

Are Surveys Serving Your **ATE** Project? Find Out!

Sondra LoRe, PhD
STEM Program, Evaluation, Assessment, & Research (SPEAR)



STEM · Program Evaluation · Assessment · Research

Sondra's journey to Program Evaluation

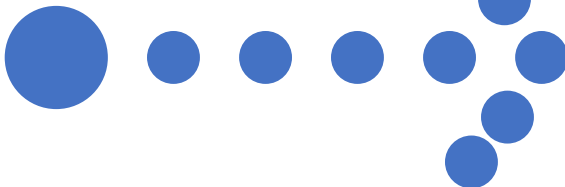
K-12 Teacher & School Principal



Higher Education
Educator & Center
Director



Educational
Researcher



STEM · Program Evaluation · Assessment · Research

Adjunct Teaching



Quantitative Literacy



Science teaching
methods

SPEAR Partners (NSF & NIH)

NSF CENTER (1)



DRK-12 (1)

NIH SEPA (1)



NRT (5)



University of Nevada, Reno

RCN (2)



IntBIO(1)



ATE (2) + S-STEM (1)



IUSE (3)



DRK-12 (1)



HSI Pilot (1)



REU (1)



NOYCE (1)



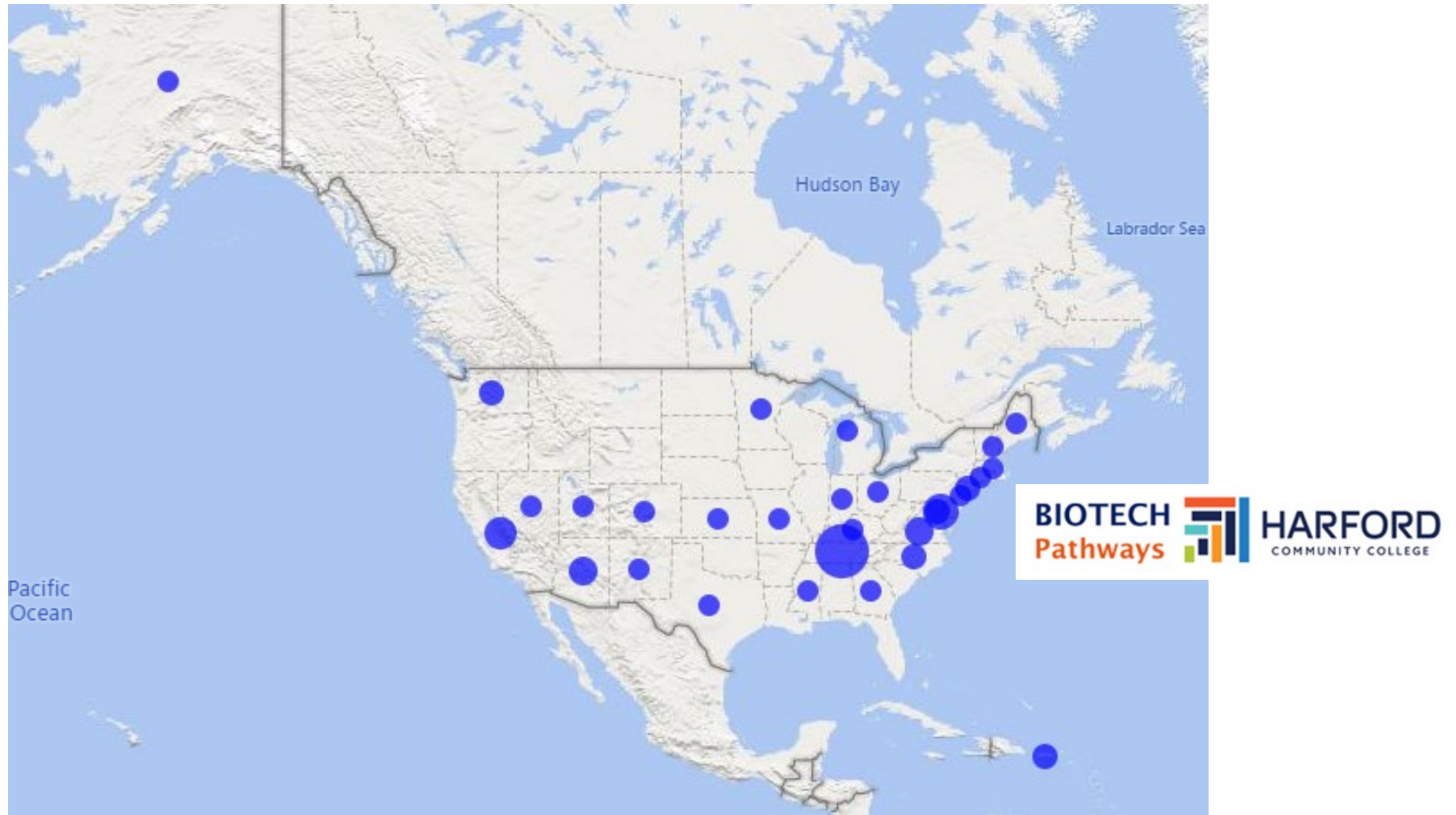
ITYC (1)



