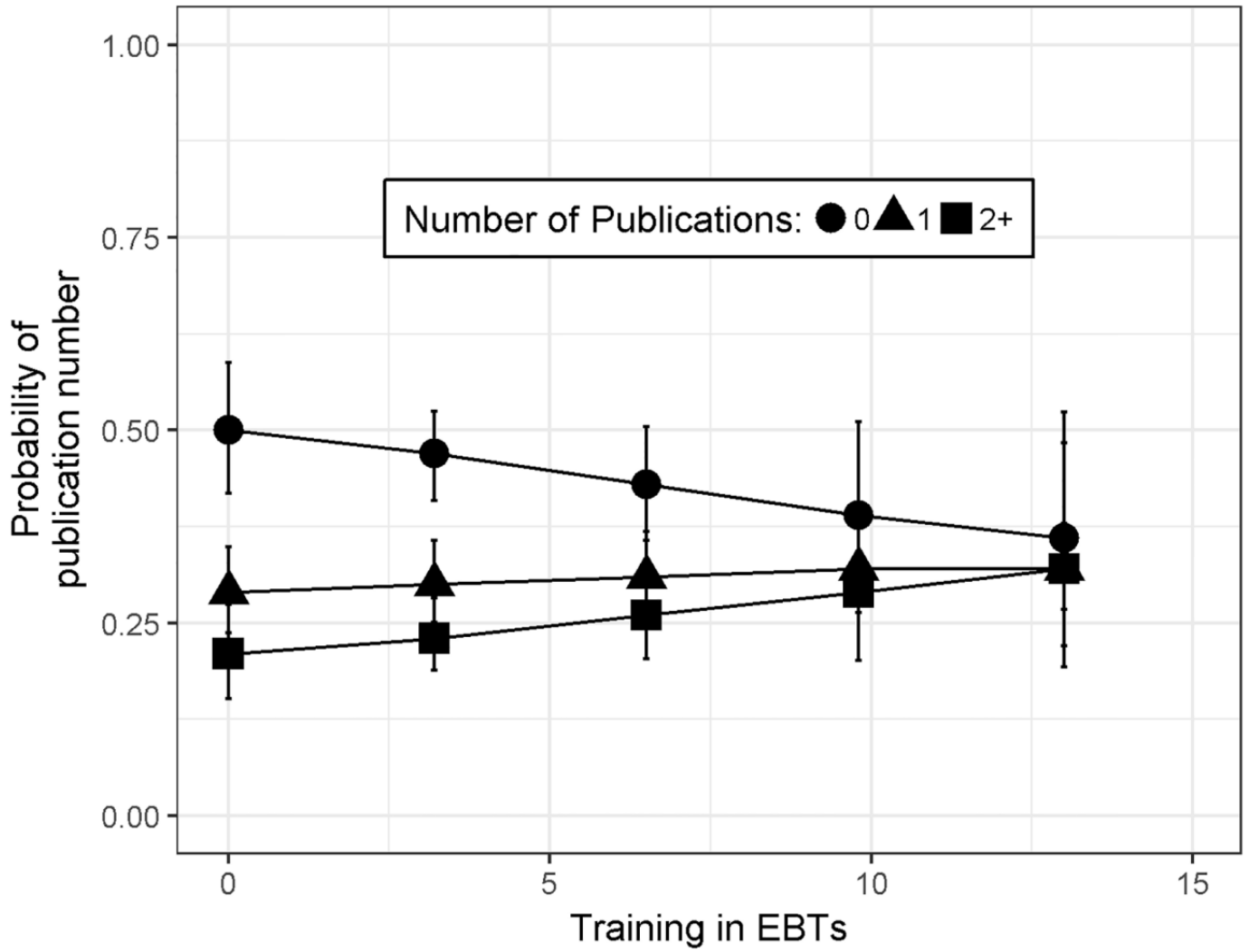
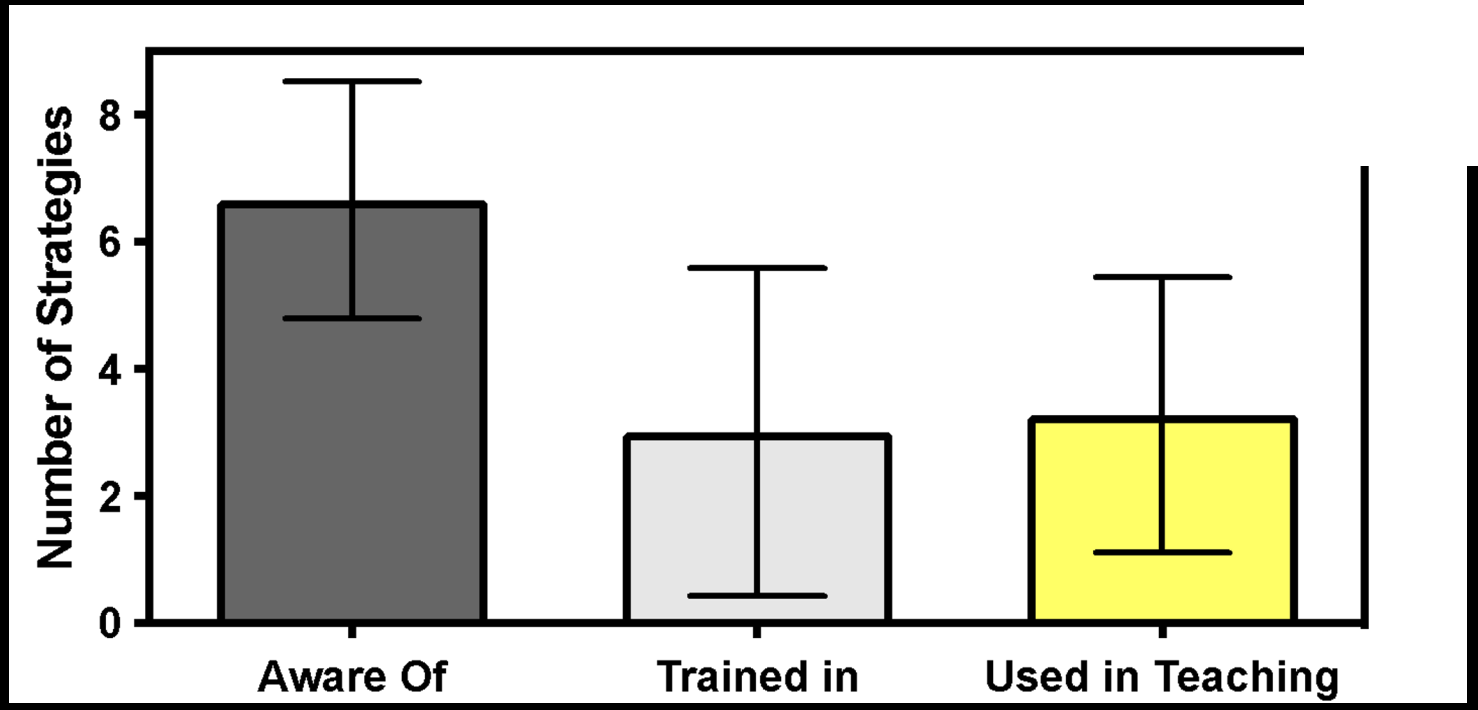


Fig 3. Investment in EBT is not detrimental to research productivity. Graduate student training in EBT does not significantly predict research productivity as measured by number of peer-reviewed publications from their PhD program to date. The estimates illustrated here are derived from the best-fit proportional log odds model controlling for year in program, and whether they already have a Master's degree. Bars represent upper and lower 95% confidence limits around the predicted probability.

https://doi.org/10.1371/journal.pone.0199576.g003

Graduate Students Know About Evidence-Based Practices



n = 541

n = 471

PLOS ONE

RESEARCH ARTICLE

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CBE—Life Sciences Education, Vol. 17, No. 3 | Article

Free Access

Catching the Wave: Are Biology Graduate Students on Board with Evidence-Based Teaching?

