

# Imagining Possibilities: LGBTQ-Inclusion and Acceptance in K-12 STEM



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# Plan

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## 35 minutes

- ▶ Writing & discussion
- ▶ LGBTQ learning realities
- ▶ LGBTQ-inclusive STEM learning possibilities

## 40 minutes

- ▶ Breakouts
  - ▶ oSTEM teaching as a career
  - ▶ oSTEM outreach to K-12
  - ▶ oSTEM research



# Possibilities



# Free Write (5 min on your own)

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- ▶ Imagine an LGBTQ-inclusive and accepting STEM learning context.
  - ▶ What would it look like?
  - ▶ What would happen?
  - ▶ What would it feel like?



<http://missriki.com/wp-content/uploads/2012/10/write-1.jpg>



## Small Group Sharing (10 minutes)

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- ▶ What would an LGBTQ-inclusive and accepting STEM learning context be like?
- ▶ What themes did your possibilities have in common?
- ▶ What would make these experiences LGBTQ inclusive and accepting?
- ▶ What supports or changes are needed to make these possibilities realities?



<http://www.gannett-cdn.com/-mm-/f9d2795695be1bc3e057f22732dea7b69d39160a/c=27-0-4025-3009&r=x404&c=534x401/local-/media/USATODAY/test/2013/09/12/1379014333000-AP-SPAIN-GAY-PRIDE-56924697.JPG>



# Large Group Sharing

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- ▶ What does inclusion and acceptance in K-12 STEM learning look like?
- ▶ How do we manifest LGBTQ-inclusive and accepting STEM learning experiences for present STEM learners?