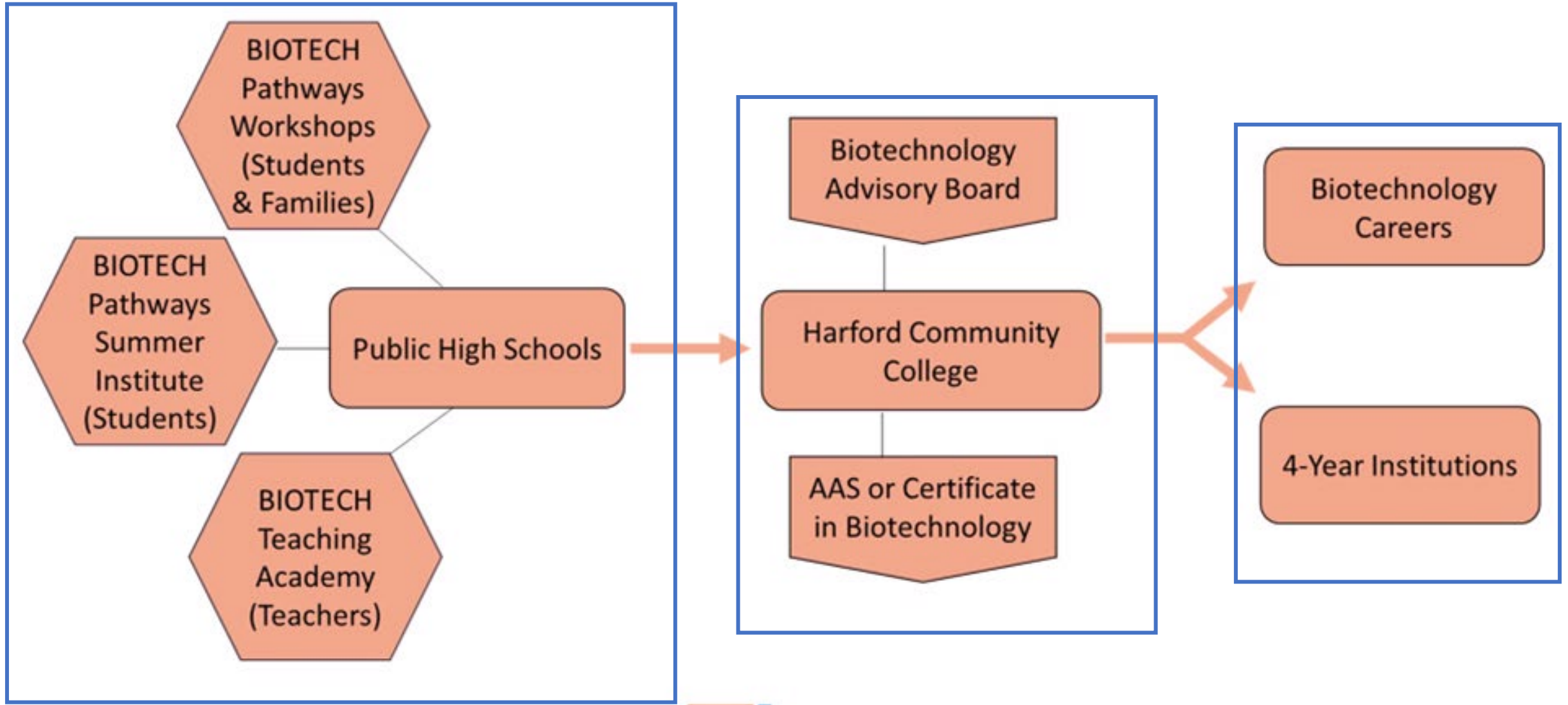
SPEAR Partners (Foundation, State, and additional NSF funding)



