

Real life experiences in recruiting, retaining, and supporting LGBTQIA+ engineering students

Dr. Amy Rachel Betz, Kansas State University

Dr. Amy Betz is the Assistant Dean for Retention, Diversity, and Inclusion for the College of Engineering at Kansas State University. She is also an associate professor in the Department of Mechanical Engineering. She received her Ph.D. from Columbia Uni

Craig Wanklyn P.E., Kansas State University

Craig Wanklyn is an assistant dean for the Carl R. Ice College of Engineering at Kansas State University. Prior to K-State, he was an associate at M-E Engineers in Denver, Colorado, and was on the board of governors for the Rocky Mountain chapter of ASHRAE. He holds a bachelor's and master's degree in architectural engineering and an MBA. He is a licensed professional engineer and a LEED-accredited professional in building design and construction.

Rachel Levitt, Kansas State University



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Dr. Amy Betz (she/her)¹
Craig Wanklyn, PE, MBA (he/him)¹
Dr. Rachel Levitt (they/them)²
Mariya Vaughn (she/they)³

1-College of Engineering, 2-Social Transformation Studies, 3-English/K-State First

Expectations

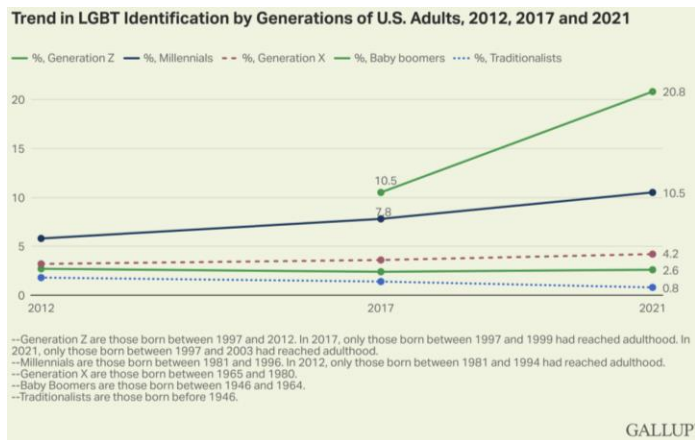
- We will share what we are doing but we also want to hear what you are doing
- Our goal is to help everyone to learn new ideas to better support students
- You do not have to share, and it is okay to disengage if needed
- What are your expectations for the presentation?

We will take approximately 2-3 minutes during the introduction to hear from the audience on their expectations. This will also help us better understand if there are areas of our presentation that might need more focus/attention. The projected timeline is:

50 minutes total

- 1) Introductions and expectations – 5 minutes
- 2) Background/framework – 10 minutes
- 3) Breakout groups and discussion on support model – 10 minutes
- 4) Visible role models and allies – 3 minutes
- 5) Personal identity development – 2 minutes
- 6) Student support and training – 10 minutes
- 7) Equitable Access – 5 minutes
- 8) Putting it all together – 5 minutes

Background

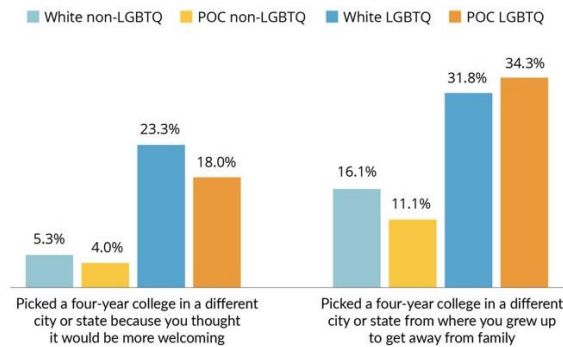


Source: add

While members of the audience may be familiar with this graphic, we do not think it can be overshared! This is one of the most powerful tools to answer, “why should I care?” Generation Z has a much higher rate of LGBTQIA+ identification than any previous generation. This is having a profound influence on attitudes and beliefs as well as their expectations and choices. Generation Z is the bright green line at the top.