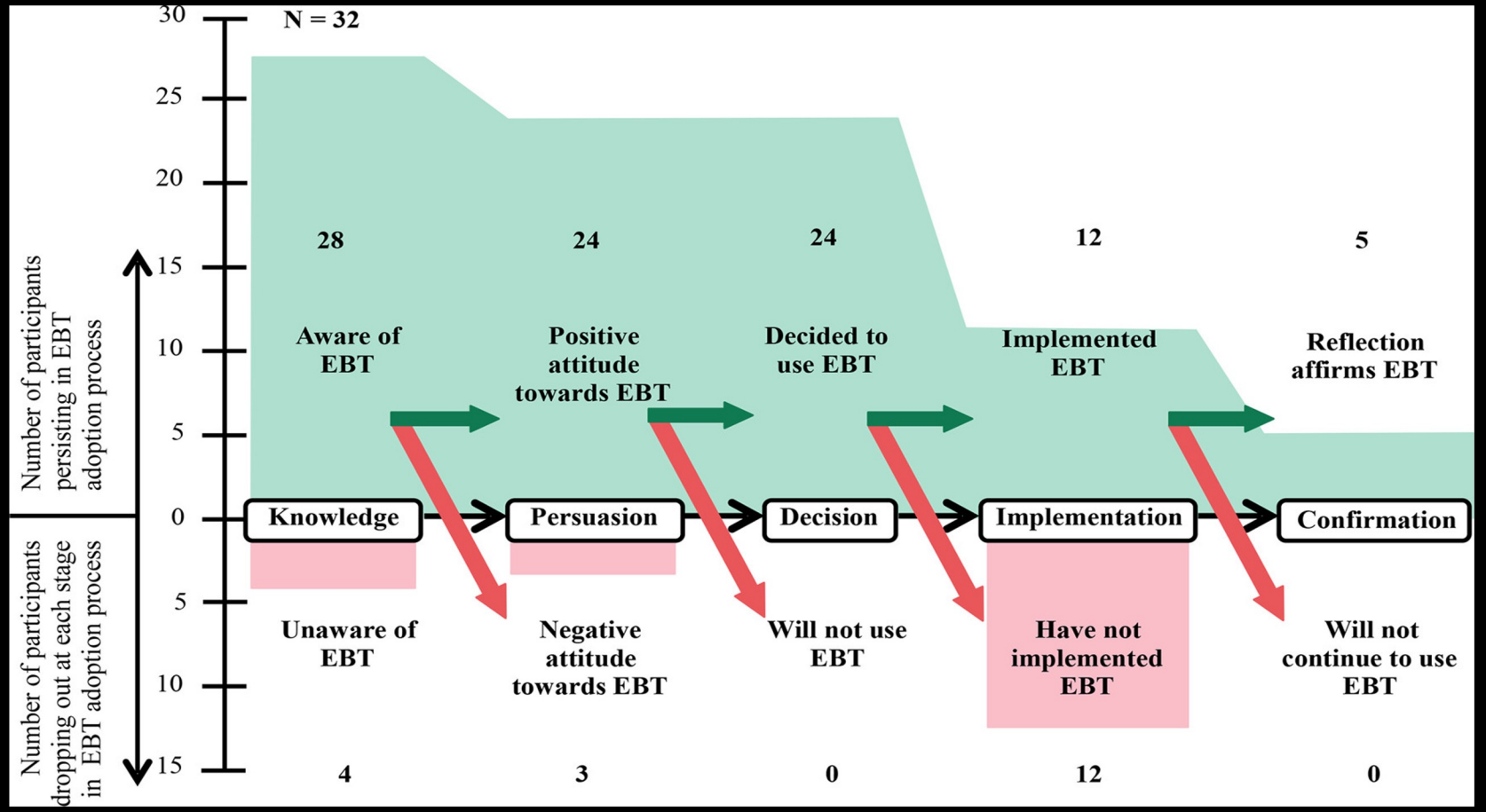
Emma C. Goodwin, Jane N. Cao, Miles Fletcher, Justin L. Flaiban, and Erin E. Shortlidge

Marilyne Stains, Monitoring Editor

Erin E. Shortlidge

Published Online: 24 Aug 2018 | https://doi.org/10.1187/cbe.17-12-0281

Graduate Students Want to Use Evidence-Based Practices



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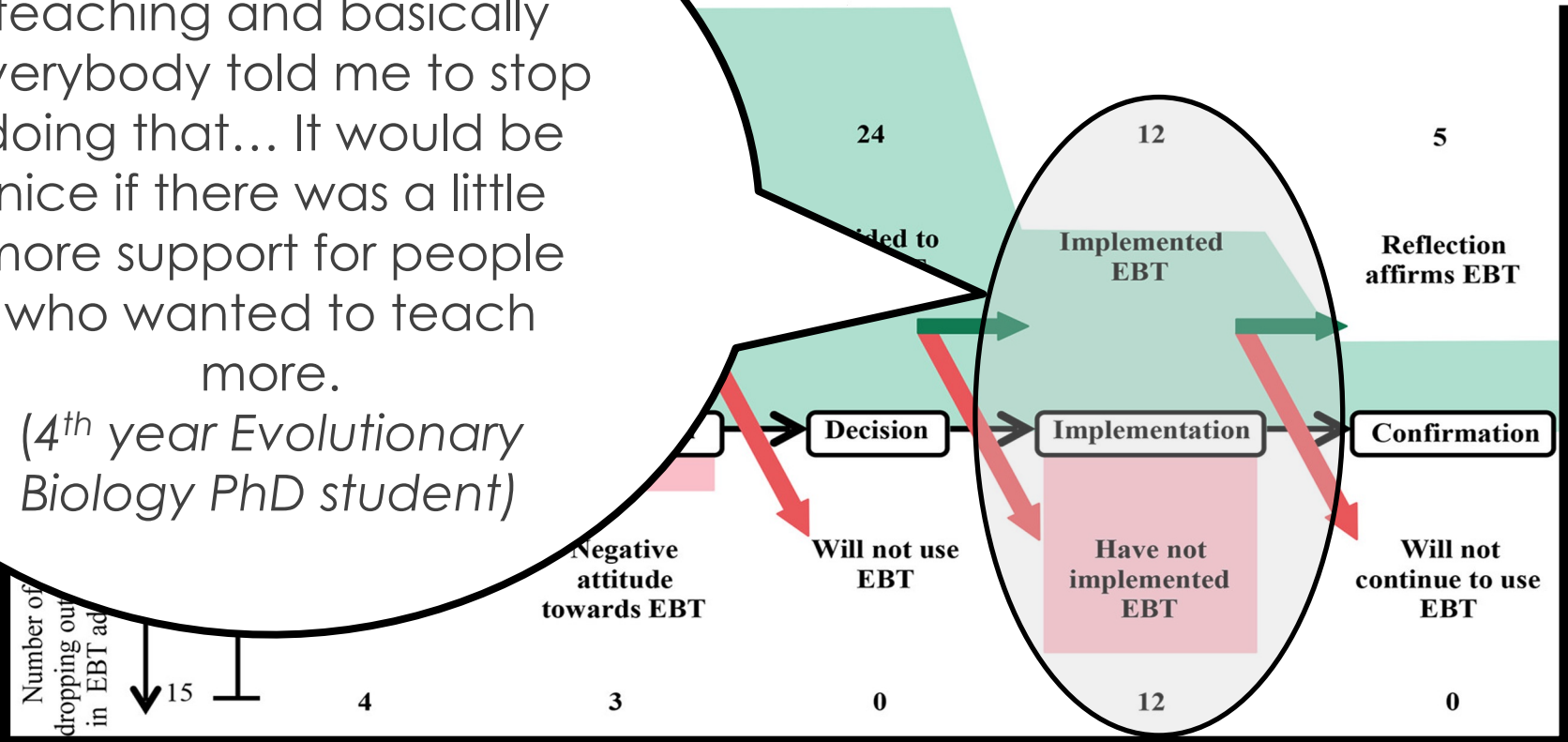
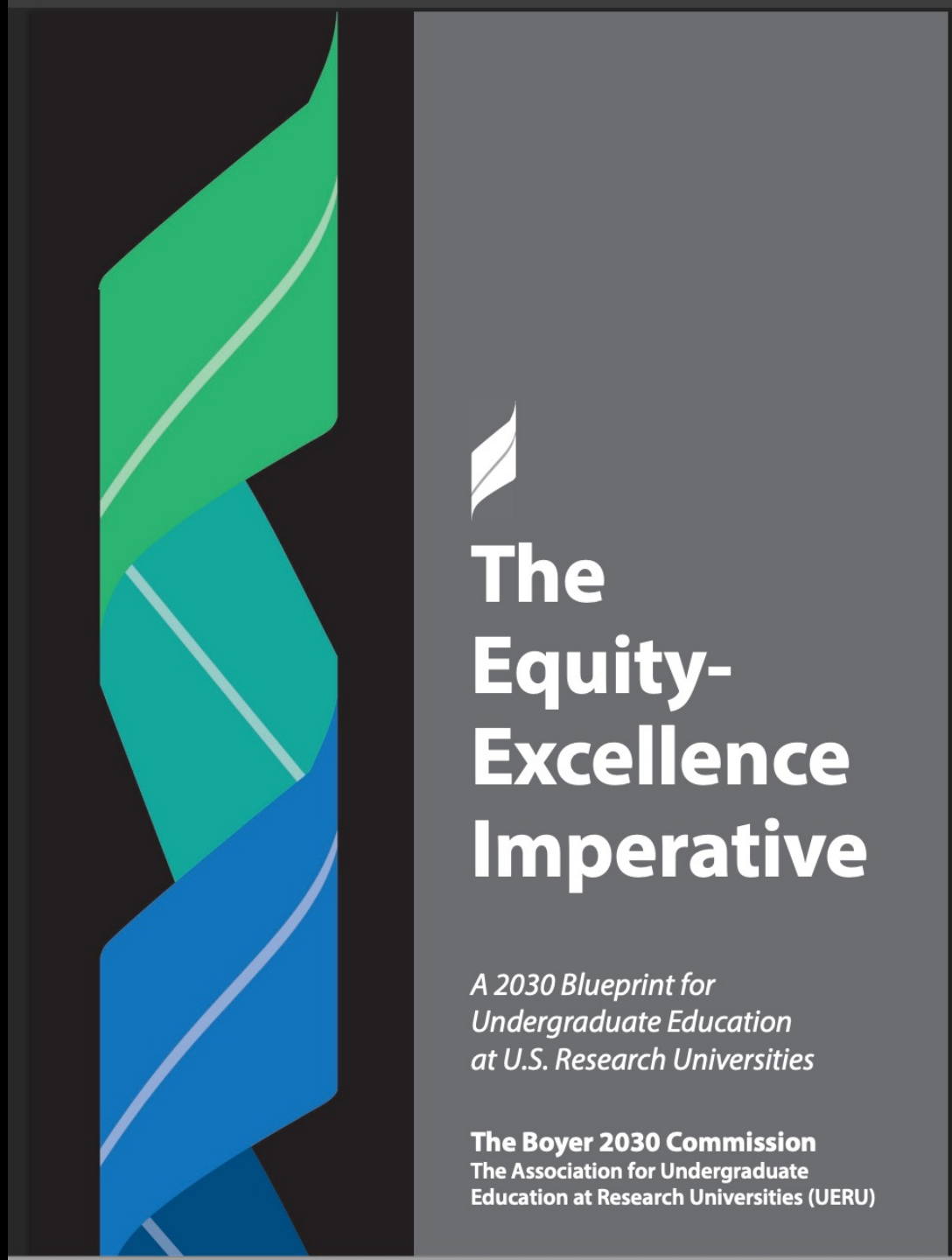
I really wanted to do more teaching and basically everybody told me to stop doing that… It would be nice if there was a little more support for people who wanted to teach more.