Where our evaluation projects are located

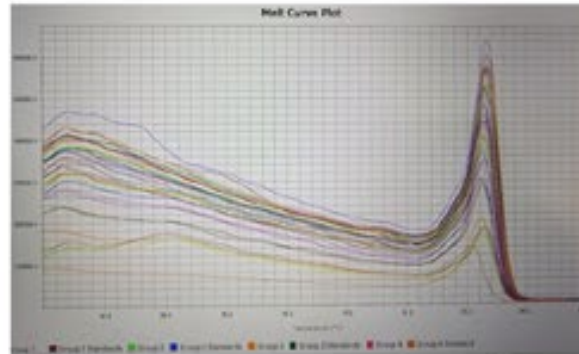
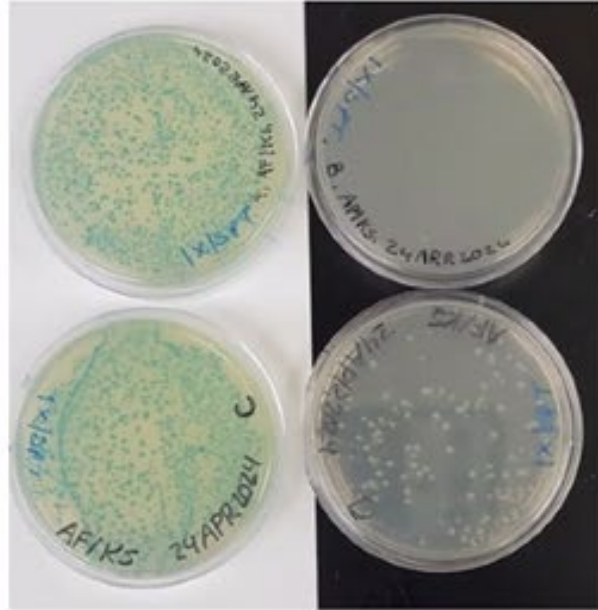