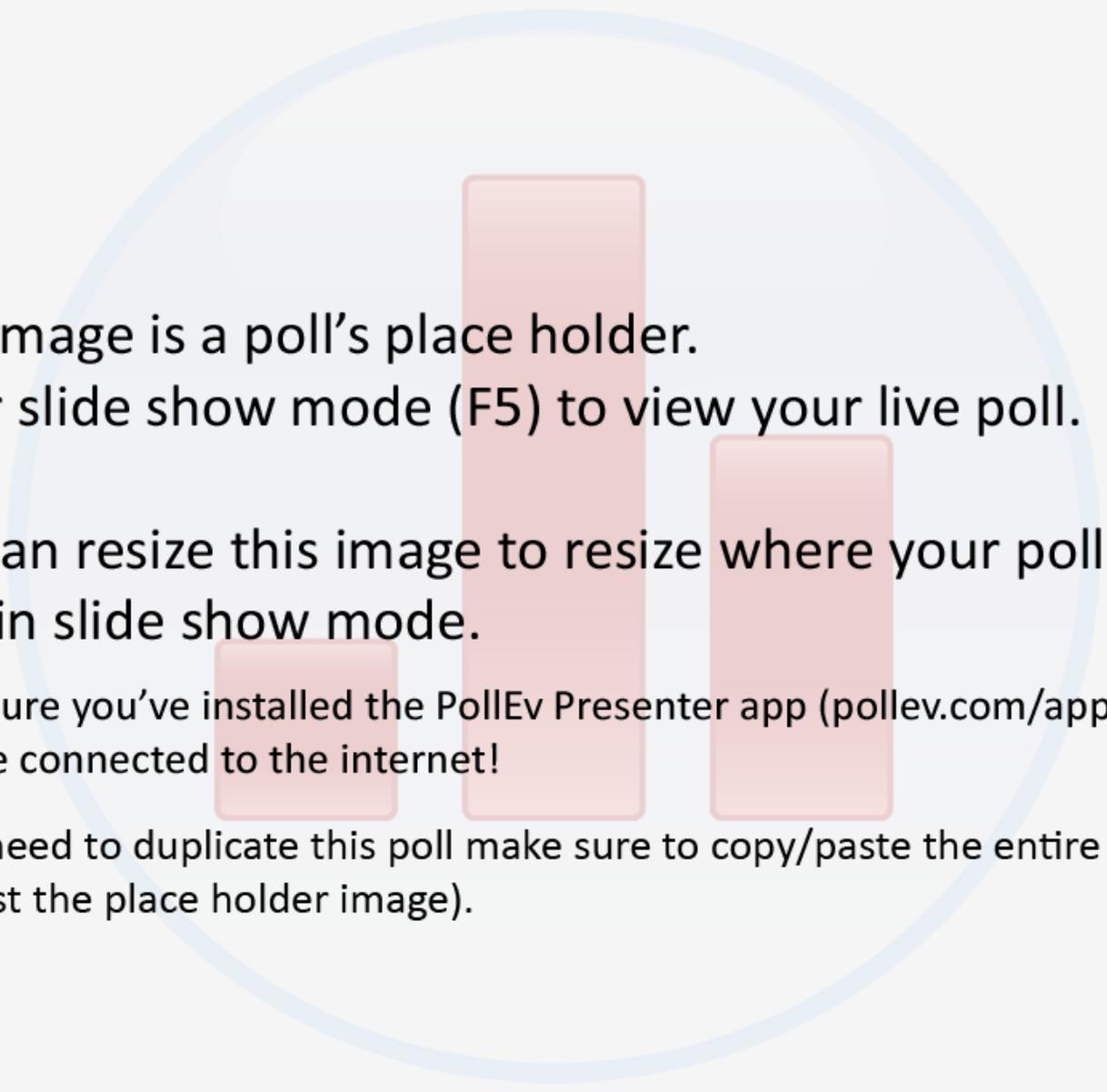
# oSTEM Participant Poll Responses

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sexual orientation and gender identity included in antibullying ed.  
Students feel confident that they can come out and still get a job in the stem fields  
parental education and assistance in reinforcing inclusive behaviors  
Having more gay teachers! Yay! :D  
Lgbtq friendly stickers/pins/anything (can be small) to let students know professor is an ally  
Teachers educate students about what being LGBT is and what being LGBT means  
Teachers not being afraid to be themselves in the workplace and being open to their colleagues and students.  
teaching difference between sex and gender.  
a safe space to talk about these issues  
gender neutral bathrooms in middle school and elementary school  
Toning down traditional gender roles.  
acknowledging spectrums of gender and sexuality, not binary.  
role models people can identify with regardless of gender identity  
Teachers reprimand students using homophobic and/or transphobic language  
Inclusion of LGBT+ information in sexual education classes  
actively reaching out, not only being accepting but directly giving opportunities for inclusion  
increased mentor capacity in a variety of fields  
teacher education on LGBT teacher coming out to class when asked about spouse  
Educators trained in addressing lgbt issues and understanding lgbt youth  
lgbt+ inclusive curriculum  
awesome great thing

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▶ Data from unedited poll conducted 10/24/2013