(4th year Evolutionary Biology PhD student)



Doctoral education: *“That’s where you’re going to get the pedagogical experience, the culturally responsive strategies that are going to engage.”* – Deborah Santiago, Co-Founder and CEO, Excelencia in Education, Boyer 2030 Commissioner



We discussed undergraduates leaving. What do we know about why they stay?

Persistence Factors

There are multiple theories to explain undergraduate persistence:

- Academic & Social Integration
- External (Student) Factors
- Institutional Culture
- Institutional Support
- Involvement
- Sense of Belonging

Persistence Factors

There are multiple theories to explain undergraduate persistence:

Academic & Social Integration

External (Student) Factors

Institutional Culture

Institutional Support

Involvement

Sense of Belonging

Many Reasons Students Feel They **Do Not** Belong

I'm just a first-generation college student, so literally everything that has to do with college has been kind of on the rough side. I didn't know what those terms meant as far as like - what is a major? What's the difference between a Bachelor's and a Master's degree? What is a minor? I didn't know anything about college.

I've only seen maybe only two other brown people in math, so it gets pretty difficult to have groups and really try to go outside the class and get together, because I feel like I'm not on the same level or culturally the same. I don't know how to explain it.

I personally don't feel a sense of community. I'm not a city person at all. And I don't live anywhere near [the university]. I commute in and so basically, I just come to school and then I just sit around by myself to do all my schoolwork, go to class and then as soon as I'm done, I just go straight home.

impostor syndrome, stereotype threat, feelings of isolation…

Thriving or Simply Surviving? A Qualitative Exploration of STEM Community College Students' Transition to a Four-Year University. M. Gray, S. Gunarathne, N. Nguyen, E. Shortlidge. CBE—Life Sciences Education 2022 21:3

Belonging scholar T. Strayhorn frames sense of belonging in college in this holistic way:

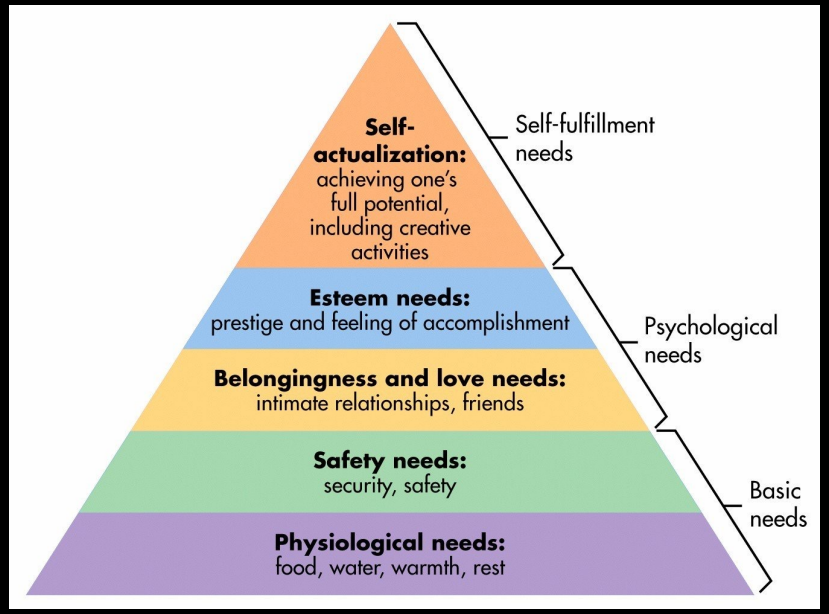
> *Sense of belonging refers to students perceived social support on campus, a feeling or sensation of connectedness, and the experience of mattering or feeling cared about, accepted, respected, valued by, and important to the campus community or others on campus such as faculty, staff, and peers.*
>
> *Strayhorn 2018, p. 24*

Use research as a guide, acknowledge the importance of student-centered classrooms - which are inclusive classrooms.

Inclusive Education

"a process of addressing and responding to the diversity of needs of all learners…"

The Ecology of Inclusive Education; Anderson et al., 2013; UNESCO, 2005



https://www.simplypsychology.org/maslow.html Maslow's Hierarchy of Needs

By learning some basic strategies, GTAs can create better classrooms.

Worksheet: 15 minutes

(think first, then discuss with your neighbors, share)

2) Current and Future State

Are GTAs **learning** about EBTPs at your institution? If so, where, how, by whom? If not, how could they?

Are GTAs **trained** to use EBTPs? If so, where, how, by whom? If not, how could they?

How would you know if EBTPs were being used - and used effectively by GTAs?

The Web of TPD Reform

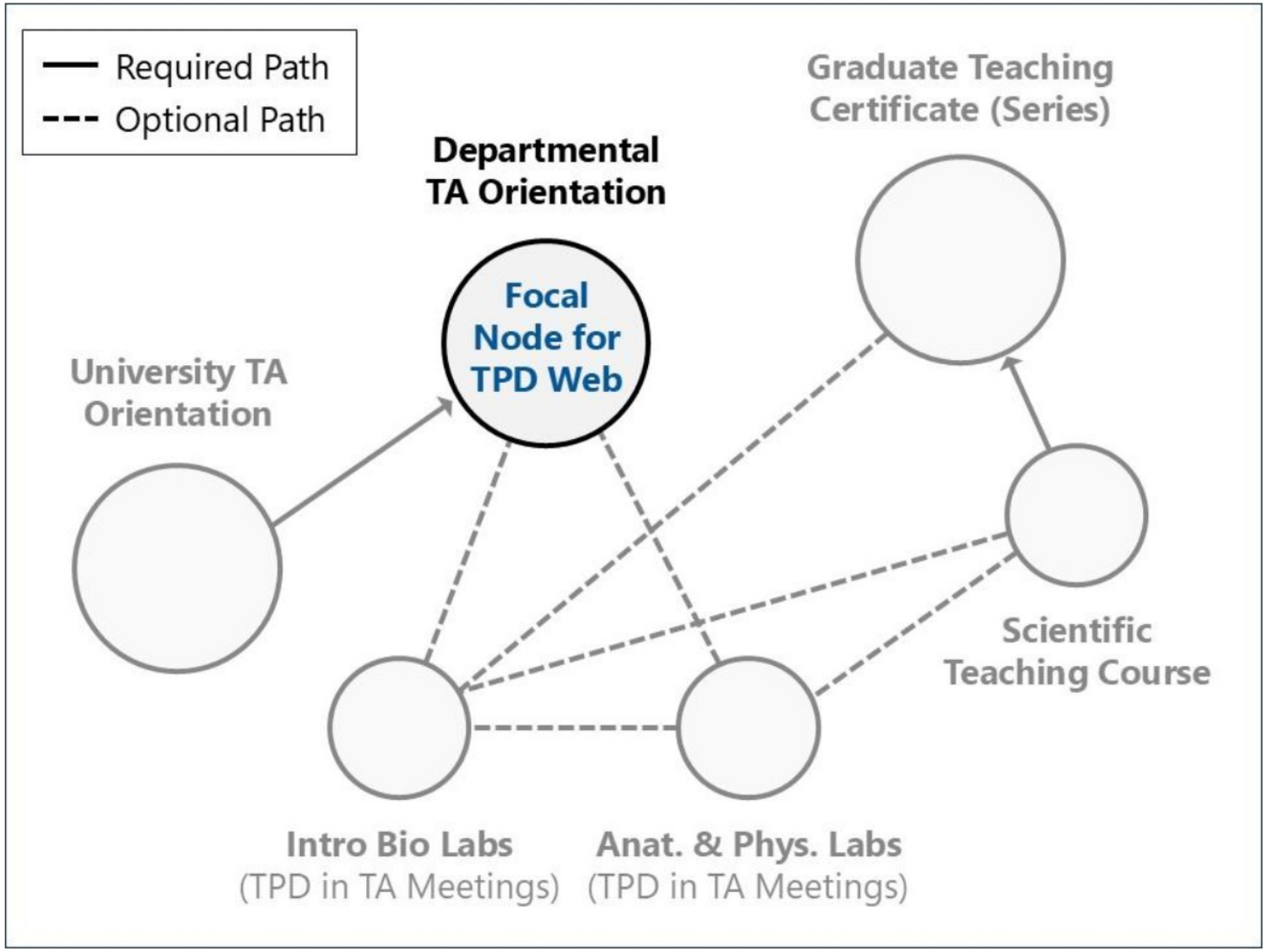
The Web of TPD Reform (a.k.a. the **TPD Web**) is a tool for mapping the features of Teaching Professional Development (TPD) programs for Teaching Assistants (TAs) in higher education. This version of the TPD Web is for general use among the BioTAP community: it may be used as a reflective tool generally, for envisioning reform goals, and as a tool for research on TA-TPD. As for more specfic uses...