NSF ATE BIOTECH Pathways

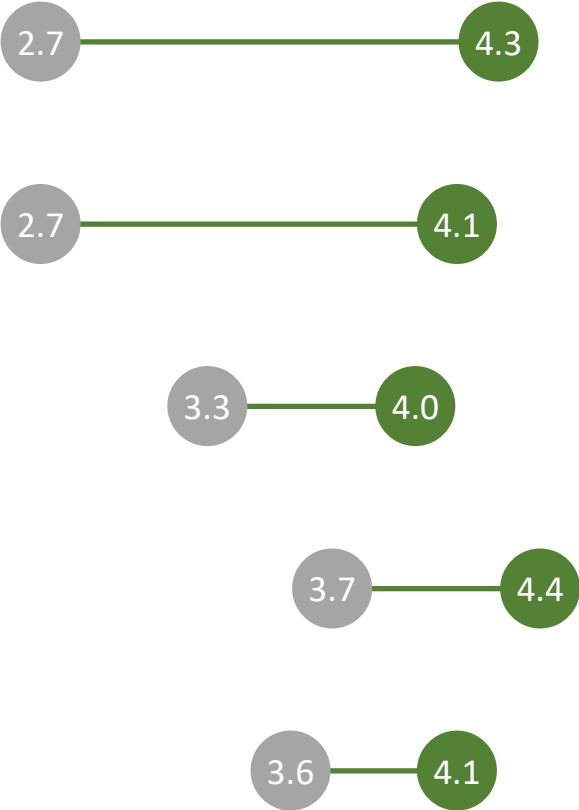


NSF ATE BIOTECH Pathways

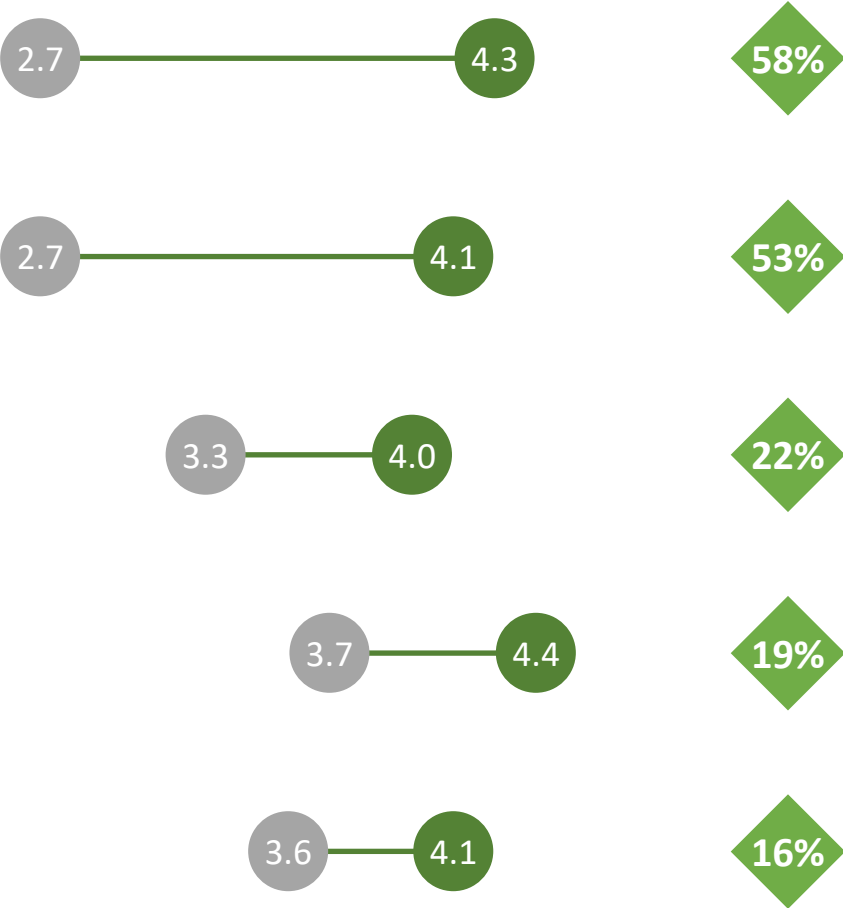
Course Survey- Biology 214 Molecular Techniques



Survey Reporting

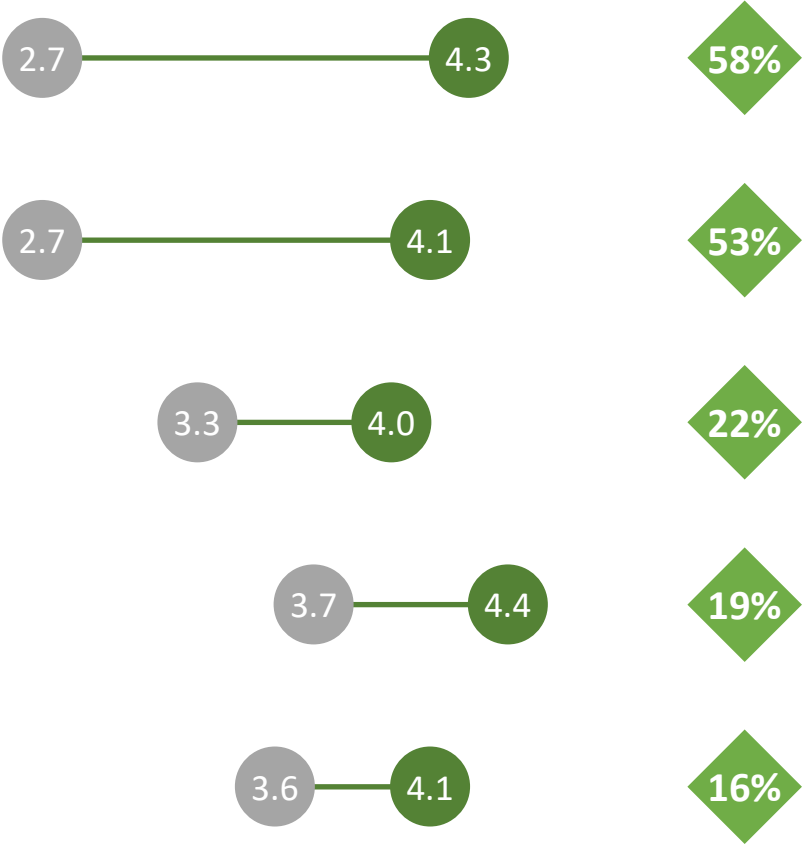


Survey Reporting



Survey Reporting

● Before ● After ◆ %Growth



Scale: Not knowledgeable... Slightly knowledgeable (2) Moderately knowledgeable (3) Very knowledgeable (4) Extremely knowledgeable (5)

Survey Reporting

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Understanding of the responsible and ethical conduct of research.