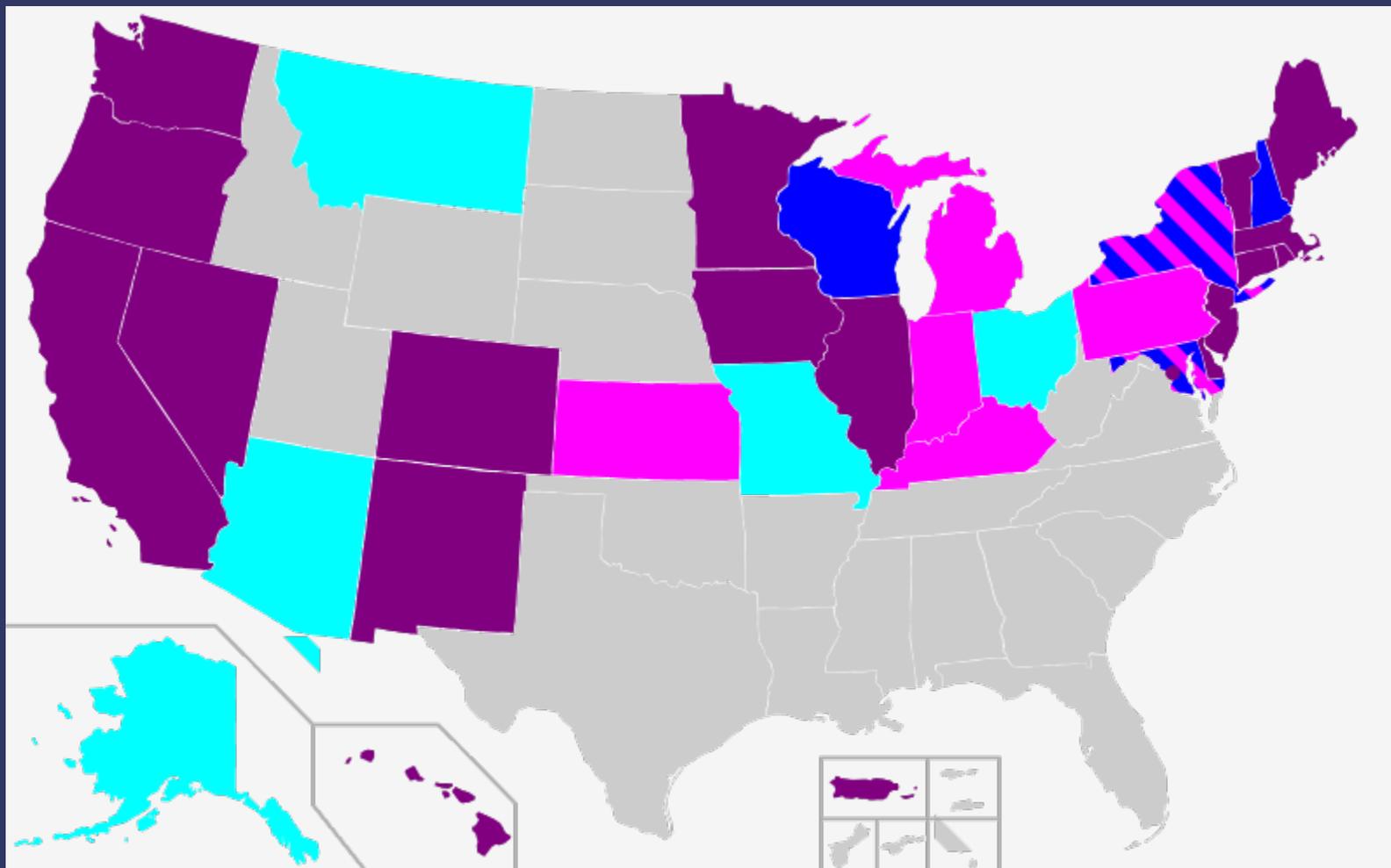
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## Realities



[http://en.wikipedia.org/wiki/File:Samesex\\_marriage\\_in\\_USA.svg](http://en.wikipedia.org/wiki/File:Samesex_marriage_in_USA.svg)

[http://en.wikipedia.org/wiki/File:LGBT\\_employment\\_discrimination\\_law\\_in\\_the\\_United\\_States.svg](http://en.wikipedia.org/wiki/File:LGBT_employment_discrimination_law_in_the_United_States.svg)