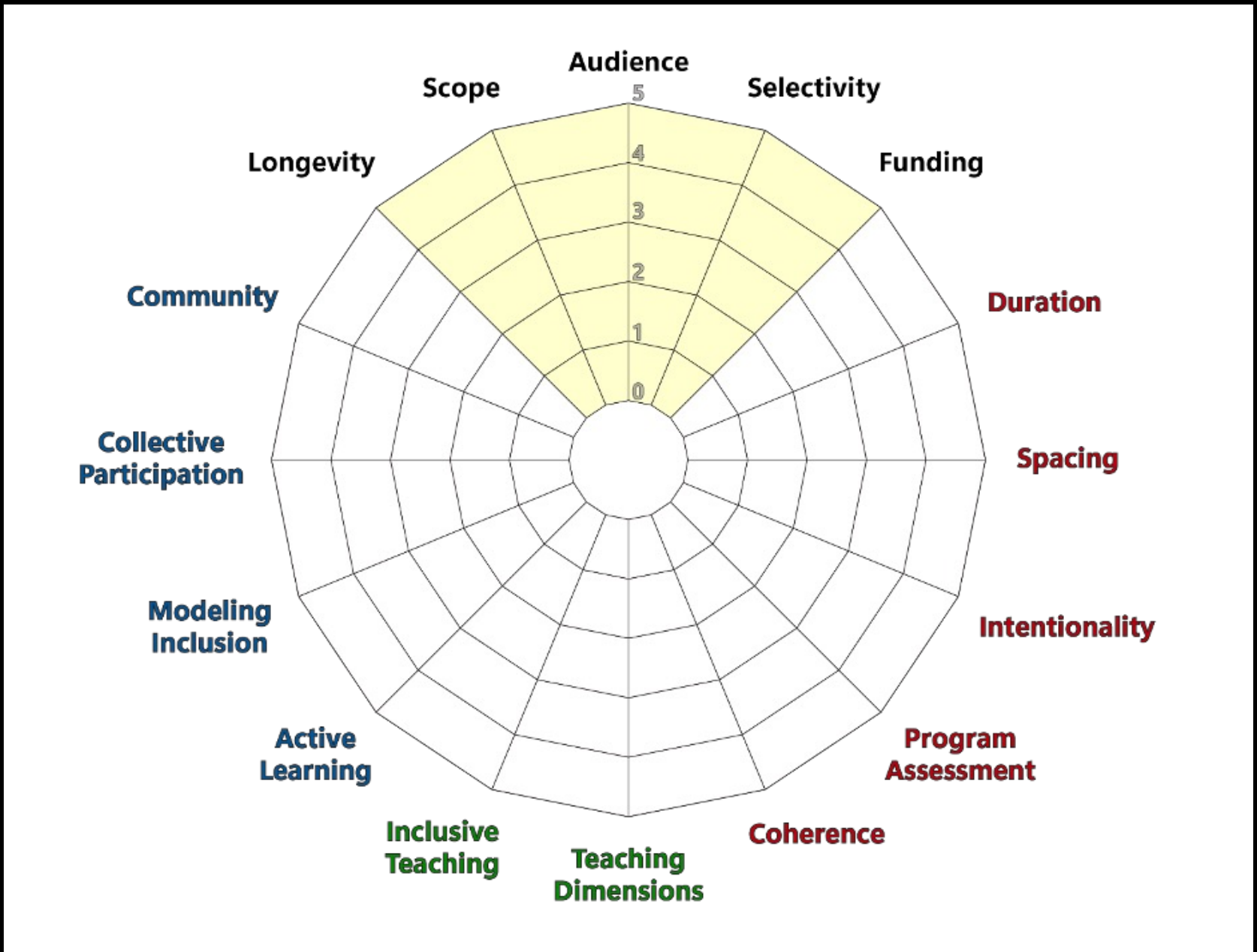
https://biotap.org/tpdweb/

NSF-IUSE
Award #
2142742

Chouinard, A.J., Shihadih, D.S., Lee, S.W., Gutzler, S.J., Heinrich, K.K., Asgari, M., and E.E. Shortlidge. *The Web of TPD Reform: A Reflective Tool for Analyzing and Improving Teaching Professional Development Programs for Teaching Assistants. (in revision)*

Example (Simplified) TPD Ecosystem




Audience
Selectivity
Funding
Duration
Spacing
Intentionality
Program Assessment
Coherence
Teaching Dimensions
Inclusive Teaching
Active Learning
Modeling Inclusion
Collective Participation
Community
Longevity
Scope
5
4
3
2
1
0

CONTEXTUAL FEATURES of TPD STRUCTURE

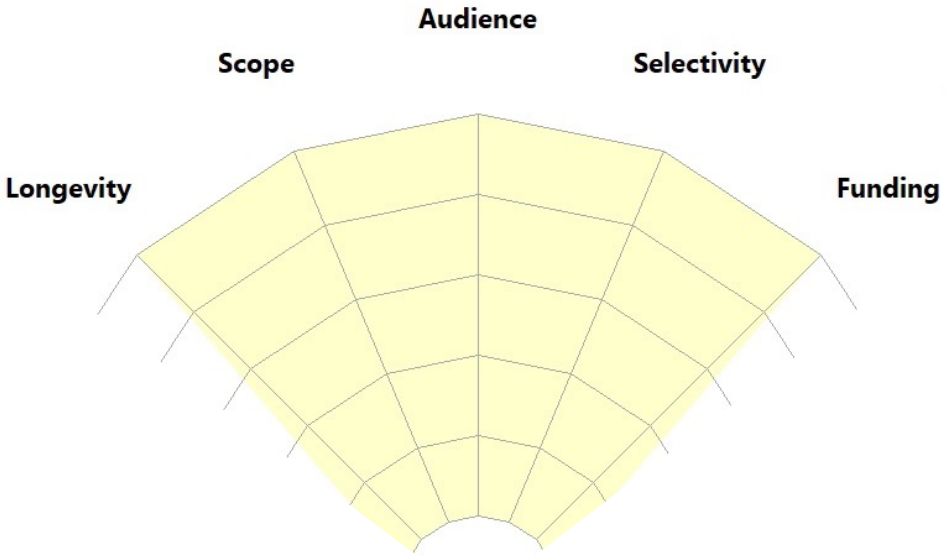
Longevity How long has the TPD program existed?

Scope What organizational units are involved in running the TPD program?

Audience Who does TPD participation target?

Selectivity Is TPD required in a way that reaches all TAs in the target audience (above)?

Funding Is funding for TPD staffing secured? And other essential support (space, supplies, etc.)?



REFORM FEATURES of TPD STRUCTURE

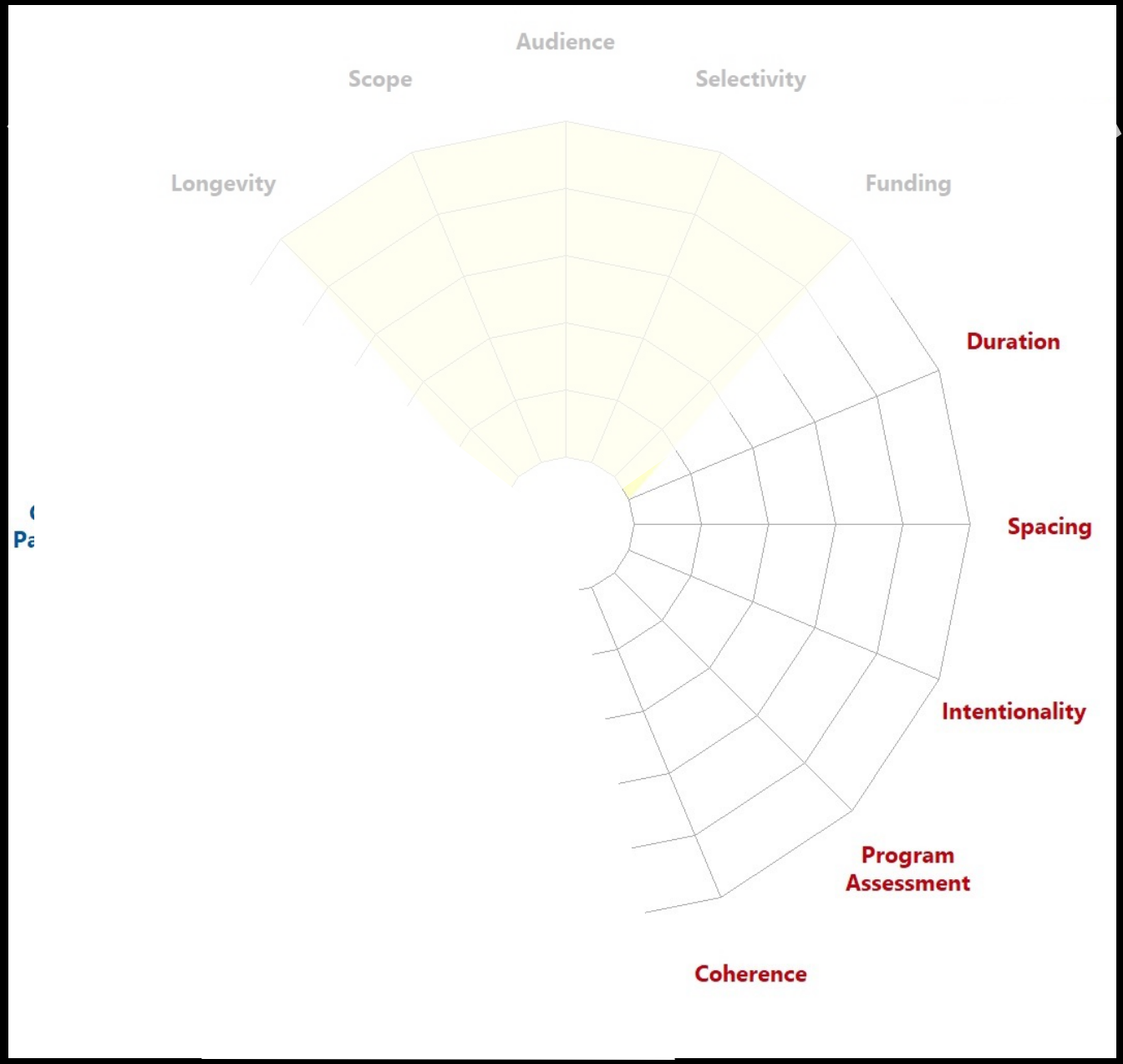
Duration How many total TPD hours do TAs receive as a result of the program?