Developing and conducting a research experiment and analyzing the data.



Communicating the results of scientific research in written form.



Knowledge of synthetic biology concepts and practices.



Understanding of the theory and methods of molecular techniques used in the study of nucleic acids.



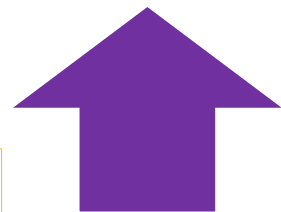
Scale: Not knowledgeable at all (1) Slightly knowledgeable (2) Moderately knowledgeable (3) Very knowledgeable (4) Extremely knowledgeable (5)

Pre & Post Surveys (2)

Before Intervention &
After Intervention

Experimental or Clinical
Methodology

- Social Constructs
- Sense of Belonging
- Experience & Understanding



**Retrospective
Overinflate**



**Pre & Post
Underinflate**

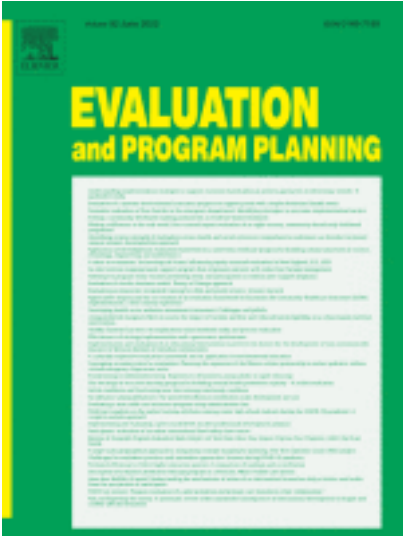
Retrospective Survey (1)

Reflective- After Intervention

Retrospective Pretest (RPT)
Methodology

- Shift Response
“Boomerang Effect”

What retrospective survey design is best?



Melanie Hwalek

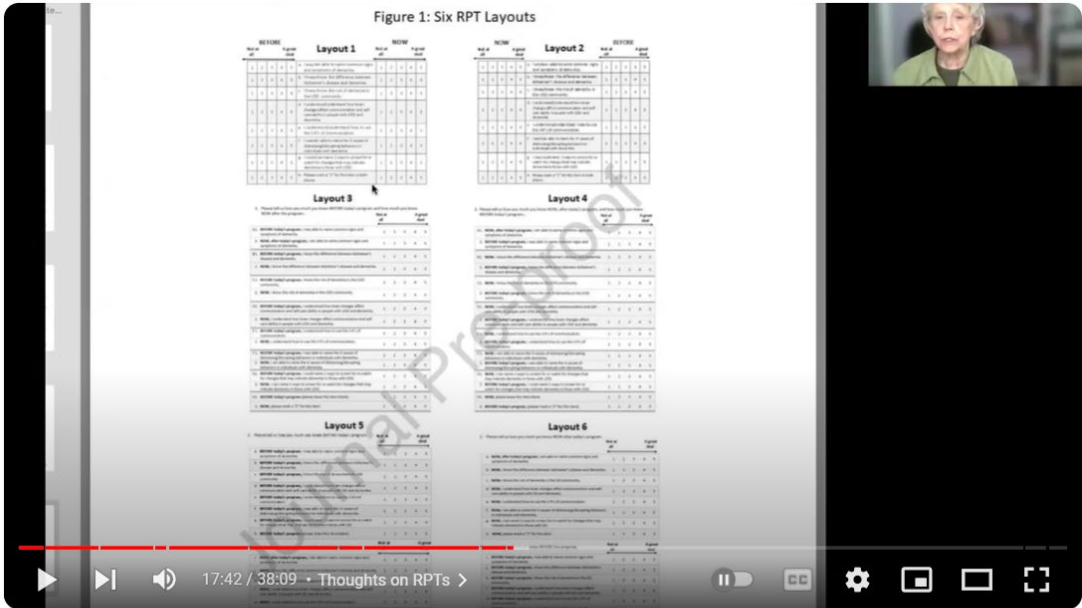
Article:
Designing a questionnaire with retrospective pre-post items:
Format matters
Melanie Hwalek, Kate Piece, Victoria Straub



James Pann

@jamesmpann • 234 subscribers • 24 videos
Research and program evaluation videos perta
evalnetwork.com

Subscribed



The Power of Retrospective Pretests to Address Common Survey Research Challenges

James Pann
234 subscribers
Subscribed

What retrospective survey design is best?