## Physical Harassment and Assault

Figure 1.15 Frequency of Physical Harassment in the Past School Year

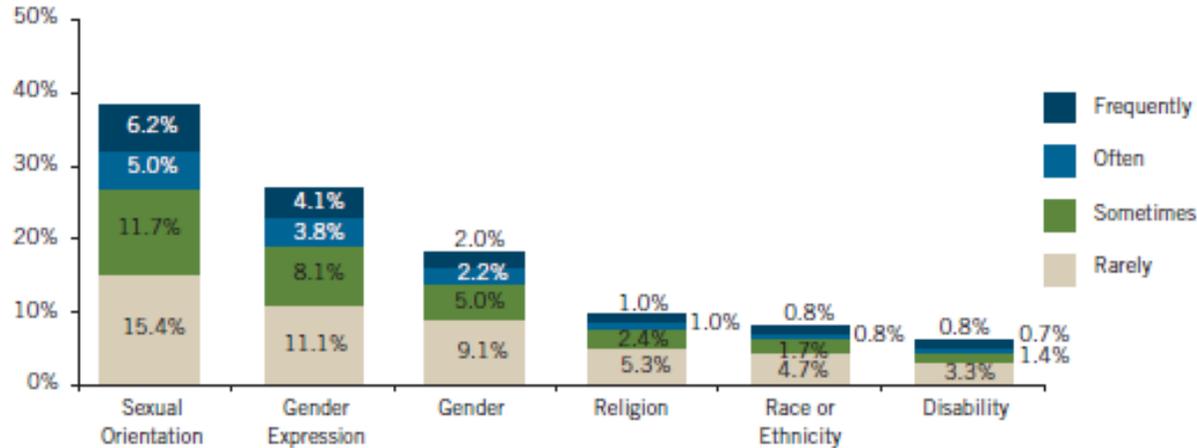
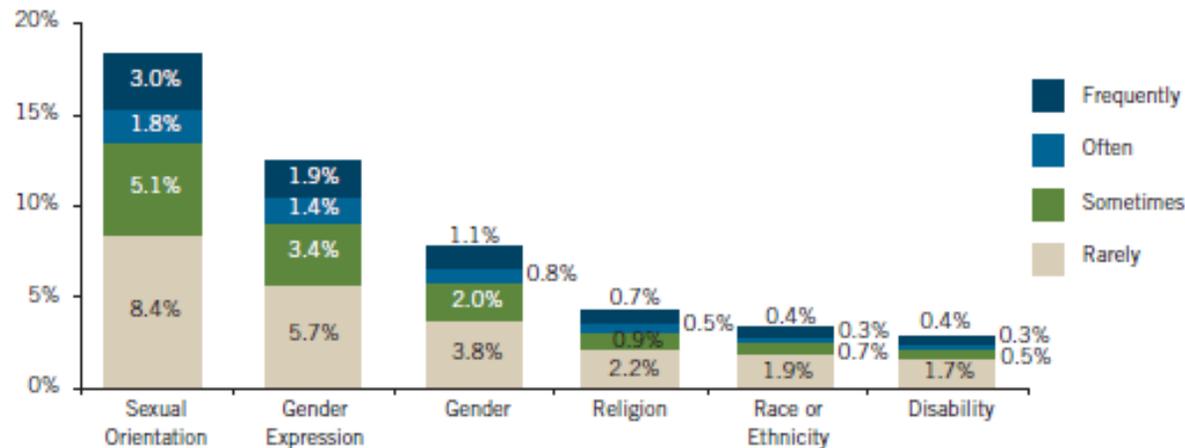


Figure 1.16 Frequency of Physical Assault in the Past School Year



▶ GLSEN (2012) *The 2011 national school climate survey: The experiences of lesbian, gay, bisexual, and transgender youth in our nation's schools*. New York, NY: GLSEN.

# Hard Data

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Table 4

*Alternative-Sample Analysis: Significance Levels (p Values) Comparing Outcomes Between Straight- and LGBTQ-Identified Students, When Excluding and Including Multiple-Low-Frequency Responders*

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	A. Main Analysis (Excluding Multiple-Low-Frequency Responders)	
Outcome		LGBTQ
Suicide ideation	< .0001	
Suicide attempts	< .0001	
Cyber-bullying victimization	< .0001	
Victimization (composite)	< .0001	
Preferring to attend school with no gay or lesbian students	< .0001	
School belongingness (composite)	< .0001	
Unexcused absences	< .0001	

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- ▶ Robinson, J. & Espelage, D. (2011). Inequities in educational and psychological outcomes between LGBTQ and straight students in middle and high school. *Educational Researcher* 40(7), 315-330.

