

# Promoting LGBTQ Equality in Engineering via Online Safe Zone Workshops

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**Abstract**— This Work in Progress paper describes an initiative to promote (lesbian, gay, bisexual, transgender, and queer) LGBTQ equality in engineering via online Safe Zone workshops as a means to create a visible network of LGBTQ-affirming faculty who contribute to creating a positive and inclusive climate in engineering departments. The online Safe Zone workshop series is part of a larger project that aims to (1) identify aspects of engineering culture that present barriers to LGBTQ equality, (2) build knowledge and skills to disrupt discrimination and promote LGBTQ equality in engineering departments on college campuses and (3) to identify best practices for promoting LGBTQ equality in engineering. More than 270 engineering educators have attended the 20 on-site Safe Zone Workshops offered at the ASEE Annual Conference in 2014 and 2015; online workshops were launched in 2016 to reach a broader audience. Evaluation results indicate that the content of the Safe Zone Workshops has been appropriately tailored to an audience of engineering educators, and that there is a clear call to expand the workshops and nurture the conversation about LGBTQ inclusion in engineering. Online technology is being used to create a scalable model for sharing knowledge, tools and resources to promote LGBTQ inclusion in environments that are traditionally difficult to penetrate. The online workshops were launched in early 2016 and will continue through mid-2017. In this paper we share preliminary evaluation results from a single workshop and discuss lessons learned from initial implementation.

**Keywords**— *LGBTQ, Diversity, Faculty Development, Safe Zone workshops*

## I. INTRODUCTION

Even though recent years have seen significant advances in LGBTQ equality in the U.S. through legislation and social acceptance, research shows that LGBTQ students and faculty on college campuses still experience exclusion and discrimination. A landmark study [1] conducted in 2010 involving more than 5,100 students, faculty and administrators found disturbing statistics: 29% of LGBTQ students and faculty experienced harassment and discrimination; one-third of respondents believed the university's response to incidents of LGBTQ harassment was inadequate; 20% of LGBTQ respondents feared for their physical safety on campus; 30% of LGBTQ individuals seriously considered leaving their institution due to negative experiences and perceptions. Initiatives such as Safe Zone ally training are effecting a gradual positive change in campus climate for LGBTQ individuals. Unfortunately, only a small fraction of U.S. institutions offer support services specifically focused on the needs of this community. Furthermore,

engineering departments have proven more impervious to change than other disciplines. A study conducted in 2014 [2] comparing the academic climate and career consequences for LGBTQ faculty found that those in STEM fields reported the highest level of discomfort on campus, in departments and in classrooms; and those who were not comfortable were 2.56 times more likely to consider leaving. We discuss in more detail these and other relevant data in [3].

We pose that the dominant hetero- and cis-normative engineering culture creates a hostile climate that discourages LGBTQ individuals from joining/staying in the field. This paper describes an online Safe Zone workshop series designed to raise awareness about LGBTQ issues, as well as to equip and empower engineering faculty to advance LGBTQ equality in their departments. Our ultimate goal is to develop a critical mass of advocates and allies that foster LGBTQ-inclusive and supportive climate in their local environments.

## II. ONLINE SAFE ZONE WORKSHOPS

### A. Background

Safe Zone workshops are an LGBTQ ally training initiative offered on some college campuses. Woodford et al. [4] studied the design characteristics and content of campus ally training programs and found that training programs comprised four main curricular themes: (1) understanding LGBTQ concepts and developing awareness of biases, (2) understanding LGBT issues and recognizing discrimination and heterosexual privilege, (3) becoming support persons to LGBT individuals, and (4) becoming advocates to create LGBTQ-affirming campuses.

The impact of ally training programs has been evaluated in the context of individual college campuses. For example, a Safe Zone program at a large Midwestern university had a positive impact on the visibility of LGBT people and issues on campus, and increased support for LGBT people [5].

Since 2014 ASEE has offered Safe Zone ally trainings at its annual conference. These Safe Zone workshops are specifically geared toward an audience of engineering educators with a focus on creating inclusive classrooms and departments, and supporting LGBTQ students and colleagues.