Spacing How much time does the TPD span, and does that result in either "massed" or "spaced" TPD?

Intentionality Does the TPD have explicit outcomes? Is the curriculum aligned? Are experiences appropriately scaffolded for TAs to realistically reach stated outcomes?

Program Assessment Is there a formal plan for program assessment and improvement? Is it effective?

Coherence How does TPD fit with other relevant TPD initiatives (if they exist)?



CONTENT COVERED in TPD OFFERING

Teaching Dimensions What skills, knowledge, or attitudes are advanced by the program? Do TAs have an opportunity to apply and reflect upon the content?

Inclusive Teaching How does program content train TAs to use inclusive teaching strategies in their instruction? Do TAs have an opportunity to apply and reflect upon the content?

INSTRUCTIONAL PRACTICES of TPD

Active Learning Do the TPD training methods involve actively engaging TAs in their learning?

Modeling Inclusion How are inclusive teaching strategies used in the TPD training methods?

Collective Participation To what extent do TAs work together and produce collective products?

Community What is the nature of the TPD community? Does it both challenge and support TAs? Is there appropriate buy-in and shared purpose among TAs?

In our workshops, ECB Scholar Teams visualize their Focal TPD Program at three stages:

Pre-ECB

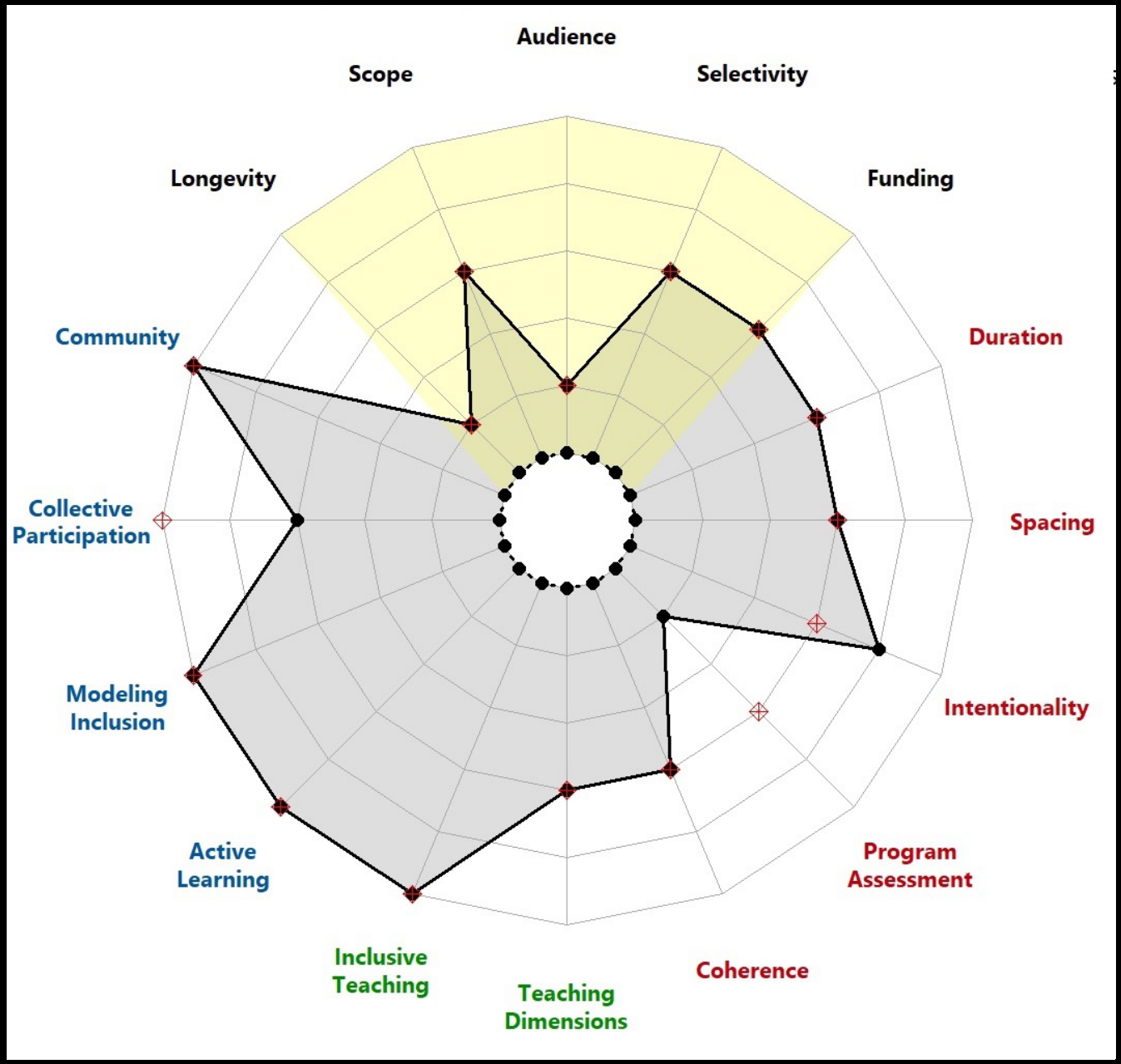
*The **current state** of the node*

TPD Goals

*Your **reform goals** for the year*

Post-ECB

*The actual **outcome** of reforms*



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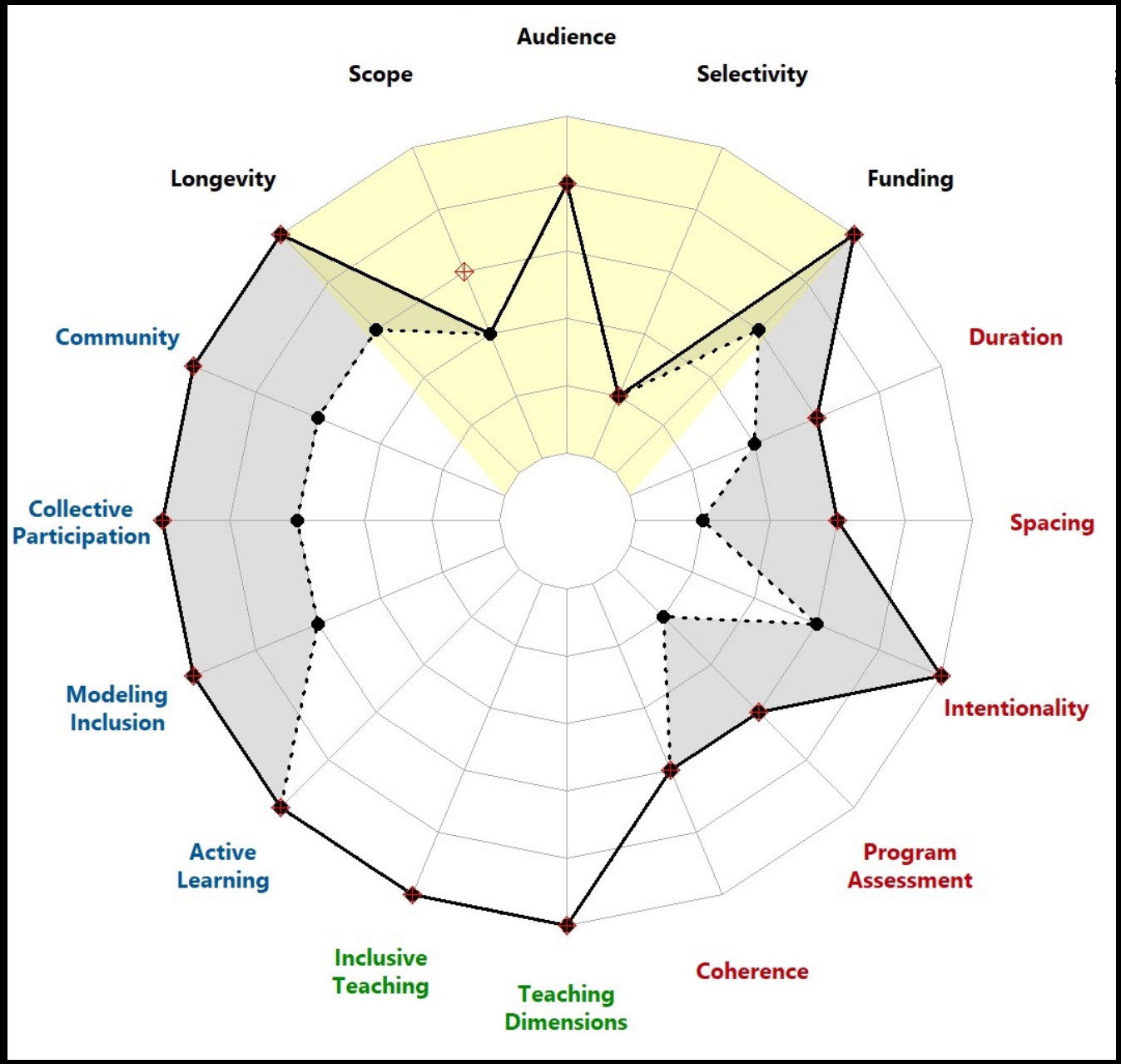