# Does that affect learning?

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- ▶ The grade point average (GPA) for LGBT students nationally who were frequently harassed because of their sexual orientation or gender expression was significantly lower (2.9) than that of LGBT students experiencing less harassment (3.2).



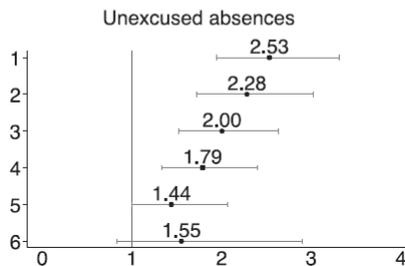
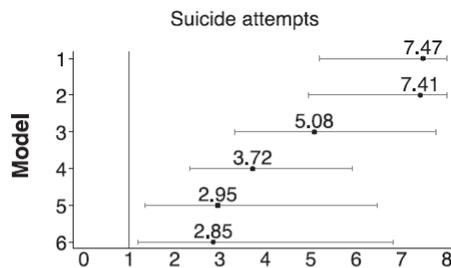
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- ▶ GLSEN (2012) *The 2011 national school climate survey: The experiences of lesbian, gay, bisexual, and transgender youth in our nation's schools*. New York, NY: GLSEN.

# GLSEN Recommends

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- ▶ Implement comprehensive school bullying/harassment policies that specifically protect LGBT students.
- ▶ Support Gay-Straight Alliances (LGBT student support groups).
- ▶ Provide clear training to staff about how to respond and support LGBT students.
- ▶ Increase student access to LGBT-inclusive curricular resources.

# Addressing “Bullying” Not Enough



- Odds ratios (LGBTQ vs. straight):
  - 1.4 times as likely to skip school;
  - 3.3 times as likely to think about suicide; and,
  - 3.0 times as likely to attempt suicide.
- These differences persist after controlling for demographic variables and victimization levels.
- “It’s the air we breath.” Robinson, 2013



# Inclusive Curriculum...

- ▶ takes a coherent approach which is anticipatory and proactive;
- ▶ has a strategy for delivering equal opportunities and diversity policies;
- ▶ involves the whole institution;
- ▶ matches provision to student needs; and,
- ▶ incorporates regular reflection, review and refinement of strategies and methods that actively involve LGBT students.

***“Often without realizing it, public schools are sending youth LGBTs the message, at best, that something is wrong with them, or at worst, that they do not exist.”***

**Biegle, 2010, p. 136**



# Inclusion in Science, Health, and Math

**Table 1.5 Taught Positive Representations of LGBT-Related Topics in Class**

<b>Classes</b>	<b>% of Students Taught LGBT-Related Topics (n=1419)</b>	<b>% of all Students in Survey (n=8574)</b>
History or Social Studies	54.3%	9.0%
Science	9.4%	1.6%
Health	24.5%	4.1%
Gym or Physical Education	3.7%	0.6%
English	44.5%	7.4%
Foreign Language	11.0%	1.8%
Music	8.5%	1.4%
Math	3.8%	0.6%
Art	13.2%	2.2%
Sociology	7.8%	1.3%
Psychology	13.5%	2.2%
Other Class (e.g., Drama, Philosophy)	19.5%	3.2%

▶ GLSEN (2012) *The 2011 national school climate survey: The experiences of lesbian, gay, bisexual, and transgender youth in our nation's schools*. New York, NY: GLSEN.