Background

Picked a college away from home among adults 18 to 40 by race and LGBTQ status



Source: add

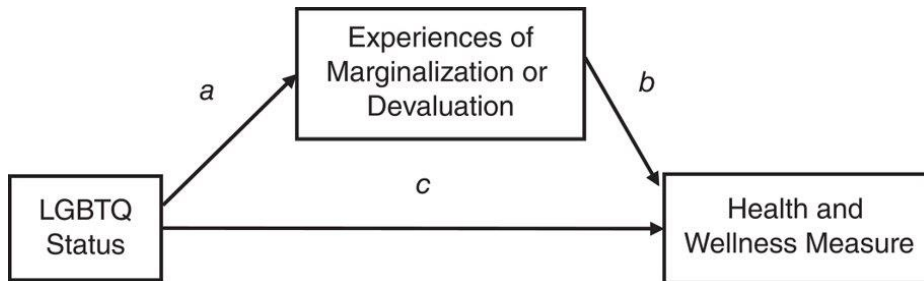
UCLA School of Law
Williams Institute

This chart shows that LGBTQ IA+ students are more likely to move to find colleges that are more welcoming. There is other work by (Edelman, 2023) that shows students are weighing anti-LGBTQIA+ legislation in their college decisions.

There is also the work by (Hughes, 2018) that shows LGBQ (just sexual identity minorities) students are less likely to be retained in STEM related fields.

We will expand more on the national climate and challenges in a second presentation, "**Creating buy-in from key constituencies for supporting LGBTQIA+ engineering students.**" At this point, we will let audience members know that if they cannot attend that presentation, we will be happy to provide them with more information/slides from that presentation. We plan to upload a final set of slides and/or a PDF to a website with QR code at the end of the presentation that participants can utilize.

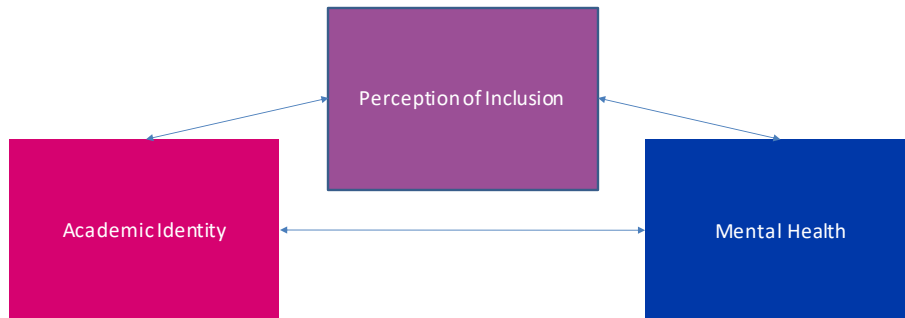
Background



Source: Erin A. Cech and William R. Rothwell, "LGBTQ Inequality in Engineering Education" *JEE*, 2018

We start from the model proposed by Erin Cech that provides evidence that marginalization and devaluation in engineering lead to lower health and wellness measures.

Background



Source: K.J. Jensen and K.J. Cross, "Engineering Stress Culture: Relationships among mental health, engineering identity, and sense of inclusion," JEE, 2021

The model proposed by Cech reminded us of the paper by Jensen and Cross on Engineering Stress Culture. While this paper did include statistical analysis to prove causality, it did show a correlation between the areas. This graphic was created based on the text in that publication.

Background

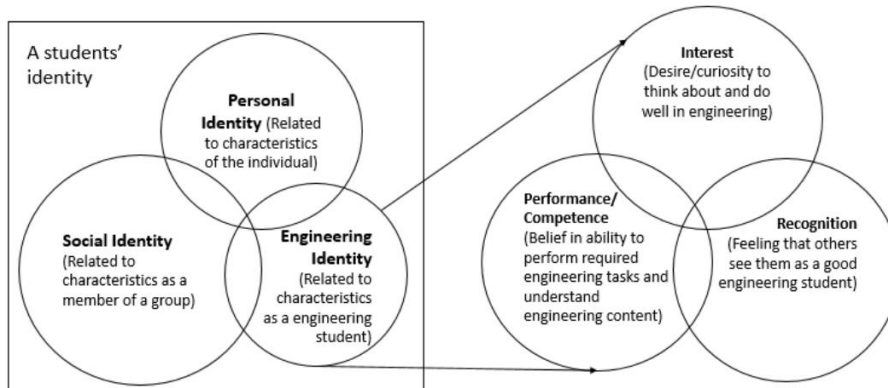
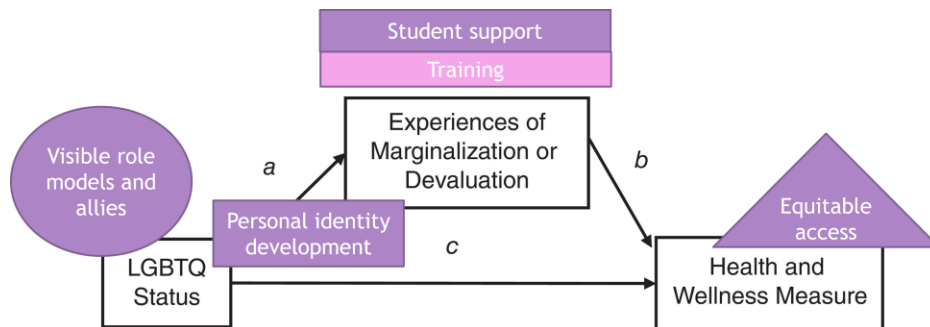