Worksheet: 10 minutes

3) Reflect on the Web- Ideas to Consider

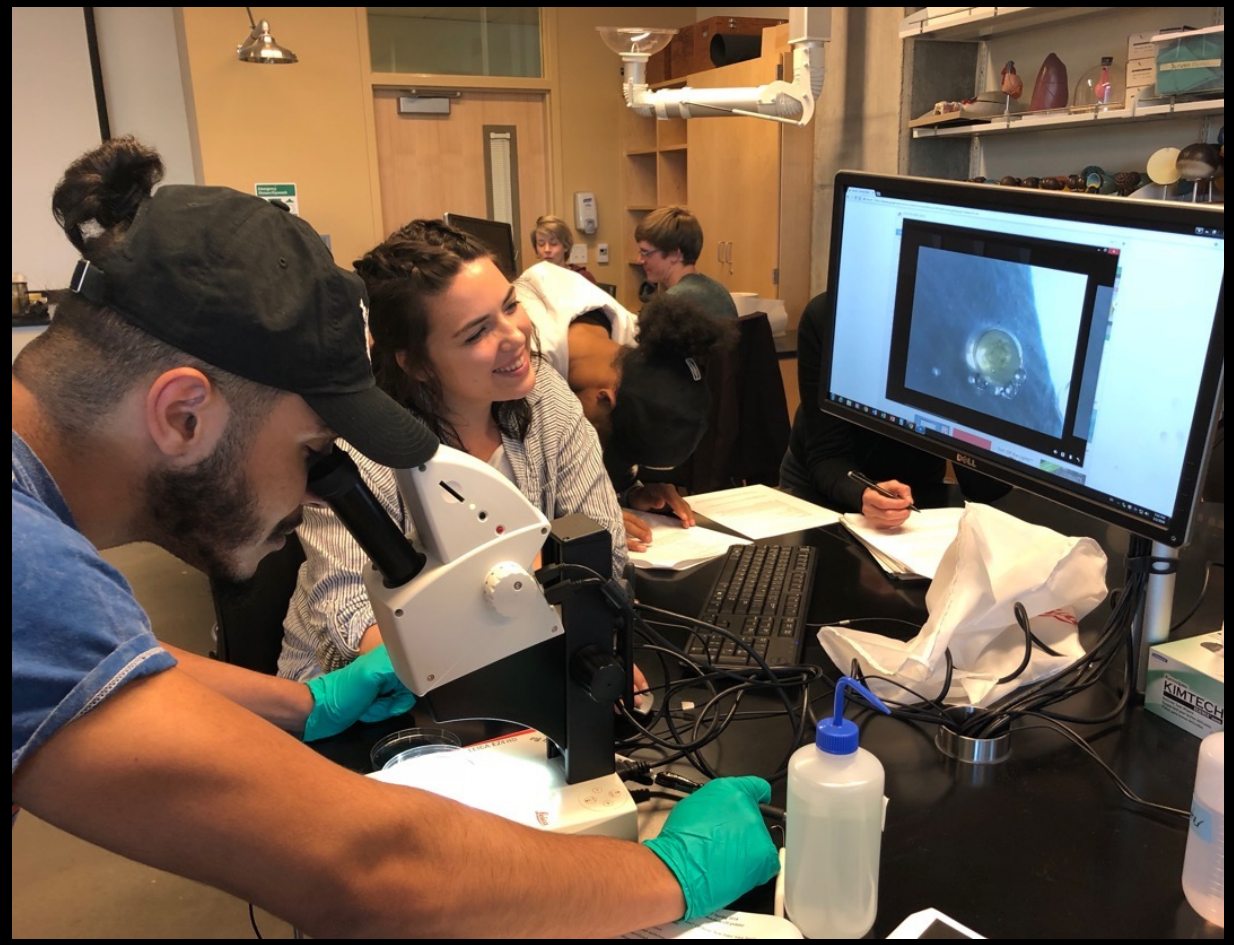
- Is there anything from the 'web' that you might want to think about further?
- Would a landscape mapping of GTA PD offerings be a useful activity at your institution?
- Is there a particular focal point (an offering, a course, an orientation) that you might want to further develop? Which units, centers, or departments could you potentially collaborate with?
- What would be your important levers and biggest barriers to expanding TA PD?
- Are there elements of the web that you had not considered being related to successful GTA PD programming?

Example: GTAs and High-Impact Practices (HIPs)

Course-based Undergraduate Research Experiences (CUREs)

5 essential elements:

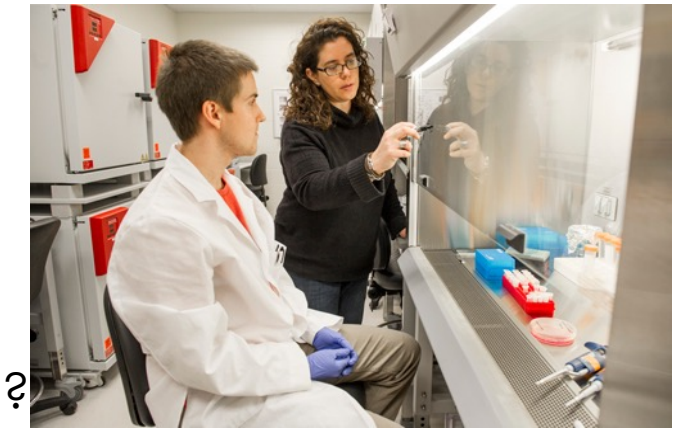
- Use of Scientific Practices
- Collaboration
- Iteration
- Broader Relevance
- Discovery



Auchincloss et al., 2014; Brownell & Kloser 2015

Apprentice-based research

- Limited space/resources
- Limited access
  - Who seeks these programs out?
  - Who is selected to participate?
  - What is the quality of the experience?



CUREs

Scaled-up research opportunities

All enrolled students participate

Reduces need for inside knowledge

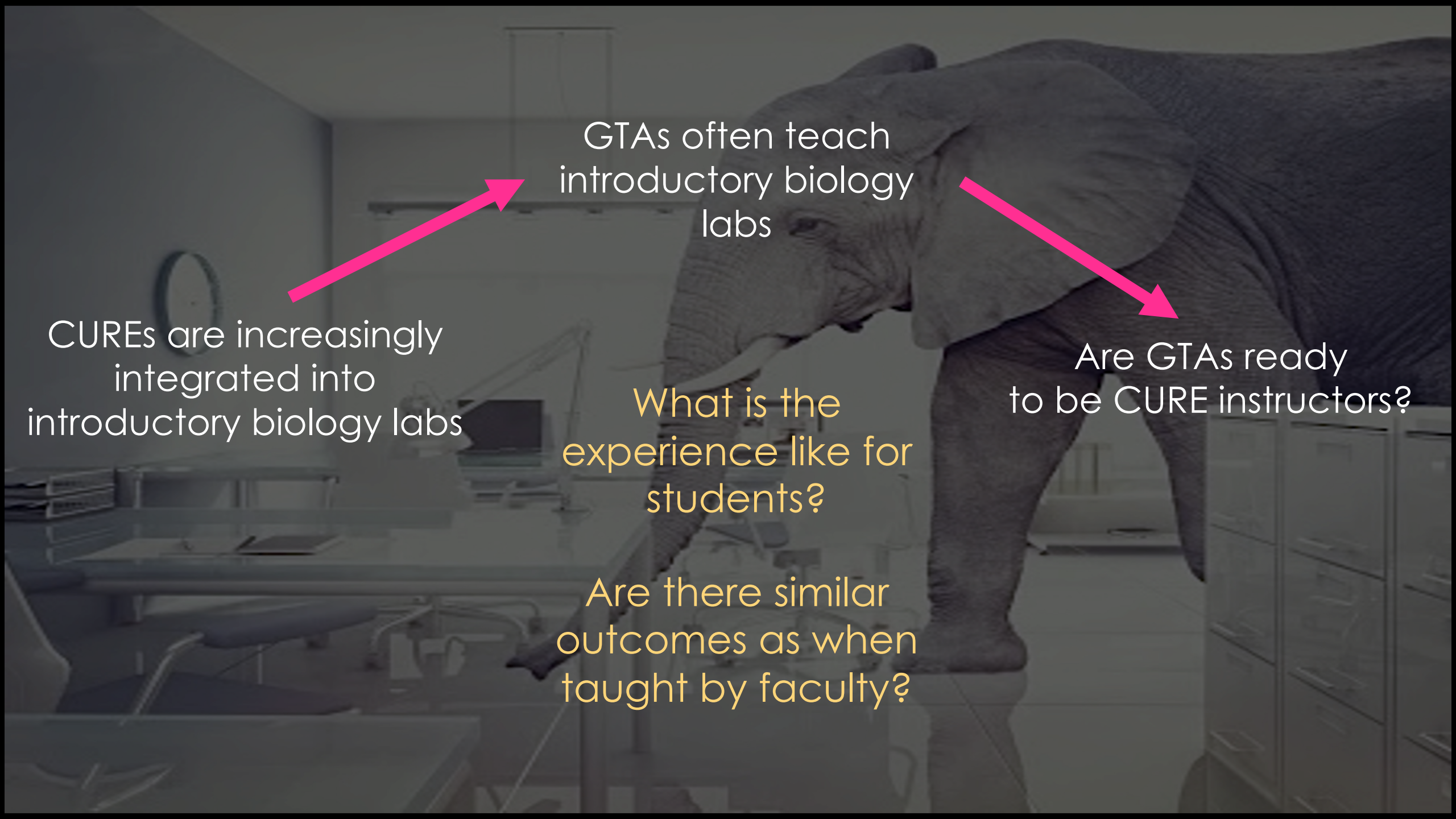
Bangera & Brownell, 2014; Auchincloss et al., 2014; Linn et al, 2015

Benefits of Undergraduate CURE Participation

Like apprentice-based research experiences:

scientific skills, self-efficacy, interest, motivation, retention and graduation in STEM degrees…

Auchincloss et al. 2014; Harrison et al., 2011; Indorf et al., 2019; Jordan et al., 2014; Reeves et al., 2018; Rodenbusch et al., 2016; Sundberg et al., 2015; Brownell et al. 2014


GTAs often teach introductory biology labs
CUREs are increasingly integrated into introductory biology labs
Are GTAs ready to be CURE instructors?
What is the experience like for students?
Are there similar outcomes as when taught by faculty?