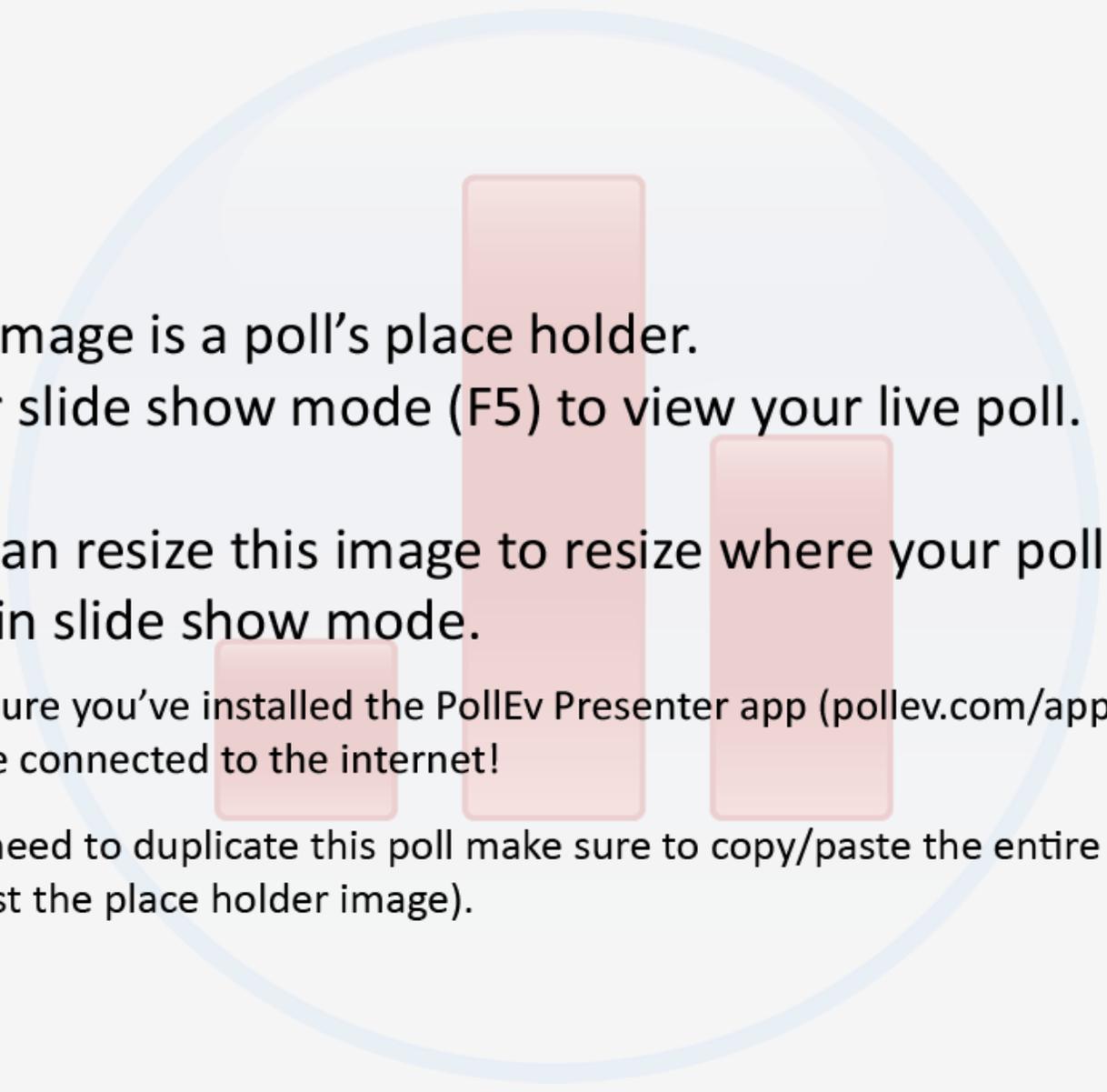
## Make it Better

- A. oSTEM teaching as a career [Dustin]
- B. oSTEM education research [Mary]
- C. oSTEM outreach to K-12 schools [Ikaika]



<http://www.quickanded.com/2013/09/teachers-professionalism-student-learning.html>





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## Final Thoughts (5 minutes)

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- ▶ What can you do to make it better for LGBTQ learners in STEM?