## B. Content

To reach a STEM audience beyond ASEE conference attendees, online Safe Zone workshops were created. The online Safe Zone workshops were designed to build knowledge and skills to disrupt discrimination in the engineering field, and encourage LGBTQ equality and inclusion in engineering departments on college campuses. The content of the online workshops was further refined by STEM faculty, with input from STEM students and scholars of engineering culture, through biweekly meetings of a virtual community of practice. Examples were added based on findings from the literature on LGBTQ/STEM, and case studies were developed based on personal experiences and observations in STEM-specific situations.

These 2-hour workshops are divided into two distinct levels: Level 1 (introductory) and Level 2 (intermediate). Level 1 workshops focus on understanding LGBTQ concepts and terminology, the process of coming out, how to incorporate inclusive language in daily conversation, and tips and recommendations for creating an inclusive and safe learning environment. Level 2 workshops are STEM-centric and explore LGBTQ issues more deeply, introducing the topics of hetero-normativity in the engineering field, transgender issues, types of micro-aggressions, techniques to disrupt discrimination in the classroom, and Safe Zone conduct guidelines. The agendas for Level 1 and Level 2 workshops are presented in Table I. Participants are encouraged to complete both levels in order.

TABLE I. ONLINE SAFE ZONE WORKSHOPS AGENDAS

| Level 1                              |
|--------------------------------------|
| Basic LGBTQ terminology and concepts |
| Identity development, coming out     |
| Creating an inclusive environment    |
| How to be an Ally                    |
| Level 2                              |
| STEM climate and culture             |
| Microaggressions                     |
| Disrupting bias and discrimination   |
| Trans issues                         |
| Safe Zone guidelines                 |

## C. Assessment

Numerous studies conducted in recent years have concluded that online learning experiences are similarly as effective as face-to-face learning experiences, sometimes referred to as the “no significant difference” phenomenon. However, not all online learning experiences are alike and more research is needed to determine the effects of specific online learning offerings, adopting more rigorous research design methods and implementations [6].

The effectiveness of the online Safe Zone workshops is being evaluated through an IRB-approved online survey. The survey comprises a total of 13 content-related statements to which participants indicate their level of agreement on a 4 point Likert scale from strongly disagree to strongly agree (see Table II). The statements target level of awareness/understanding as well as likelihood to adopt recommended practices. The survey also includes several questions on the effectiveness of the software/technology employed. The survey does not track demographics of the participants.

## D. Pedagogy

The workshops are presented live using the Adobe Connect e-learning platform. Two facilitators present the workshop content, with the assistance of a moderator. Throughout the workshops, in an effort to engage participants in the content and encourage deeper learning, the facilitators broach discussion topics and ask open-ended questions. Discussion takes place through the chat boxes in Adobe Connect, which are accessible and visible to all participants. This open discussion format allows participants to engage not just with the facilitators, but with each other, and offers a wider range of experiences and perspectives from which to learn.

## III. PRELIMINARY RESULTS

The first two iterations of the Level 1 Safe Zone online workshops occurred on April 18 and April 28, 2016. Both workshops reached the registration goal of 65 single registrants. The April 18 workshop had 58 attendees, 40 of whom logged in individually, and 18 who participated in “watch parties” held by two separate engineering faculty members (containing a combination of students and faculty attendees). The April 28 workshop had 46 attendees, 42 of whom logged in individually, and 4 who participated in a single “watch party” held by an engineering faculty member. Throughout the workshops, attendees were consistently engaged and participated in robust group chats and discussions.

Twenty attendees participated in the April 18 follow-up survey (36 % response rate), and eighteen participated in the April 28 survey (39% response rate) which was shared (via hyperlink) both during the workshop, and in follow-up emails. The content items received an average score of 3.27 out of 4 (see Table II). Key takeaways from these survey responses indicate:

- The workshops were effective at developing better understanding about basic LGBTQ terminology and concepts (81% of respondents “agreed” or “strongly agreed” with this statement).

- The workshops motivated and equipped faculty attendees to add a diversity statement to their syllabi (92% of the attendees for whom this item was applicable “agreed” or “strongly agreed” that they will ensure adding a diversity statement).
- The workshops were effective at raising awareness of the importance of creating an inclusive environment; (94% of respondents “agreed” or “strongly agreed” that they will make an effort to use more inclusive language).