CBE—Life Sciences Education, Vol. 20, No. 4 | General Essays and Articles

Enthusiastic but Inconsistent: Graduate Teaching Assistants' Perceptions of Their Role in the CURE Classroom

Emma C. Goodwin, Jessica R. Cary, and Erin E. Shortlidge
James Hewlett, Monitoring Editor

Published Online: 29 Oct 2021 | https://doi.org/10.1187/cbe.21-04-0106

JRST
Journal of Research in Science Teaching

RESEARCH ARTICLE | Full Access

Graduate teaching assistants impact student motivation and engagement in course-based undergraduate research experiences

Emma Crystal Goodwin, Jessica R. Cary, Vivian D. Phan, Hayley Therrien, Erin Elizabeth Shortlidge

First published: 01 February 2023 | https://doi.org/10.1002/tea.21848

Funding information: National Science Foundation

PLOS ONE

OPEN ACCESS PEER-REVIEWED
RESEARCH ARTICLE

Not the same CURE: Student experiences in course-based undergraduate research experiences vary by graduate teaching assistant

Emma C. Goodwin, Jessica R. Cary, Erin E. Shortlidge

Published: September 27, 2022 • https://doi.org/10.1371/journal.pone.0275313

What did we learn?

- GTAs can be a great way to increase institutional use of learner-centered, high impact strategies
- GTAs can learn and practice mentoring, teaching, and research skills
- We need to be mindful of how this happens and not ignore the reality of our systems
  - →our most at-risk students may remain this way – even when learner-centered strategies are used

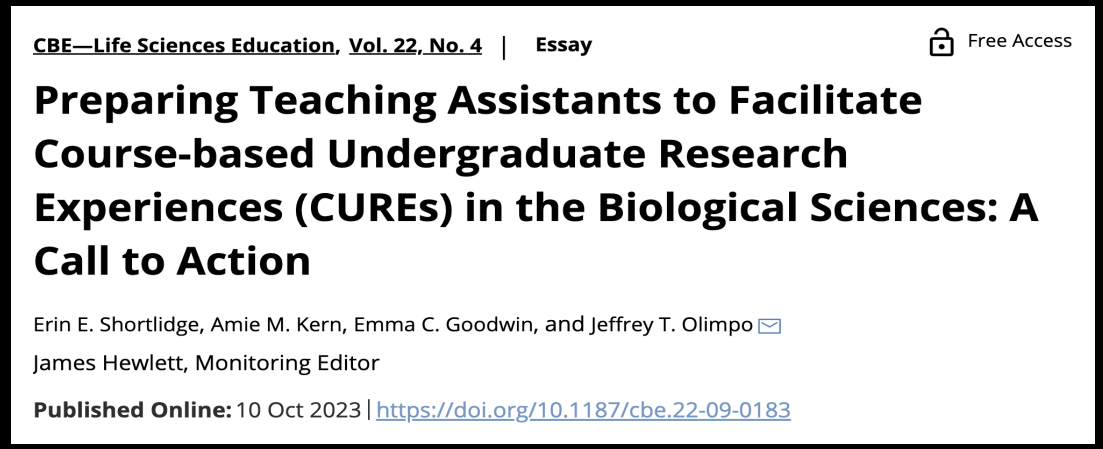
We must help GTAs via adequate preparation and intentional decision-making

Professional Development for CURE GTAs

CURE TA PD should be reflective of what GTAs need to teach CUREs

We propose that this entails focusing in on three elements:

- Research and Teaching Acumen
- Effective Mentoring
- Knowledge of What Makes a CURE Unique



CBE—Life Sciences Education, Vol. 22, No. 4 | Essay

Free Access

Preparing Teaching Assistants to Facilitate Course-based Undergraduate Research Experiences (CUREs) in the Biological Sciences: A Call to Action

Erin E. Shortlidge, Amie M. Kern, Emma C. Goodwin, and Jeffrey T. Olimpo

James Hewlett, Monitoring Editor

Published Online: 10 Oct 2023 | https://doi.org/10.1187/cbe.22-09-0183

Moving Forward – Professional Development for CURE GTAs

CURE TA PD should be reflective
of what TAs need to teach CUREs

CURE TA PD to Enhance Scientific Teaching, Research, and Mentoring Capacity (**CURE TAPESTRy**) initiative
(NSF- DBI 2217147)

Worksheet:

4) What are your goals? Ideas to Consider:

- What specific outcomes would you like to see from improved GTA training?
- What does success for you look like in 1 year? In 3 years?
- Would you consider a task force or intentional cross-campus effort better understand the current landscape of GTA training?
- What leadership roles or policies could drive GTA training as a valued priority?
- How might you measure impact and success?

Share one of your goals here

Join at

slido.com

#3273 142

Portland State
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Creating Inclusive Learning and Mentoring Environments: Professional Development in Pedagogy

Council of Graduate Schools
Summer Workshop and New Deans Institute, Portland, OR
July 15, 2025

Questions? Comments?

Thank you!

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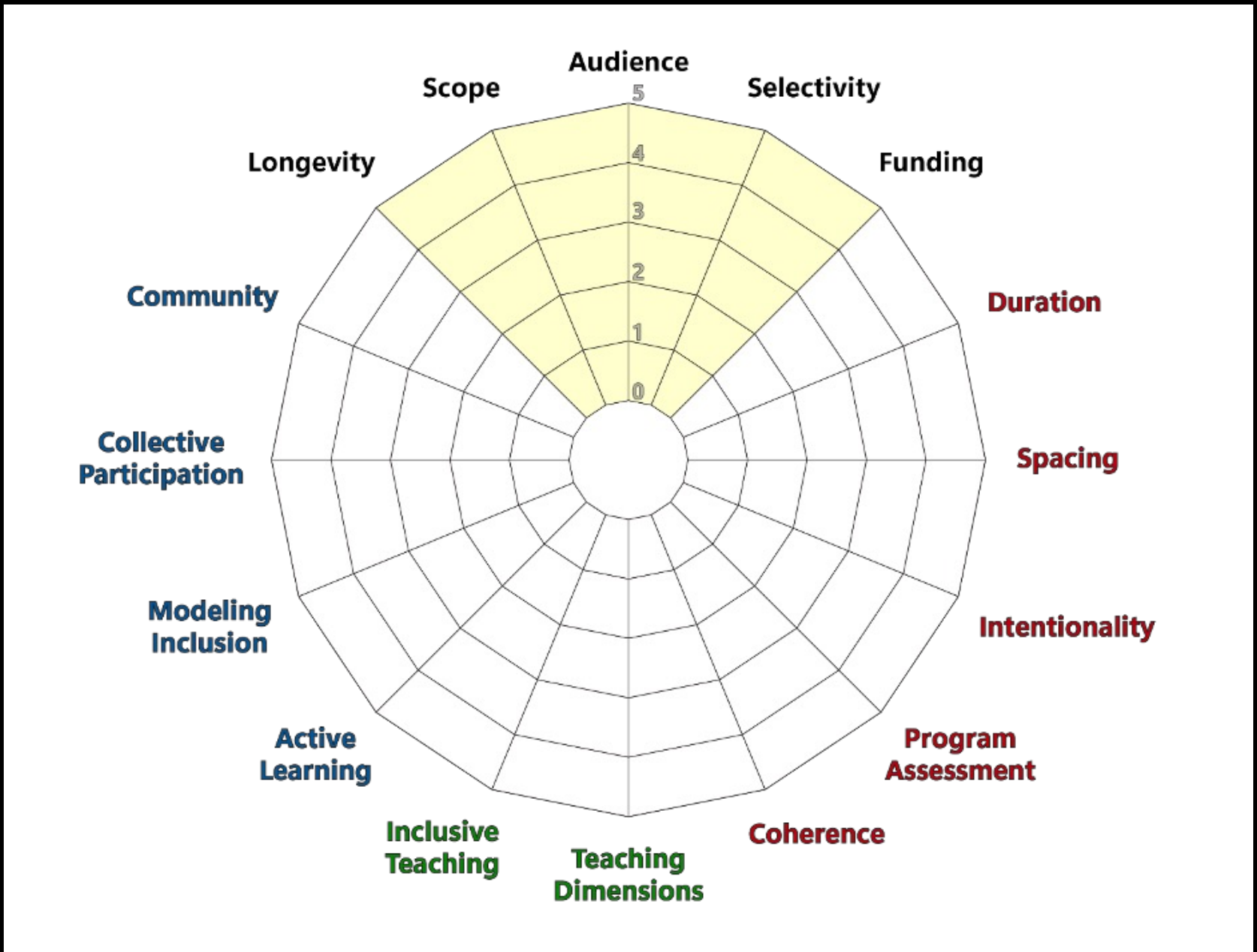
Audience
Selectivity
Funding
Duration
Spacing
Intentionality
Program Assessment
Coherence
Teaching Dimensions
Inclusive Teaching
Active Learning
Modeling Inclusion
Collective Participation
Community
Longevity
Scope
5
4
3
2
1
0