[http://www.esc17.net/users/0209/images/diverse\\_kids.jpg](http://www.esc17.net/users/0209/images/diverse_kids.jpg)



# oSTEM Participant Ideas

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celebrate national LGBT history month at k-12 schools

and 3 - be a role model by having the courage to be an openly gay teacher.

promote social justice through no name calling week

I challenge myself as a future educator to 1- make it known that I am an ally through pins or posters, 2 - start or continue to help the GSA at my

Reach out to K-12 schools and subtly bring awareness of the issues to younger students.

share what I've learned about inclusion with other teachers!!!

don't be a bystander - help educators learn to be inclusive and reinforce inclusive behaviors

Be a mentor: talk about my positive experiences being LGBTQ i

volunteer as a speaker at a school's STEM classroom or GSA meeting

talk about all types of families, not just nuclear mom/dad.

; Don't erase LGBT people from the history books; if a historical figure was LGBT (ex. Turing) be sure to mention that fact.

volunteer in a school and be myself - a positive role model

be present. Let kids know we exists

help fund local gsa chapters

Promote that there is no "single face" of STEM — everyone belongs at the table

show more love to gay people! Weeeeeee!!! :D

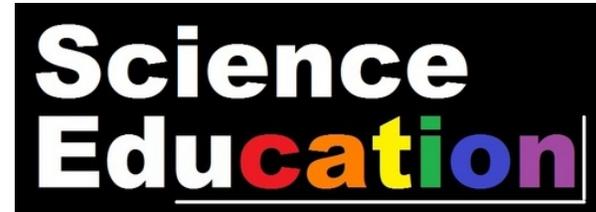
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▶ Data from unedited poll conducted 10/24/2013

# Resources

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- ▶ Twitter: QueerScienceEd
- ▶ Facebook: QScienceEd
  
- ▶ GLSEN Educator Resources:
  - ▶ <http://www.glsen.org/educator>
- ▶ GLSEN's Research:
  - ▶ <http://www.glsen.org/research>
  
- ▶ Email:
  - ▶ Mary -- [mhoelscher@queerscience.org](mailto:mhoelscher@queerscience.org)
  - ▶ Dustin – [ludwil05@umn.edu](mailto:ludwil05@umn.edu)
  - ▶ Ikaika – [iregidor@glSEN.org](mailto:iregidor@glSEN.org)



# Session Description

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There is a high need for all teachers to support lesbian, gay, bisexual, transgender, and questioning (LGBTQ) students in the classroom to improve educational outcomes such as attendance, grades, and pursuit of higher education and to improve psychological health outcomes (Meyers, 2010; GLSEN, 2012; Robinson & Espelage, 2012; Robinson & Espelage, 2013). More than twenty years of research history regarding LGBTQ topics and people in education exists despite persistent exclusion in policy and curriculum (Quinn & Meiners, 2011). Research related to LGBT-inclusion in STEM education, though, has hardly begun (Hoelscher, unpublished). Participants in this workshop will begin by examining positive, LGBTQ-inclusive science learning experiences they have had. They will then self-assess their past school contexts in terms of their present LGBTQ-inclusion and develop an understanding of the role of context in supporting or inhibiting LGBT-inclusive practices (from Elia and Elliason, 2010). An overview of recommended actions for teachers generally (GLSEN, 2012) and STEM teachers specifically (Hoelscher, unpublished) will be provided as participants discuss the connection between their past positive experiences and research findings. Participants will breakout into smaller groups to discuss oSTEM teaching as a career; oSTEM education research as a career; and promoting LGBT-inclusion through outreach by oSTEM groups to local school classrooms.