#### IV. LESSONS LEARNED

The online Safe Zone Workshops are distinctive in their content and offerings; these are the only online events focused on LGBTQ inclusion and equality in STEM fields. The online format of these workshops renders them more accessible to participants, who may not be able to attend face-to-face Safe Zone workshops for a number of reasons. The post-event survey will help the project team continuously assess the effectiveness of the workshops. Lessons learned through the first iteration include:

- Regarding initial event promotion, personalized correspondences go a long way. Half of the survey respondents (19 out of 38) indicated that they heard about this event through email correspondence.
- Participants desire more educational offerings on this topic. Two-thirds of the survey respondents (24 out of 36 who answered this question) indicated that they would like to receive bi-monthly emails on events related to this project.
- The project team should promote the idea of “watch parties” more for future events, and streamline a process for capturing participants and ensuring that they receive the follow-up survey.
- Workshop facilitators should spend more time on increasing participant understanding of (1) LGBTQ identity development and (2) concerns that LGBTQ students have about entering the professional workforce. These two questions received the lowest scores (2.97 and 3 out of 4, respectively). Workshop administrators are considering switching these topics to Level 2 workshops.

The workshops are being continually refined based the results of the evaluation survey. Level 1 and Level 2 workshops will be offered in fall 2016 and spring 2017. Due to the observed demand for in depth discussion of certain topics, several 60 minute “deep dive” workshops are being developed for topics such as: Title IX protections, supporting transgender students and colleagues, and responding to bias.

TABLE II. FOLLOW-UP SURVEY RESPONSE SUMMARY (CONTENT-RELATED QUESTIONS)

| Please indicate your level of agreement with the following statements regarding the workshop                                                                                                                                       | Distribution of Responses |                       |              |           |                    | Average |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|-----------------------|--------------|-----------|--------------------|---------|
|                                                                                                                                                                                                                                    | Not Applicable            | 1 - Strongly Disagree | 2 - Disagree | 3 - Agree | 4 - Strongly Agree |         |
| I have a better understanding of LGBTQ terminology and concepts.                                                                                                                                                                   | 1                         | 4                     | 1            | 13        | 19                 | 3.3     |
| I have an increased awareness of biases faced by LGBTQ individuals.                                                                                                                                                                | 1                         | 5                     | 0            | 15        | 17                 | 3.2     |
| I am better able to recognize heteronormative and cis-normative assumptions and privilege.                                                                                                                                         | 1                         | 4                     | 1            | 15        | 17                 | 3.2     |
| I have a better understanding of identity development.                                                                                                                                                                             | 1                         | 6                     | 3            | 14        | 14                 | 3.0     |
| I have a better understanding of the coming out process.                                                                                                                                                                           | 1                         | 4                     | 1            | 14        | 18                 | 3.2     |
| I have a better understanding of the concerns that LGBTQ students have about entering the professional workforce.                                                                                                                  | 3                         | 7                     | 1            | 12        | 15                 | 3.0     |
| I am better prepared to respond to homophobic or cis-phobic comments and jokes.                                                                                                                                                    | 1                         | 3                     | 0            | 20        | 14                 | 3.2     |
| I will assume a lesbian, gay, bisexual or transgender or intersex person might be present.                                                                                                                                         | 1                         | 3                     | 0            | 17        | 17                 | 3.3     |
| I will use inclusive (gender neutral) language like spouse or partner when speaking about a significant other in conversations.                                                                                                    | 1                         | 2                     | 1            | 16        | 18                 | 3.4     |
| I will make an effort to use inclusive language.                                                                                                                                                                                   | 1                         | 2                     | 0            | 12        | 23                 | 3.5     |
| I will ensure that my syllabus has a diversity welcome statement that explicitly includes gender, gender expression, gender identity and sexual orientation among the minority groups that are welcomed and respected in my class. | 10                        | 2                     | 0            | 8         | 18                 | 3.5     |
| I will provide a mechanism for students in my class to indicate a preferred name and pronoun.                                                                                                                                      | 10                        | 1                     | 1            | 11        | 15                 | 3.4     |
| I will try to make my curriculum more inclusive, e.g. by introducing positive representations of LGBTQ people.                                                                                                                     | 13                        | 1                     | 3            | 7         | 14                 | 3.4     |

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