A

BEFORE						NOW				
A great deal						A great deal				
Not at All						Not at All				
1	2	3	4	5	I can reduce complex jargon into simpler topics appropriate for high school students.	1	2	3	4	5
1	2	3	4	5	I can talk to high school students in an engaging way about science.	1	2	3	4	5

B

Please tell us how much you knew BEFORE attending these workshops and how much you know NOW after finishing the workshops.						A great deal				
						Not at All				
1a.) BEFORE these workshops I could reduce complex jargon into simpler topics appropriate for high school students.						1	2	3	4	5
1 b.) NOW after completing these workshop, I can reduce complex jargon into simpler topics appropriate for high school students.						1	2	3	4	5
2a.) BEFORE these workshops I could talk to high school students in an engaging way about science.						1	2	3	4	5
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Retrospective Survey (Sondra's favorite format)

Thinking about your MemSTEMM Ambassador training experience so far, please mark your **level of agreement** to the statements below **BEFORE** participating in the program and **AFTER** (currently).

	BEFORE	AFTER (currently)
I am confident presenting an interactive scientific talk to high school students.	Strongly agree	
I can talk to high school students in an engaging way about science.	Strongly agree Somewhat agree Neither agree nor disagree Somewhat disagree Strongly disagree	
I can reduce complex scientific jargon into simpler topics appropriate for high school students.		
I can tell my story through images using appropriate colors, tones, and layouts.		

12:29

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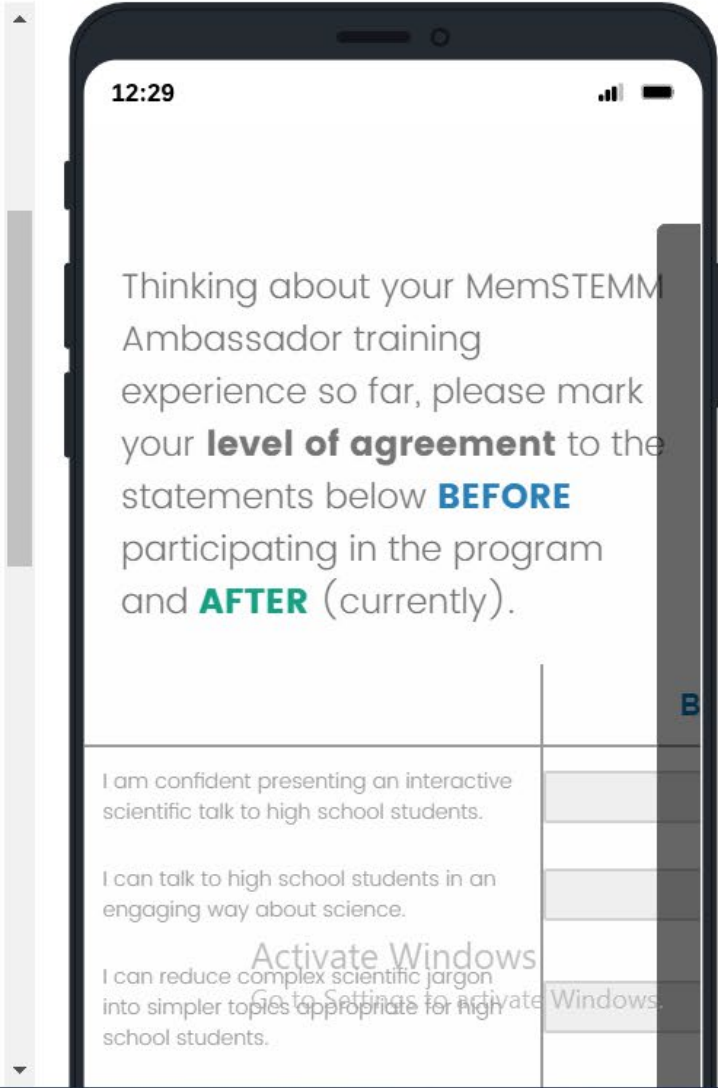
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Activate Windows
Go to Settings to activate Windows.

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spearconsultants2@gmail.com



<https://bit.ly/SPEAR-ATE>