Figure 1. Framework for students' identification with engineering adapted from Hazari et al.¹⁶

Source: Godwin, A. "The Development of a Measure of Engineering Identity", 2016

Digging a little deeper into identity theory we also see some similarities (although not a much overlap), with the student identity framework presented by Godwin as adapted from Hazari. If we think about LGBTQIA+ status as part personal identity but also as a social identity, then we need to think about how their engineering identity is developed in that context.

Our support framework



Using these three frameworks, we propose a four part support structure that is intended to help bring a student's LGBTQIA+ status into their engineering identity as shown in lavender.

- 1) Visible role models and allies
- 2) Personal identity development
- 3) Student support/training
- 4) Equitable access

We will also provide training and support to help prevent some experiences that lead to devaluation. Finally work to provide equitable access to health and wellness resources.

Are their gaps?

- Is there anything you are currently doing that doesn't fit into the categories of the model?
- Are there other categories to include?

Here will pause and get some feedback on the support model covered and categories to see if there are any gaps that might be missed during our discussion. Audience feedback will be encouraged at this time. After feedback on the support model, we will breakup into groups to discuss the four areas with prompts given. After discussion, each group will share.

As we go through each group to share, we will then follow up with K-State examples of what we are doing.

4 support areas

- Group 1 - What is your campus/program doing to make role models and allies more visible?
- Group 2 - What is your campus/program currently doing to help students explore and build their identity that includes or supports both their engineering and LGBTQIA+ identity?
- Group 3 - What student support and training/professional development do you have to minimize the devaluation and marginalization of LGBTQIA+ students?
- Group 4 - How does your campus ensure equitable access to health and wellness resources? What about your classroom? Policy or advocacy work?

Depending on early feedback (and the set up of the room) we may use different models for working together and sharing out the responses. This may included working at each table or having large notepad across the room that people can get up and write on.

Visible role models and allies



Group 1

What is your campus/program doing to make role models and allies more visible?

What is your campus/program doing to make role models and allies more visible? We plan to take notes and include thoughts/comments for each question.

Visible role models and allies



We have worked with several of our LGBTQIA+ alumni to help showcase the diverse careers they have.

- 1) Pictured here is an alum that went to Disney. We also have another alum that currently works in the entertainment industry who spoke to our students this past fall.
- 2) We made our own stickers to give out to students and K-State Athletics have shown support for pride month and pride events.
- 3) We have updated name tags (staff and student ambassadors) to allow the inclusion of pronouns.
- 4) Visible TVs related to DEIB and LGBTQIA+ support that every campus visitor sees. Every campus tour group stops to see these TVs. These TVs are on 24/7 for all students to see.

These small changes have made for big conversations.

Personal Identity Development



Group 2

What is your campus/program currently doing to help a student explore and build their identity that includes or supports both their engineering and LGBTQIA+ identity?

What is your campus/program currently doing to help a student explore and build their identity that includes or supports both their engineering and LGBTQIA+ identity? We plan to take notes and include thoughts/comments for each question.

Personal Identity development

- For many their LGBTQIA+ identity and engineering identity seems incongruous
- LGBTQIA+ youth (and professionals) need more information about how the various steps and stages of their engineering career will look to imagine how they will develop
- Talk about careers and career paths
- Personal stories

We have helped to organize several GSA (Gender Sexuality Alliance) high school recruitment events in collaboration with our Spectrum center (formerly the LGBT center). A common theme we see is that students do not view themselves as an engineer even when they have strong science/math/academic achievement identities.

We have also participated/presented at several local, regional and national conferences that include high school, community college, 4-year college and professionals. We continue to see this reoccurring theme of having difficulty "finding your fit."