Feature	Level 1	Level 2	Level 3	Level 4	Level 5
CONTEXTUAL FEATURES of TPD STRUCTURE					
Longevity How long has the TPD program existed?	The TPD program exists but it is brand new (<1 year)	The TPD program is quite new (1-2 years)	The TPD program is relatively new (2-3 years)	The TPD program is relatively well established (3-4 years)	The TPD program is well established (5+ years)
Scope What organizational units are involved in running the TPD program?	The program is run by a single individual without any higher-level involvement	The program is run by a few individuals without higher-level involvement	Even if one or a few individuals ultimately run the program, they do so with support at the department level	The program is offered by and coordinated at the level of multiple departments (*e.g.*, at the "college" level)	The program is offered by and coordinated at the level of the whole institution
Audience Who does TPD participation target?	Participants include TAs from a single course only	TAs may come from multiple courses, but not the entire department	TAs come from an entire department, regardless of the course they teach	TAs come from multiple courses spanning multiple departments	TAs come from multiple courses spanning the entire institution
Selectivity Is TPD required in a way that reaches all TAs in the target audience (above)?	A small portion of the relevant TA population receives TPD in practice (*e.g.*, it is optional for all, resulting in partial participation)	Selectivity falls between Level One and Level Three	Participation is broad but it does not provide TPD for the entire relevant TA population in practice (*e.g.*, it is required for some but optional for others, resulting in partial participation)	Selectivity falls between Level Three and Level Five	Program provides TPD for the entire relevant TA population in practice (*e.g.*, it is required for all GTAs in the listed "Audience")
Funding Is funding for TPD staffing secured? And other essential support (space, supplies, etc.)?	Program staffing (and other essential support) is not currently secured	Funding falls between Level One and Level Three	Program staffing (and other essential support) is secured partially and/or for the short-term only	Funding falls between Level Three and Level Five	Long-term program staffing (and other essential support) is stable

Feature	Level 1	Level 2	Level 3	Level 4	Level 5
REFORM-ORIENTED FEATURES of TPD STRUCTURE					
Duration How many total TPD hours do TAs receive as a result of the program?	Low (1-3)	Low-Moderate (4-9)	Moderate (10-19)	High-Moderate (20-29)	High (30+)
Spacing How much time does the TPD span, and does that result in either "massed" or "spaced" TPD?	The program duration is limited to a narrow span of time in the relevant TA training window, resulting in "massed" TPD practice (*e.g.,* a pre-semester orientation)	Spacing falls between Level One and Level Three	The program covers a moderate or wide span of time in the relevant TA training window, but there is only semi-regular engagement during that time frame, resulting in intermittent TPD practice (*e.g.,* a few orientation-like sessions throughout the year)	Spacing falls between Level Three and Level Five	TPD efforts are spread regularly over a moderate or wide span of time with consistent engagement in the relevant TA training window, resulting in ongoing "spaced" TPD practice (*e.g.,* a weekly seminar or course throughout the semester/year)
Intentionality Does the TPD have explicit outcomes? Is the curriculum aligned? Are experiences appropriately scaffolded for TAs to realistically reach stated outcomes?	TPD activities exist, but they are entirely informal: there are no explicit outcomes of the TPD experience (e.g., peer review of teaching without any stated outcomes or guidance for participants)	TPD activities have explicit outcomes, but intermediate structure results in an experience that is less than fully intentional; the TPD needs to improve all three aspects (outcomes, alignment, and scaffolding) in order to provide the most impactful experience for TAs	TPD activities have explicit outcomes, but intermediate structure results in an experience that is less than fully intentional; the TPD needs to improve two aspects (outcomes, alignment, or scaffolding) in order to provide the most impactful experience for TAs	TPD activities have explicit outcomes, but intermediate structure results in an experience that is less than fully intentional; the TPD needs to improve one aspect (outcomes, alignment, or scaffolding) in order to provide the most impactful experience for TAs	High structure results in a highly intentional TPD that has clear and explicit learning outcomes, the curriculum is aligned to those outcomes, and TPD experiences are scaffolded in such a way that invested participants will be able to attain the stated outcomes.

Feature	Level 1	Level 2	Level 3	Level 4	Level 5
REFORM-ORIENTED FEATURES of TPD STRUCTURE (continued)					
Program Assessment Is there a formal plan for program assessment and improvement? Is it effective?	No assessment is done on the TPD program and no plan is in place to assess the program in the future	Program Assessment falls between Level One and Level Three	A plan to assess the TPD program is in place, but it could be improved to provide more meaningful information to use for program improvement; it may need more measures of GTA effectiveness as a result of the program, or more direct and reliable measures (*e.g.,* a program collects GTA satisfaction surveys, or relies on student evaluation data only, etc.)	Program Assessment falls between Level Three and Level Five	A formal assessment plan is in place that provides meaningful data for program improvement; it includes at least some direct measures of GTA effectiveness as a result of the program
Coherence How does TPD fit with other relevant TPD initiatives (if they exist)?	TPD efforts are isolated (no other TPD initiatives or resources can be identified)	Coherence falls between Level One and Level Three	Other relevant TPD initiatives exist at the institution, but the focal TPD efforts are not integrated with them (integration might include sharing resources, strategically developing or connecting curriculum, transferring university credits between programs, etc.)	Coherence falls between Level Three and Level Five	TPD efforts are strategically integrated with other institutional TPD initiatives and resources (based on respective needs of the initiatives)

Feature	Level 1	Level 2	Level 3	Level 4	Level 5
CONTENT COVERED in the TPD PROGRAM					
Teaching Dimensions What skills, knowledge, or attitudes are advanced by the program? Do TAs have an opportunity to apply and reflect upon the content?	Program content does not extend beyond the "basics" consisting of logistics, policies and procedures, or disciplinary content necessary for TAs to instruct their course (*i.e.,* the TPD is essentially "course prep" only)	Program content extends beyond the basics (as in Level One) but includes only <u>one</u> of these additional teaching dimensions: evidence-based instructional practices, learning theory, TA beliefs about teaching, and emotional support for TAs as teachers and individuals	Program content extends beyond the basics (as in Level One) but includes only <u>two or three</u> of these additional teaching dimensions: evidence-based instructional practices, learning theory, TA beliefs about teaching, and emotional support for TAs as teachers and individuals	Program content extends beyond the basics (as in Level One) by spanning <u>all four</u> of these additional teaching dimensions: evidence-based instructional practices, learning theory, TA beliefs about teaching, and emotional support for TAs as teachers and individuals	Program content provides a holistic foundation that spans all four listed teaching dimensions (evidence-based instructional practices, learning theory, TA beliefs about teaching, and emotional support for TAs as teachers and individuals); <u>in addition</u>, the TPD provides an opportunity for TAs to practice and reflect upon the skills and knowledge gained in TPD
Inclusive Teaching How does program content train TAs to use inclusive teaching strategies in their instruction? Do TAs have an opportunity to apply and reflect upon the content?	There is no explicit focus on inclusive teaching strategies in TPD content	Inclusive Teaching falls between Level One and Level Three	There is some focus on inclusive teaching strategies in the TPD content, but the coverage could be improved in order to provide TAs with more (or more practical) skills	Inclusive Teaching falls between Level Three and Level Five	A strong and regular emphasis on inclusive teaching practices results in TAs gaining several practical strategies for their own teaching

Feature	Level 1	Level 2	Level 3	Level 4	Level 5
INSTRUCTIONAL PRACTICES of the TPD PROGRAM					
Active Learning Do the TPD training methods involve actively engaging TAs in their learning?	TPD training methods are limited to didactic and teacher-centered methods	Active Learning falls between Level One and Level Three	TPD training methods involve occasional active learning, but they could be improved to be more TA-centered or better role model evidence-based practices in college teaching	Active Learning falls between Level Three and Level Five	TPD training methods are active and TA-centered on a regular basis; they role model evidence-based practices in college teaching
Modeling Inclusion How are inclusive teaching strategies used in the TPD training methods?	There is a significant need to improve the way that inclusive teaching practices are practiced and modeled in the TPD training program; examples of specific strategies may be hard to identify (*i.e.*, rare), or some methods may run counter to evidence-based practices in inclusive instruction	Modeling Inclusion falls between Level One and Level Three	Inclusive teaching practices are sometimes modeled for TAs, but key aspects require improvement: specific strategies may need to be employed more consistently, there may be evident challenges to inclusion which could be solved by known strategies, and/or the delivery of some methods may need to be refined in order to be more effective (for the TPD itself, and as a role model for TAs in their own teaching)	Modeling Inclusion falls between Level Three and Level Five	While there is always room for improvement, inclusive teaching practices are appropriately role modeled in the TPD training methods: numerous examples of specific strategies are regularly identified and they are consistent with evidence-based practices in inclusive instruction

Feature	Level 1	Level 2	Level 3	Level 4	Level 5
INSTRUCTIONAL PRACTICES of TPD (continued)					
Collective Participation To what extent do TAs work together and produce collective products?	TAs engage in TPD training individually and it requires little peer interaction	Collective Participation falls between Level One and Level Three	TPD involves occasional collaboration, but collective development of teaching skills, knowledge, and attitudes could be improved: the TPD may benefit from more frequent or extensive peer interaction, more effective facilitation, and/or more collaboration across different domains (skills, knowledge, beliefs)	Collective Participation falls between Level Three and Level Five	TPD involves frequent and effective collaboration; TAs regularly work together to develop their teaching skills, knowledge, and attitudes
Community What is the nature of the TPD community? Does it both challenge and support TAs? Is there appropriate buy-in and shared purpose among TAs?	There is a significant need to improve the TPD community: there may be little apparent support for TAs, it may inappropriately challenge their growth as teachers (too much or too little), there may be little TA buy-in (more than ~50% of TAs resistant to participation), and/or there may be little sense of shared purpose among TAs	Community falls between Level One and Level Three	The program makes an effort to establish a healthy and welcoming learning community, but there is significant room to improve: there may be a need to improve the balance of supporting and challenging TAs in their growth as teachers, recurrent issues with TA buy-in (between ~10-50% of TAs resistant to participation), and/or a lack of shared purpose among TAs	Community falls between Level Three and Level Five	As determined by assessments, the program establishes a welcoming and supportive environment while appropriately challenging TAs to continue growing as teachers; there is widespread TA buy-in (less than ~10% of TAs resistant to participation) and a sense of shared purpose among TAs