Careers (part of identity development)

The image displays two screenshots of corporate websites. The left screenshot is from Spirit AeroSystems, titled "Diversity, Equity & Inclusion". It features a header with navigation links, a row of four diverse individuals' faces, and a main section with the text: "We're continuing to build a culture where everybody belongs. That's what sparks our innovation. And our progress toward a more inclusive workforce and a better world." Below this, there are four statistics: an 89% increase in the number of employees globally, a 74% increase in the number of employees from underrepresented communities globally in 2020, a 71% increase in the number of Black employees in the U.S., and a 104% increase in the number of Hispanic/Latino employees in the U.S. The right screenshot is from Hallmark, titled "care for our PEOPLE". It features a header with navigation links, a banner with many hands of various colors, and a main section titled "Affirming the Rights and Contributions of LGBTQ+ Employees Across the Hallmark Enterprise". The text below discusses Pride Month 2020 and the company's commitment to affirming and lifting up all LGBTQ+ employees.

These are example of the websites from a few well known employers for our graduates. This can be leveraged at any point in the student pipeline. We have presented this information at outreach and recruitment events as well as on-campus events for current students.

Student support



Out in Science, Technology, Engineering and Mathematics



We have the traditional support structures such as oSTEM. K-State also has a Spectrum center (formerly LGBT resource center) and a minor in queer studies. Collaboration with these individuals and units have been very effective to find new ways to support students. Information gathering and targeting support can be difficult because students may not self-identify. Broad outreach to all students is very important. Using terminology such as including allies and allyship helps students attend without having to self-identify as being part of the LGBTQIA+ community.

Student support and training



Group 3

What student support and training/professional development do you have to minimize the devaluation and marginalization of LGBTQIA+ students?

What student support and training/professional development do you have to minimize the devaluation and marginalization of LGBTQIA+ students? We plan to take notes and include thoughts/comments for each question.

Training

- Engineering Ambassadors
- Tutors
- Faculty Workshops
 - Safe Zone

Training has been established through long-term partnerships through the engineering office of Diversity, Equity, Inclusion, and Belonging, the Spectrum Center (formerly LGBT resource center), the Engineering Office of Recruitment, social transformation studies, and other entities in the college of engineering. This is a core topic for all training of student ambassadors (approximately 80 students). Modules are provide in our tutor on-boarding process. The college/campus has faculty/staff training through SAFE Zone, etc.

A person does not have to identify as part of this community to create or deliver this type of training. However, we always encourage, if someone is comfortable, for someone from the community to deliver the training as it is powerful. Thought must be given though between having the authentic voice and over-burdening underrepresented groups who are always tasked to lead training. This is a long-term process of continuous improvement and assessment.

A first step in our process is identifying the leaders and forming the partnerships for trainings.



Group 4

How does your campus ensure equitable access to health and wellness resources? What about your classroom? Policy or advocacy work?

How does your campus ensure equitable access to health and wellness resources? What about your classroom? Policy for advocacy work? We plan to take notes and include thoughts/comments for each question.

Equitable Access

- Including LGBTQIA+ resources as part of mental health, wellness, and student success discussions
- Promoting health and wellness activities across campus to all engineering students



LGBTQIA+ resources were being left out of equitable access, but now they are included in student success discussions and wellness activities on campus

Equitable Access

- The Bandana Project (campus wide)
 - Campus workshops led by students
 - Ambassador and student group trainings
 - Visible green bandana for students to learn how to recognize and respond to signs of distress in their peers



Lafene Health Center (K-State's health center) on campus has many programs for student wellness. Lafene has student ambassadors who are part of the THRIVE navigators who do training to help students learn how to recognize and respond to signs of distress in their peers. The main program is the bandana project. Students who complete the training/workshop can receive a green bandana to put on their backpack (or somewhere visible) and also have cards to help students out. This is another visible sign of students supporting students. Every engineering ambassador goes through this program.

Putting it all together

- What stood out to you today?
- What practices might you change or implement?
- What's in part 2

Wrapping it up and putting it all together. After going through the 4 areas and hearing thoughts/ comments, are there areas that stood out? What practices might you change or implement on your own campus? We want attendees to be able to leave with at least one (if not more) ideas that they might be able to implement on their own campus.

Any extra time will be left for discussion and questions which will lead into the second presentation on "**Creating buy-in from key constituencies for supporting LGBTQIA+ engineering students**"

References and resources

- Cech, Erin A. and William R. Rothwell, "LGBTQ Inequality in Engineering Education," Journal of Engineering Education, 2018
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